DEPOT MAINTENANCE WORK REQUIREMENT CONTAINING NATIONAL MAINTENANCE REPAIR STANDARDS

FOR

CH-47D HELICOPTER
(NSN 1520-01-088-3669) (EIC: RCD)

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*This publication supercedes DMWR 55-1500-210, 1 February 1976, including all changes.

US ARMY AVIATION AND MISSILE COMMAND REDSTONE ARSENAL, AL 25 January 2005
WARNING SUMMARY

This warning summary contains general safety warnings and hazardous material warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel. Also included are explanations of the safety and hazardous materials icons used within the technical manual. Refer to the applicable Material Safety Data Sheet (MSDS) for health and physical hazards associated with any product.

EXPLANATION OF SAFETY ICONS

BURNS IRRITATE: Drops of liquid on hand show burns or irritation to human skin or tissue.

EYE INJURY: Person with goggles show that the material will injure the eyes.

FLAMMABLE: All regulations and instructions for handling fuels shall be strictly observed.

EXPLOSIVE HAZARD:

GENERAL SAFETY WARNING DESCRIPTION

WARNING

Heated or chilled parts are used in the removal and installation procedures. Death or severe burns may result if personal fail to observe safety precautions. It may be necessary to heat parts containing bushings and bearings to a temperature of 275° F (135° C). It may be necessary to chill parts to a temperature of -100° F (-73° C). Protective gloves should always be worn when handling heated or chilled parts.

WARNING

Wear approved mask, goggles, gloves, and apron during cleaning operations. Avoid contact with skin and eyes. If contact occurs, flush affected areas with water and change contaminated clothing. Seek medical aid immediately.

WARNING

Solvents with a flash point greater than 100 degree F (38 degree C) should be used unless otherwise specified.
GENERAL SAFETY WARNING DESCRIPTION - continued

**WARNING**

Observe all cautions and warnings on the containers of consumable materials specified for use in this DMWR. When applicable, wear approved protective clothing during handling and use.

**WARNING**

When drilling, wear goggles to prevent eye injury from flying particles. If eye injury occurs, seek medical aid immediately.

**WARNING**

Compressed air shall not be used for cleaning purposes except when reduced to less than 30 psi, and then only with effective chip guarding and personnel protection equipment.

**WARNING**

Prolonged or repeated inhalation of powders and vapors of cleaning solvents, developers, and emulsifiers used in fluorescent penetrant inspection can irritate mucous membrane areas of the body. Continual exposure to penetrant inspection materials and prolonged exposure of skin to light can inflame and damage the skin. Wear neoprene gloves when handling penetrant inspection materials. When using black light for fluorescent inspections, wear safety glasses.

**WARNING**

Preservative hydraulic fluids, MIL-H-46170 and MIL-PRF-6083 will not be used for preservation of army aircraft hydraulic components. Instead, substitute MIL-PER-83282 and MIL-H-5606 hydraulic fluids, respectively, for preservation of these components.

**WARNING**

The adapter, plate pack, and three bolts form part of a balanced assembly and only one bolt and nut may be loosed at one time. If more than one bolt is loosened at a time, the adapter assembly must be replaced.
EXPLANATION OF HAZARDOUS MATERIALS ICONS

- **FLAMMABLE**: Flames show that a material may ignite and cause burns.

- **VAPORS**: Human figure in cloud of vapors shows that material vapors present a danger to life or health.

- **CANCER**: Material has been determined to be a cancer risk in humans.

- **POISON**: Skull and crossbones show that material is poisonous or is a danger to life.

HAZARDOUS MATERIALS DESCRIPTION

**WARNING**

ACETONE, TECHNICAL (6810-00-223-2739)

Acetone is a highly volatile and flammable liquid. Do not use near heat, spark, flame or other ignition sources. It must be used only in well-ventilated areas. Provide mechanical ventilation if used in confined spaces. Personnel must wear protective gloves and eye protection. Excessive inhalation of vapors or contact with skin must be avoided. If contact occurs with eyes or skin, flush area thoroughly with water. If ingestion occurs, induce vomiting. Seek medical attention in all cases. When handling large quantities of liquid (more than a gallon), use at air-exhausted workbench. Dispose of liquid-soaked rags in approved metal safety container. Store solvent in approved metal containers, which must be grounded to maintain electrical continuity. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

**WARNING**

ADHESIVE, BONDING, MMM-A-121 (8040-00-273-8716)
ADHESIVE, VELCRO No. 40 (8040-00-142-9947)
ADHESIVE, MMM-A-132 (8040-01-035-2845)
ADHESIVE, POLYURETHANE, EC-3549 (8040-01-016-4836)
ADHESIVE, EA 9309 NA (8040-01-163-3481)
ADHESIVE, EC-2216 (8040-00-932-1945)
ADHESIVE, EPON VI, MMM-A-134 (8040-00-200-4390)
ADHESIVE, EPON VIII, MMM-A-134 (8040-00-531-8030)
ADHESIVE, EPOCAST 50-A (8040-00-148-9849)
ADHESIVE, EPON 828 (8030-00-086-1506)
ADHESIVE, PROSEAL 719B (8040-01-105-9100)
HAZARDOUS MATERIALS DESCRIPTION – continued

ADHESIVE, PROSEAL 501 (8040-00-126-7798)
ADHESIVE, PR1710 (8040-00-142-9721)
ADHESIVE, PR9021 (8030-01-058-9968)
ADHESIVE, RTV102, MIL-A-46106 (8040-00-877-9872)
ADHESIVE, URALANE 5716 (8040-00-828-4936)

Adhesive is a flammable substance. Wear gloves and safety glasses. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. If contact with skin or eyes occurs, wash skin with soap and water, and flush eyes with water for 15 minutes. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. If ingestion occurs, DO NOT induce vomiting. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

WARNING

ALCOHOL, DENATURED, O-E-760 (6810-00-543-7415)

Denatured Alcohol is a highly flammable liquid. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. May be fatal or cause permanent blindness if swallowed. Remove solvent saturated clothing. If vapors cause drowsiness, go to fresh air. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

WARNING

ASSEMBLY FLUID (9150-00-159-5012)

Assembly Fluid is a non-flammable liquid. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water for 15 minutes. If ingested induce vomiting; consume large amounts of water. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.
HAZARDOUS MATERIALS DESCRIPTION - continued

**WARNING**

![Icon](image)

**BERYLLIUM**

Beryllium dust may be harmful to health. If beryllium gets on the skin, wash affected area immediately with soap and water. Remove clothing that comes in contact with beryllium and wash affected area as described above.

**WARNING**

![Icon](image)

**CLEANING COMPOUND, AIRCRAFT SURFACE, TURCO (6850-01-045-7929)**

Cleaning Compound is a non-flammable liquid. Contact of liquid with skin may cause dermatitis and irritation. May be irritating to nose, throat, and respiratory tract when inhaled and is a mild eye irritant. Provide mechanical ventilation if used in confined spaces. Inhalation of vapors may cause central nervous system depression, drowsiness and narcosis. If ingested DO NOT induce vomiting. Keep head below hips to prevent aspiration of liquid into lungs. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

**WARNING**

![Icon](image)

**CLEANING COMPOUND, SOLVENT, MIL-PRF-680 (6850-01-474-2313)**

Cleaning Compound is a highly flammable liquid. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache and may cause central nervous system depression. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Remove solvent saturated clothing. If vapors cause drowsiness, go to fresh air. Seek medical attention in all cases. Coordinate use of this material with your supporting Industrial Hygiene and Safety Offices. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.
HAZARDOUS MATERIALS DESCRIPTION - continued

WARNING

CLEANING COMPOUND, SOLVENT, POSITRON (6850-01-412-0028)
CLEANING COMPOUND, SOLVENT, ELECTRON (6850-01-375-5553)
CLEANING SOLVENT, GENERAL PURPOSE, DS-108 (7930-01-367-0995)

Cleaning Compound and Cleaning Solvent are highly flammable liquids. Do not use near heat, spark, or flame. Use in well-ventilated areas only; avoid prolonged breathing of vapors. Use an approved respirator (organic vapor respirator with dust and mist filter is recommended) if exposure exceeds permissible exposure limits and/or threshold limit values. Provide mechanical ventilation if used in confined spaces. Remove to fresh air if overexposure occurs. Wear gloves and safety glasses. If contact with skin or eyes occurs, wash skin with soap and water, and flush eyes with water. If ingestion occurs, DO NOT induce vomiting. Seek medical attention in all cases. These products are reactive with acids and oxidizers; do not mix or cross apply with other cleaners or chemicals. Keep containers closed between applications. Ensure you read and understand the Material Safety Data Sheet (MSDS) for these products prior to use.

WARNING

CORROSION PREVENTIVE COMPOUND (8030-00-244-1297)

Corrosion Preventive Compound is a flammable grease. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Provide mechanical ventilation if used in confined spaces. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.
HAZARDOUS MATERIALS DESCRIPTION - continued

WARNING

CORROSION RESISTANT COATING, ALODINE (8030-00-065-0957)

Corrosion Resistant Coating is a non-flammable liquid. Wear gloves and safety glasses. If contact with eyes occurs, flush with water for 5 minutes, then with normal saline 30-60 minutes, lifting lids. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. Provide mechanical ventilation if used in confined spaces. If ingestion occurs induce vomiting, repeat until vomit is clear. Consume large amounts of water. If contact with skin occurs, wash skin with soap and water. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

WARNING

CURING AGENT

Curing agent can irritate skin and cause burns. Avoid contact with skin, eyes, or clothing. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

WARNING

DRY ICE/METHANOL

Dry ice/methanol is toxic. It can irritate skin and cause burns. Avoid inhaling. Use only with adequate ventilation. Avoid contact with skin, eyes, or clothing. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.
HAZARDOUS MATERIALS DESCRIPTION - continued

**WARNING**

EPOXY COATING KIT (8010-01-033-7793)

Epoxy Coating is a flammable liquid. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. Exposure may cause impairment of the central nervous system. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. If vapors cause drowsiness, go to fresh air. If ingestion occurs, DO NOT induce vomiting. Seek medical attention in all cases. Keep away from oxidizing agents. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

**WARNING**

EPOXY PRIMER COATING KIT, MIL-P-23377 (8010-00-082-2450)

Epoxy Primer is a highly flammable liquid. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Seek medical attention in all cases. If vapors cause drowsiness, go to fresh air. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

**WARNING**

FILLER

Filler can irritate skin and cause burns. Avoid contact with skin, eyes, or clothing. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.
HAZARDOUS MATERIALS DESCRIPTION - continued

**WARNING**


Fuel is flammable. Do not use near welding area, open flames, or on very hot surfaces. Use only with adequate ventilation. Avoid prolonged or repeated contact with skin. Prolonged contact may cause drying and irritation of skin. Remove saturated clothing immediately. Do not smoke when handling fuel. Do not take internally. Store in approved, metal safety containers.

**WARNING**

ISOPROPYL ALCOHOL, TECHNICAL (6810-00-983-8551)

Isopropyl Alcohol is a highly flammable liquid. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Remove solvent saturated clothing. Seek medical attention in all cases. If vapors cause drowsiness, go to fresh air. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

**WARNING**

LACQUER

Lacquer is a highly flammable liquid. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Seek medical attention in all cases. If vapors cause drowsiness, go to fresh air. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.
HAZARDOUS MATERIALS DESCRIPTION - continued

**WARNING**

LUBRICANT, SOLID FILM, LUBRI-BOND (9150-00-754-0064)

Solid Film Lubricant is a flammable substance. Wear gloves and safety glasses. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. Provide mechanical ventilation if used in confined spaces. If contact with skin or eyes occurs, wash skin with soap and water, and flush eyes with water for 15 minutes. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. If ingestion occurs, DO NOT induce vomiting. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

**WARNING**

LUBRICATING OIL, AIRCRAFT TURBINE ENGINE, MIL-L-23699 (9150-00-985-7099)
LUBRICATING OIL, HELICOPTER TRANSMISSION, DOD-L-85734 (9150-01-209-3399)

Lubricating Oil is a non-flammable liquid. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Remove contaminated clothing. If ingestion occurs, DO NOT induce vomiting. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

**WARNING**

POLYURETHANE COATING, MIL-PRF-85285C (8010-01-293-0789)
POLYURETHANE TOPCOAT, MIL-PRF-85285C

Polyurethane topcoat is a highly flammable liquid. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Seek medical attention in all cases. If vapors cause drowsiness, go to fresh air. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.
HAZARDOUS MATERIALS DESCRIPTION - continued

**WARNING**

REMOVER, PAINT (8010-01-248-0846)

Paint Remover is a non-flammable liquid. It is a cancer risk to humans. It also may cause central nervous system effects, headache, dizziness, nausea, and unconsciousness. Wear gloves and safety glasses. Use an approved respirator if exposure exceeds permissible exposure limits and/or threshold limit values. Provide mechanical ventilation if used in confined spaces. If contact with skin or eyes occurs, wash skin with soap and water, and flush eyes with water for 15 minutes. If ingestion occurs, DO NOT induce vomiting. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

**WARNING**

RESIN COMPOUND

Resin compound can irritate skin and cause burns. Avoid contact with skin, eyes, or clothing. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

**WARNING**

SEALING COMPOUND, MIL-S-8802 (8030-00-753-5009)
SEALING COMPOUND, PR-1428 (8030-01-365-3913)
SEALING COMPOUND, RP1250 (8030-00-830-1821)

Sealing Compound is a flammable substance. It is cancer risk to humans. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, headache and impaired coordination. May cause eye, skin and nose irritation. Provide mechanical ventilation if used in confined spaces. Long-term exposure may lead to dermatitis, liver and kidney damage. Keep away from reducing agents and combustibles. If contact with skin or eyes occurs, wash skin with soap and water, and flush eyes with water for 15 minutes. If ingestion occurs, DO NOT induce vomiting. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.
HAZARDOUS MATERIALS DESCRIPTION - continued

**WARNING**

[Icon]

SEALING COMPOUND (8040-01-129-7171)

Sealing Compound is a non-flammable substance. Wear gloves and safety glasses. If contact with skin or eyes occurs, wash skin with soap and water, and flush eyes with water for 15 minutes. If ingestion occurs, DO NOT induce vomiting. Seek medical attention in all cases. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

**WARNING**

[Icon]

THINNER

Thinner is flammable and toxic. It can irritate skin and cause burns. Use only with adequate ventilation away from heat or open flame. Avoid contact with skin, eyes, or clothing. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

**WARNING**

[Icon]

TOLUENE, (6810-00-281-2002)

Toluene is a highly flammable liquid. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Remove solvent saturated clothing. Seek medical attention in all cases. If vapors cause drowsiness, go to fresh air. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.
HAZARDOUS MATERIALS DESCRIPTION - continued

**WARNING**

XYLENE

Xylene is a highly flammable liquid. Do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using it. Do not use it where others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Provide mechanical ventilation if used in confined spaces. Contact of liquid with skin may cause dermatitis and irritation. If contact occurs with eyes or skin, immediately flush affected area thoroughly with water. Remove solvent saturated clothing. Seek medical attention in all cases. If vapors cause drowsiness, go to fresh air. Ensure you read and understand the Material Safety Data Sheet (MSDS) for this product prior to use.

END OF WORK PACKAGE
LIST OF EFFECTIVE PAGES / WORK PACKAGES

NOTE: A vertical line in the outer margins of the page indicates the portion of text affected by the changes. Miniature hands indicate changes to illustrations. Changes in wiring diagrams are indicated by shaded areas.

Dates of issue for original pages/work packages are:

Original 0 25 February 2005

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DEPOT MAINTENANCE WORK REQUIREMENT
CONTAINING
NATIONAL MAINTENANCE REPAIR STANDARDS

CH-47D HELICOPTER
NSN 1520-01-088-3669 (EIC: RCD)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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*This publication supercedes DMWR 55-1500-210, 1 February 1976, including all changes.
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Critical Safety Items and Flight Safety Critical Aircraft Parts ............................................................ 0160 00

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Hydraulic Fluid Purification Procedures ............................................................................................ 0162 00
Oils and Lubricants Reference .......................................................................................................... 0163 00
CH-47 Tail Number Cross Reference ................................................................................................ 0164 00
CHAPTER 1

DESCRIPTION AND THEORY OF OPERATION
SCOPE

These instructions are for use by DOD Depot and contractor personnel. This Airframe Depot Maintenance (ADM) process, in conjunction with supporting documentation, has all of the information required to modify, repair, and overhaul the CH-47D, NSN 1520-01-088-3669, Helicopter.

This Depot Maintenance Work Requirement (DMWR) lists the tools and types of materials to be used. It establishes requirements for disassembly, cleaning, inspecting, repair, rehabilitation, modification, re-assembly, servicing, testing, and storage of CH-47D helicopter.

Parts, components, subassemblies or assemblies found worn or defective beyond the repair limits established by this DMWR will be disposed of in accordance with applicable regulations.

The repair or restoration and reconditioning of equipment and components specified herein shall be accomplished in accordance with specific instructions set forth in the DMWR. Tolerance and limits set forth herein are the minimum acceptable standards. The depot/contractor will perform all necessary maintenance and repair required to prepare the aircraft for issue. The extent of maintenance and repair to be applied to such items as engines, dynamics, and condition components will be authorized in the maintenance allocation chart at intermediate level. Waivers may be authorized by Engineering (AMRDEC) or the Contracting Officer to prevent work stoppages or unnecessary costs.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-751, Functional Users Manual for The Army Maintenance Management System – Aviation (TAMMS-A), TB 1-1500-341-01, Aircraft Components Requiring Maintenance Management and Historical Data Reports, AR 700-138, Army Logistics Readiness and Sustainability.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your CH-47D Helicopter needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don’t like about your equipment. Let us know why you don’t like the design or performance. Put it on a SF 368 (Product Quality Deficiency Report). Preparation instructions are contained in DA PAM 738-751, Functional Users Manual for The Army Maintenance Management System – Aviation (TAMMS-A), or as specified by the acquiring activity. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army material is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

If a corrosion problem is identified, it can be reported using SF 368, Product Quality Deficiency Report. Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem.

The form should be submitted to the address specified in DA PAM 738-751, "Functional Users Manual for The Army Maintenance Management System-Aviation (TAMMS-A)".
CORROSION PREVENTION AND CONTROL (CPC) - continued

Aircraft corrosion references include TM 1-1500-344-23, Aircraft Weapons Systems Cleaning and Corrosion Control, and TM 1-1500-343-23, Organization/Unit and Intermediate Maintenance For Avionic Cleaning and Corrosion Prevention / Control.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

For information and procedures pertaining to destruction of Army equipment to prevent enemy use, refer to TM 750-244-1-5, Procedures for the Destruction of Aircraft and Associated Equipment to Prevent Enemy Use.

LIST OF ABBREVIATIONS/ACRONYMS

Many abbreviations and acronyms are used in this manual. They are listed below.

ACE  Airframe Condition Evaluation
AFCS  Advanced Flight Control System
APU  Auxiliary Power Unit
ASAM  Aviation Safety Action Message
BL  Butt line
CPC  Corrosion Preventive and Control
CSI  Critical Safety Item
ECP  Engineering Change Proposal
EIR  Equipment Improvement Recommendation
FSCAP  Flight Safety Critical Aircraft Part
ILCA  Integrated Lower Control Actuators
Kg  Kilogram
KVA  Kilovolt Amperes
MEC  Maintenance Engineering Call
MEL  Maintenance Expenditure Limit
MIM  Maintenance Information Message
MOC  Maintenance Operational Check
MTF  Maintenance Test Flight
MTOE  Modified Table of Organization and Equipment
ODS  Ozone Depleting Substance
PM  Phase Maintenance
PMB  Plastic Media Blasting
PRON  Program Request Order Number
PSA  Pre-Shop Analysis
PTU  Power Transfer Unit
PWD  Project Work Directive
QA  Quality Assurance
sta  Station
TMDE  Test, Measurement and Diagnostic Equipment
WL  Water line
QUALITY ASSURANCE (QA)

The Depot/Contractor is responsible for complying with the quality assurance requirements contained in WP 0155 00 - Quality Assurance Requirement, WP 0160 00 – Critical Safety Items and Flight Safety Critical Aircraft Parts, and ISO 9001 2000 standards or equivalent. For quality assurance definitions and terms refer to ISO 8402 and FM 3-04.500. Any additional quality provisions shall be as specified by the applicable Procurement Request Order Number (PRON) or contract.

QUALITY OF MATERIAL

Parts and material used for replacement, repair, or modification must meet the requirements of this DMWR. If quality of material requirements is not stated in this DMWR, the material must meet the requirements of the equipment drawings, standards, specifications, or approved engineering change proposals applicable to the subject equipment.

SAFETY, CARE, AND HANDLING

Electromagnetic compatibility standards (MIL-STD-461), when applicable, apply to the equipment covered in this DMWR.

ENGINEERING CHANGE PROPOSALS

Engineering Change Proposals (ECPs) will be submitted using DD Form 1693 (Engineering Change Proposal [Short Form]). (Refer to MIL-STD-973, Configuration Management, for instructions.). Completed forms should be mailed directly to: Commander, US Army Aviation and Missile Command, ATTN: AMSAM-RD-SE-TD-CM Redstone Arsenal, AL 35898-5000. A reply will be furnished to you.

DEVIATIONS AND EXCEPTIONS

Requests for deviations or exceptions to this DMWR will be submitted to Engineering (AMRDEC) or the Contracting Officer for approval.

MOBILIZATION REQUIREMENTS

All requirements of this DMWR will be exempted or revised in the event of mobilization. Only those procedures necessary to return the CH-47D helicopter to a serviceable condition will be performed. Requests for exemptions or revisions will be submitted to Engineering (AMRDEC) or the Contracting Officer for approval.

FLIGHT SAFETY CRITICAL AIRCRAFT PARTS (FSCAP)

A flight safety critical aircraft part is defined as any part, assembly, or installation whose failure, malfunction, or absence could cause loss of aircraft, serious damage to aircraft, death of personnel, or serious injury to personnel.

A critical characteristic is defined as a feature throughout the life cycle of a FSCAP, such as dimension, tolerance, finish, material or assembly, manufacturing process, inspection process, operation, field maintenance requirement, depot overhaul requirement, or other feature that if nonconforming, missing, or degraded, could cause failure or malfunction of a FSCAP.

Flight Safety Critical Aircraft Parts Procedures are detailed in WP 0160 00, Critical Safety Items (CSI) and Flight Safety Critical Aircraft Parts.
COST CONSIDERATIONS

This work requirement shall be the basis for establishing the extent of overhaul while taking into consideration cost factors. A determination shall be made on all subassemblies/assemblies to replace worn or damaged components, which are available in supply, if acquisition cost is less than the cost to repair and restore to the DMWR standard. The cost to repair/restore any individual item with an established Maintenance Expenditure Limit (MEL) to the DMWR standard shall not exceed the MEL, unless a waiver has been approved in accordance with AMC-R 750-51. This requirement does not apply to items exempted from MEL in accordance with AMC-R 750-51.

SUPPORTING INFORMATION FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE), CTA 50-970, Expendable/Durable Items (Except: Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items, as applicable to a CH-47D Helicopter Aviation Unit.

Special tools, TMDE, and support equipment are listed in Chapter 4, WP 0158 00, Tool Identification List.

Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 55-1520-240-23P series manuals.

END OF WORK PACKAGE
DESCRIPTION

The CH-47D is a tandem rotor cargo helicopter. Two T55-L-712 or T55-GA-714A engines mounted on the aft cabin fuselage section provide the power. Torque from the engines is transmitted to rotary-wing blades through a series of mechanical transmissions. These transmissions are interconnected by a system of synchronizing drive shafts. Each rotor system consists of a rotary-wing head and three rotary-wing blades. Rotor systems are controllable from the cockpit by both pilot and co-pilot through dual hydraulic-boosted control systems. The helicopter has four landing gear, with dual wheels on each forward landing gear and a single wheel on each aft landing gear. Each aft gear can swivel 360 degrees. Power steering is connected to the right aft gear. A hydraulically operated cargo ramp and door is incorporated in the aft end of the fuselage. A hydraulically operated rescue and cargo-handling winch is located in the forward cabin area. An auxiliary power unit mounted above the cargo ramp area in the aft pylon permits operation of all helicopter systems without the use of a ground power source. Additional descriptive and operational data can be found in Operator's Manual, TM 55-1520-240-10. See Table 1 for tabulated descriptive data and Figure 1 for location and description of major components.

Beginning in the early 1960's, Boeing built approximately 750 CH-47 helicopters for the U.S. Army. Aircraft rolling out of the factory evolved in designation from CH-47A through CH-47B to CH-47C as new features were added and design improved. Between 1982 and the mid 90's, Boeing inducted 472 CH-47A, B, and C model aircraft from the U.S. Army, modified them to the CH-47D configuration, and returned them to the Army. Now the Army plans to upgrade the fleet thru overhaul of “D” to “D” or “D” to “F” models. These machines will be the U.S. Army’s heavy-lift helicopter through the first half of the 21st century. “F” model improvements include low maintenance rotor hub, improved airframe structure, digital cockpit, improved avionics, improved internal fuel tanks, and installation of the Honeywell T55-GA-714A engines.

ELECTROMAGNETIC ENVIRONMENT PROTECTION

Electrical wiring and components susceptible to electromagnetic radiation are hardened for electromagnetic environment (EME) protection to eliminate abnormal responses to external electromagnetic radiation. Electrical wiring for selected systems and components are equipped with pin filtered adapters or filtered plugs. Components susceptible to electromagnetic radiation are internally or externally modified with filters and gaskets. Mounting surfaces for EME components are metal with a chemical conversion coating or use bonding straps to provide low resistance to airframe ground.

EQUIPMENT DATA

<table>
<thead>
<tr>
<th>Table 1. Tabulated Descriptive Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Manufacturer</td>
</tr>
<tr>
<td>Rotor System:</td>
</tr>
<tr>
<td>Type</td>
</tr>
<tr>
<td>No. Rotors</td>
</tr>
<tr>
<td>Blade Composition</td>
</tr>
<tr>
<td>Drive Source</td>
</tr>
</tbody>
</table>

| Rotor Drive System: | |
| No. Engines | Two |
| No. Transmissions | Five: Fwd, Aft, Combining and 2 Engines Transmissions |
| Rotor/Engine RPM Ratio | 1:64 |
### Table 1. Tabulated Descriptive Data - continued

#### Fuselage:
- **Type**: Semi-Monocoque
- **Composition**: Mainly Metal

#### Landing Gear:
- **Type**: Non-Retractable/Quadricycle
- **Wheels**: Twin/FWD Position, Single/Rear Position
- **Shock Absorbers**: Oleo Pneumatic
- **Rear Units**: Fully Castering and Steerable
- **Power Steering**: At R/H Rear Unit
- **Wheel Size**: 24 in. Diameter, 7.7 in. Wide
- **Tire Size**: 8.50-10
- **Brakes**: Hydraulic, Two Single Disc - AFT, Two Double Disc - FWD

#### Propulsion:
- **Type**: Turboshaft Engines
- **No Engines**: Two
- **Engine Manufacturer**: AVCO Lycoming/Honeywell
- **Engine Model**: T55-L-712 or T55-GA-714A
- **Locations**: Beside Rear Pylon
- **Std. Power Rating**: 3,750 SHP (T55-L-712), 5,625 SHP (T55-GA-714A)
- **Emergency Rating**: 4,500 SHP (T55-L-712), Not Available (T55-GA-714A)
- **Oil Capacity**: 12 qts (14 liters)

#### Fuel System:
- **Type**: Cells, Self-Sealing, Pressure Refueled, Crashworthy
- **Cell Nomenclature**: Fwd Aux, Main, Aft Aux
- **Total Fuel Capacity**: 1,030 U.S. Gals, (3,899 Liters)

#### Accommodations:
- **Crew Number**: Two Pilots/1 Crew Engineer
- **Crew Controls**: Two
- **Troop Seating/Main Cabin**: 33-34
- **Rear Loading Ramp**: Controllable/Removable
- **R/H Main Cabin Door**: Upper half-retractable section can be opened in flight; Lower half hinged.

#### Cargo Hook: Triple External

#### Alternating Current (AC) System:
- **No. 1 & No. 2 AC Generators**: Alternators, 115/200-Volt
- **AC Three Phase**: 40 KVA, Aft Transmission Driven
Table 1. Tabulated Descriptive Data - continued

<table>
<thead>
<tr>
<th>Auxiliary Power Unit (APU)</th>
<th>Gas Turbine, Auxiliary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td></td>
</tr>
<tr>
<td>No. Units</td>
<td>One</td>
</tr>
<tr>
<td>Model</td>
<td>T62-T-2B</td>
</tr>
<tr>
<td>Location</td>
<td>Aft cabin above ramp</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>3 qts</td>
</tr>
<tr>
<td>Function</td>
<td>Pressurizes utility hydraulic system for main engine start and ground checks APU Generator</td>
</tr>
</tbody>
</table>

| APU Generator             | Alternator, 115/200-Volt Three Phase, 40 KVA, APU Driven |

| AC External Power Receptacle | Accepts External AC Power |

<table>
<thead>
<tr>
<th>Direct Current (DC) System:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery</td>
<td>24 Volt</td>
</tr>
<tr>
<td>No. 1 &amp; No. 2 DC Sources</td>
<td>28 Volt, 200 Amp</td>
</tr>
<tr>
<td></td>
<td>(Transformer Rectified from No. 1 &amp; No. 2 AC Generator Outputs)</td>
</tr>
<tr>
<td>DC External Power Receptacle</td>
<td>Accepts External DC Power</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External Dimensions:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter (Each Rotor)</td>
<td>60 ft 0 in (18.29m)</td>
</tr>
<tr>
<td>Rotor Blade Cord</td>
<td>2 ft 8 in (0.81m)</td>
</tr>
<tr>
<td>Distance Between Rotor Centers</td>
<td>38 ft 10 in (11.94m)</td>
</tr>
<tr>
<td>Length Overall (Rotors Turning)</td>
<td>98 ft 10 in (30.18m)</td>
</tr>
<tr>
<td>Fuselage Length</td>
<td>50 ft 9 in (15.54m)</td>
</tr>
<tr>
<td>Width (Rotors Folded)</td>
<td>12 ft 5 in (3.78m)</td>
</tr>
<tr>
<td>Height to top of rear Rotor Head</td>
<td>18 ft 7.8 in (5.68m)</td>
</tr>
<tr>
<td>Wheel Track (C/L of Shock Absorbers)</td>
<td>10 ft 6 in (3.20m)</td>
</tr>
<tr>
<td>Wheel Base</td>
<td>22 ft 6 in (6.86m)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rear Loading Ramp Entrance:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>6 ft 6 in (1.98m)</td>
</tr>
<tr>
<td>Width</td>
<td>7 ft 7 in (2.31m)</td>
</tr>
<tr>
<td>Height to Sill</td>
<td>2 ft 7 in (0.79m)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cabin Internal Dimensions:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (Excl. Flight Deck)</td>
<td>30 ft 2 in (9.20m)</td>
</tr>
<tr>
<td>Width (Mean)</td>
<td>7 ft 6 in (2.29m)</td>
</tr>
<tr>
<td>Width at Floor</td>
<td>8 ft 3 in (2.51m)</td>
</tr>
<tr>
<td>Height</td>
<td>6 ft 6 in (1.98m)</td>
</tr>
<tr>
<td>Floor Area</td>
<td>226 ft² (21.0m²)</td>
</tr>
<tr>
<td>Usable Volume</td>
<td>1,474 ft³ (41.7m³)</td>
</tr>
</tbody>
</table>
### Table 1. Tabulated Descriptive Data - continued

**Aircraft Weights**
- Maximum T-O Weight: 50,000 lbs (22,680kg)
- Weight Empty: 23,093 lbs (10,184kg)
- Design Gross Weight: 33,000 lbs (14,968kg)

**Flight Control Hydraulic System:**
- Operating Pressure: 3,000 PSI
- No. Pumps: Two
- Pump Type: Variable Delivery
- No. Systems: Dual
- No. 1 Pump Drive Source: Fwd Transmission
- No. 2 Pump Drive Source: Aft Transmission

**Utility Hydraulic System**
- Operating Pressure: 3,350 PSI APU Motor Pump/3,000 PSI Utility Pump
- No. Pumps: Two
- Pump Type: Variable Delivery
- Utility Pump Drive Source: APU/Aft Transmission

**Heating System**
- 200,000 BTU Heater/Blower
1. Fwd Rotary-Wing Head Transmits power and flight control input to forward blades
2. Fwd Rotary-Wing Blades Provide lift to helicopter
3. Fwd Transmission Transmits power to forward rotor head
4. Engine Transmission Directs power from engine to combining transmission
5. No. 2 Power Plant Provides power to the helicopter
6. Aft Rotary Blades Provide lift to the helicopter
7. Aft Rotary Wing Head Transmits power and flight control input to the aft blades
8. No. 1 Power Plant Provides power to the helicopter
9. Aft Drive Shaft Transmits power from combining transmission to aft transmission
10. Pylon Encloses aft drive system components
11. Aft Landing Gear Supports and allows ground movement of helicopter
12. Aft Fuel Tank Holds fuel, transfers fuel to main tank
13. Main Fuel Tank Holds fuel for power plants and APU (LH) and Heater (RH)
14. Forward Fuel Tank Holds fuel, transfers fuel to main tank
15. Forward Landing Gear Supports and allows ground movement of helicopter

Figure 1. CH-47D Helicopter Components (Sheet 1 of 2)
16. Forward Drive Shafting Transmits power from combining xmsn to forward transmission
17. Combining Transmission Combines power from the two engines
18. Engine Shaft Transmits power from engine transmission to combining transmission
19. Aft Rotor Shaft Transmits power to aft rotary wing head
20. Auxiliary Power Unit Provides power for ground operation and powerplant starting
21. Aft Transmission Transmits power to the aft rotor shaft

Figure 1. CH-47D Helicopter Components – (Sheet 2 of 2)

REFERENCE LINES

Stations, waterlines, and butt lines provide an accurate method of locating parts and/or equipment in the airframe. (Refer to Figure 2.)

STATIONS

Stations (sta) are vertical reference lines indicating the distance in inches from a reference line forward of the nose section, which is sta 0.

WATERLINES

Waterlines (WL) are horizontal reference lines indicating the distance in inches from a reference line on the helicopter, which is waterline 0.

BUTT LINES

Butt lines (BL) are vertical reference lines indicating the distance in inches on the left and right side from the helicopter center line which is butt line 0.
PYLON STATIONS

Pylon stations are lines perpendicular to the centerline of the pylon indicating the distance in inches from the forward-most point of the pylon, which is pylon station 0.

NOTE

All dimensions are in inches.

Figure 2. CH-47 Helicopter Reference Lines
DATA PLATES

Helicopter Nameplate

Refer to Figure 3. This plate is located on the forward left side of the nose section by the co-pilot’s pedal controls. It is inscribed with the manufacturer’s name, model number, aircraft serial number, manufacturer’s serial number, date of manufacture, and contract number.

![Figure 3. Helicopter Nameplate](image-url)
AFT Pylon Identification Plate

Refer to Figure 4. This plate shows the aircraft model number, manufacturer's code, part number, contract number and aircraft serial number.

Figure 4. AFT Pylon Identification Plate
Overhaul Data Plate

Refer to Figure 5. This plate is positioned next to the helicopter nameplate. It is installed at the first overhaul and replaced at subsequent overhauls. The data plate includes part number, total operating hours since new, the initials of facility doing the overhaul, date of overhaul, and the contract number. For recapitalization aircraft, stamp “RECAP” and date with two digits for month and two digits for year.

Figure 5. Overhaul Data Plate

Replacement of Data Plate

The data plate is made of adhesive-backed aluminum foil (Item 105, WP 0157 00). The data is stamped using 1/8-inch high letters and numbers (8 pt type). Stamp the required information on the data plate before installation.

END OF WORK PACKAGE
CHAPTER 2

TROUBLESHOOTING PROCEDURES
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
PRE-SHOP ANALYSIS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
AR 700-138
AR 750-1
DA Pam 738-751
TB 1-1500 341-01
TB 43-0002-3
TM 1-1500-204-23 Series
TM 1-1500-328-23
TM 1-1500-335-23
TM 11-1520-240-23
TM 55-1500-323-24
TM 55-1520-240-PM
TM 55-1520-240-23 Series
WP 0076 00
WP 0147 00
WP 0151 00
WP 0155 00
Boeing Repair Manual, D8-0043, SR-114-8

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package discusses the Pre-Shop Analysis (PSA) phase of overhaul to include actions upon receipt of the aircraft by the overhaul facility, inspection work sheets, records checks, disassembly, cleaning, paint stripping, inspection items, damage limits, and recording of discrepancies found during inspection. Questions concerning scope of inspection should be addressed to the Contracting Officer.

PRE-SHOP ANALYSIS

Pre-Shop Analysis (PSA) is a thorough physical examination and evaluation of the aircraft and related components using visual and diagnostic test techniques. PSA shall determine the specific depth and extent of work to be performed and shall correctly annotate all aircraft, engine, and component records in accordance with DA PAM 738-751. After completion of PSA, a "cost and man-hour estimate" shall be developed and provided to the Contracting Officer. If the repair costs exceed the limitations provided in Chapter 3 of TB 43-0002-3, or the contract, annotate the "cost and man-hour estimate" with the maximum expenditure limits.

The following PSA instructions are provided to ensure a complete examination of the incoming aircraft. The information from this examination should be used by the overhaul facility in preparing estimates that will determine the extent of repair, modification, and replacement, needed to perform overhaul of the aircraft and make it a completely serviceable unit. Quality standards contained in the Depot Maintenance Work Requirement (DMWR) shall be strictly applied. Refer to WP 0155 00. Detailed cleaning and corrosion treatment methods have been included where applicable. Items pending performance of maintenance shall be preserved to prevent damage or deterioration due to corrosion or decay.
PRE-PSA ACTIONS

Helicopter Receipt

The aircraft, as specified in each Program Request Order Number (PRON) and Project Work Directive (PWD), will be delivered to the Depot/Contractor facility per instructions issued to the delivering crew by AMCOM CH-47 Program Management Office. Depot/Contractor personnel, along with members of the Aircraft-Owning Unit, shall perform Maintenance Operational Checks (MOC) and Maintenance Test Flights (MTFs).

Forms and Records

Depot/Contractor personnel will review all DA Form 2408 Aircraft Historical Records for completeness. If records are incomplete or missing, every effort shall be made to obtain required information from the shipping activity. The overhaul facility will certify the Aircraft and Avionics Inventory and submit front and backside copies of the DA Forms 2408-17, Aircraft Inventory Record, to the Contracting Officer for forwarding to AMCOM IMMC Cargo Directorate (AMSAM-MMC-AV-CA) and CH-47 PMO (SFAE-AV-CH-L). Equipment not installed per the Aircraft Receipt Inspection and Inventory (ARII) list, Aircraft Master Inventory Guide, and Avionics Configuration requires authorization documentation and shall be annotated correctly in the aircraft logbook. Modified Table of Organizational Equipment (MTOE)/property is the responsibility of the Owning Unit and shall not remain with the aircraft. For items not covered by DA Forms 2408-17, a list shall be prepared to include Description (Nomenclature), NSN, P/N, Serial Numbers if applicable, and Remarks. Forward list to the Contracting Officer, for further forwarding to AMCOM IMMC Cargo Directorate (AMSAM-MMC-AV-CA) and CH-47 PMO (SFAE-AV-CH-L). The overhaul facility will not accept the aircraft for induction until the Joint Acceptance Inspection criteria has been met, and the delivery crew has signed for or satisfied all noted/identified aircraft logbook discrepancies. The overhaul facility will notify the Contracting Officer for further forwarding to AMCOM IMMC Cargo Directorate (AMSAM-MMC-AV-CA) and CH-47 PMO (SFAE-AV-CH-L), when the owning unit has not met this DMWR requirement.

Initial review of aircraft records will determine the following minimums:

1. Modification Requirements - A physical inspection of the aircraft, in conjunction with a check of DA Forms 2408-5 and 2408-15, and review of the Modification Work Orders (MWOs) and Technical Bulletins (TBs) shall be accomplished to determine outstanding MWOs and TBs. Designated MWO’s will be accomplished as specified in the statement of work or as directed by the Contracting Officer. MWO Kits, if available, shall be applied to all aircraft. For MWO compliance, kits shall be available prior to aircraft induction. If MWO Kits are not available, the Contracting Officer shall be contacted prior to aircraft induction.

2. CH-47 PMO Approved Engineering Change Proposals ECP(s) – ECP(s) shall be applied to all aircraft if the ECP Kits(s) and funding are available at time of induction. ECP noncompliance must receive a formal waiver from the CH-47 PMO, through the Contracting Officer.

3. Safety of Flight Messages - The overhaul facility shall ensure compliance regarding all applicable Safety of Flight (SOF) messages, Maintenance Information Messages (MIM), and Aviation Safety Action Messages (ASAM).

4. Army Aircraft Inventory, Status, and Flying Time Report (DA Form 1352) - Aircraft inducted for overhaul will be placed into the AMCOM account (B17). The overhaul facility shall prepare and submit DA Form 1352 IAW AR 700-138, for all aircraft.

5. Status of Time Change Items - A physical inspection of the aircraft will be made in conjunction with a check of DA Form 2408-16, time replacement items and DA Form 2408-18, calendar replacement items. Refer to TM 55-1520-240-23 and WP 0151 00 for current listing. Criteria for reuse of helicopter components shall be those listed in TM 1-1500-328-23 and AR 750-1, ensuring that the aircraft meets requirements for transfer from CONUS theater of operations to overseas theater of operations, unless otherwise directed by the Contracting Officer. DA Form 2410’s shall be initiated for each time change item due replacement in accordance with DA PAM 738-751.
6. Mission Essential Equipment - Mission essential equipment configuration will be determined based on the ultimate destination of the aircraft. This information can be obtained from the CH-47 PMO and/or Contracting Officer. All required mission essential equipment will be installed and functionally tested prior to release of the aircraft to the gaining unit.

7. Airframe Condition Evaluation
   a. The current Airframe Condition Evaluation (ACE) report shall be reviewed to ensure all noted discrepancies become a part of the work package and are included in the cost and man-hour estimate. The ACE report for a specific aircraft serial number can be obtained by e-mailing your request to the AMRDEC Aviation Engineering Division (AED), AMSAM-MMC-AV-CC, Corpus Christi, Texas, (acereport@amcom-cc.army.mil). If you experience any problems, call (361) 961-2000.
   b. An Airframe Condition Evaluation (ACE) will be completed by certified evaluators prior to issuing aircraft to operational units.

PARTS REMOVAL AND DISASSEMBLY REQUIREMENTS

TM 55-1520-240-23 series manuals shall be used for removal and reinstallation of components, parts, and subassemblies. Unless required as a maintenance expedient, parts removal and disassembly is limited to that specified by the PSA and the Work Packages of this DMWR.

PRE-PSA CLEANING REQUIREMENTS

Cleaning

1. Prior to cleaning with liquid detergents, vacuum the interior of the aircraft structure and cabin area, and remove as much loose debris as practicable. Visually inspect honeycomb panels for punctures that would expose the core to moisture. If punctures are detected, seal the holes.

2. After preparation and identification of stripping requirements, aircraft will be cleaned and stripped in accordance with procedures specified in WP 0076 00. Aircraft will then be returned to PSA for further evaluation.

Paint Stripping

The overhaul facility shall insure that only necessary and economical paint stripping is performed on all aircraft.

NOTE

Remove all overhaul, retirement, and life-limited components prior to cleaning and stripping. All time change finite life and condition items that require removal shall be removed prior to cleaning and stripping.

1. Prior to cleaning and stripping, PSA personnel shall conduct an examination of the exterior paint and identify those areas that require selective stripping. Selective stripping shall be employed if less than 35 percent of fuselage painted areas requires removal. If paint stripping is required in excess of these percentages, the entire fuselage shall be stripped. All nonstandard paint, aircraft tail numbers, and organizational insignia shall be removed. Refer to WP 0076 00.

2. Epoxy primer shall be stripped only in areas of deterioration and as specified for visual inspection.

NOTE

PSA may identify additional areas to be stripped for further visual interpretation. This is in addition to mandatory paint stripping requirements.

0003 00-3
Paint Stripping - continued

3. Nondestructive Inspection requirements are detailed in WP 0147 00. The Contracting Officer may require additional NDI areas. Consult with the Contracting Officer and determine exact NDI to be performed. Some NDI requirements require paint stripping which should be performed during the paint stripping operation. Refer to WP 0076 00 for hand stripping procedures.

PSA PROCEDURES

PSA Items List - Refer to Table 1, for PSA Work Package List of areas to be inspected.

Table 1. Pre-Shop Analysis Work Package List

<table>
<thead>
<tr>
<th>WORK PACKAGES</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP 0003 00</td>
<td>Pre-Shop Analysis</td>
</tr>
<tr>
<td>WP 0004 00</td>
<td>Nose Exterior</td>
</tr>
<tr>
<td>WP 0005 00</td>
<td>Cockpit Enclosure</td>
</tr>
<tr>
<td>WP 0006 00</td>
<td>Nose Structure</td>
</tr>
<tr>
<td>WP 0007 00</td>
<td>Lower Console Structure</td>
</tr>
<tr>
<td>WP 0008 00</td>
<td>Nose Tub Assembly</td>
</tr>
<tr>
<td>WP 0009 00</td>
<td>Cockpit Floor Structure</td>
</tr>
<tr>
<td>WP 0010 00</td>
<td>Nose Frames</td>
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<tr>
<td>WP 0011 00</td>
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</tr>
<tr>
<td>WP 0012 00</td>
<td>Forward Hydraulic Support</td>
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<tr>
<td>WP 0013 00</td>
<td>Auxiliary Drip Pan and Forward Transmission Drip Pan</td>
</tr>
<tr>
<td>WP 0014 00</td>
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<td>WP 0015 00</td>
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<td>WP 0016 00</td>
<td>Cabin Exterior</td>
</tr>
<tr>
<td>WP 0017 00</td>
<td>Forward Pod Installation, Sta 160 to Sta 187</td>
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<tr>
<td>WP 0018 00</td>
<td>Fuel Pod and Access Panels</td>
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<tr>
<td>WP 0019 00</td>
<td>Cabin Crown Tunnel</td>
</tr>
<tr>
<td>WP 0020 00</td>
<td>Cabin Interior</td>
</tr>
<tr>
<td>WP 0021 00</td>
<td>Cabin Tub Exterior Skin and Stringers</td>
</tr>
<tr>
<td>WP 0022 00</td>
<td>Cabin Tub Formers and Beams</td>
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<tr>
<td>WP 0023 00</td>
<td>Cabin Flooring</td>
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<td>WP 0024 00</td>
<td>Cabin Troop Seats</td>
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<td>WP 0025 00</td>
<td>Cockpit and Cabin Acoustic Blankets</td>
</tr>
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<td>WP 0026 00</td>
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<td>WP 0027 00</td>
<td>Aft Section Frames, Stringers, and Beams</td>
</tr>
<tr>
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<td>Aft Section Tub Assembly</td>
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<tr>
<td>WP 0029 00</td>
<td>Tail Cone Assembly</td>
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<tr>
<td>WP 0030 00</td>
<td>Cargo Door Coaming</td>
</tr>
<tr>
<td>WP 0031 00</td>
<td>Aft Transmission Drip Pan</td>
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</table>
### Table 1. Pre-Shop Analysis Work Package List - continued

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<thead>
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<th>WORK PACKAGES</th>
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<tr>
<td>WP 0032 00</td>
<td>APU Drip Pan Assembly</td>
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<td>WP 0033 00</td>
<td>Cargo Ramp Exterior</td>
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<td>WP 0034 00</td>
<td>Cargo Ramp Interior</td>
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<td>WP 0035 00</td>
<td>Cargo Ramp Flooring and Auxiliary Loading Ramps</td>
</tr>
<tr>
<td>WP 0036 00</td>
<td>Cargo Ramp Door Bonded Assembly</td>
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<td>WP 0037 00</td>
<td>Aft Pylon Exterior</td>
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<td>WP 0038 00</td>
<td>Aft Pylon Interior</td>
</tr>
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<td>WP 0039 00</td>
<td>Forward and Aft Landing Gear</td>
</tr>
<tr>
<td>WP 0040 00</td>
<td>Powerplant</td>
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<tr>
<td>WP 0041 00</td>
<td>Rotary-Wing Blades</td>
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<td>WP 0042 00</td>
<td>Forward and Aft Rotor-Wing Heads</td>
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<td>WP 0043 00</td>
<td>Drive System</td>
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<tr>
<td>WP 0044 00</td>
<td>Flight Control Hydraulic System</td>
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<td>WP 0045 00</td>
<td>Utility Hydraulic System</td>
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<td>WP 0047 00</td>
<td>Cargo Hook Hydraulic Release System</td>
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<td>WP 0048 00</td>
<td>Wheel Brake Hydraulic System</td>
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<td>WP 0049 00</td>
<td>Instruments</td>
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<td>WP 0050 00</td>
<td>Electrical Systems</td>
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<td>WP 0051 00</td>
<td>Fuel System</td>
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<tr>
<td>WP 0052 00</td>
<td>Cockpit Flight Controls</td>
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<td>WP 0053 00</td>
<td>Closet Flight Controls</td>
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<td>WP 0054 00</td>
<td>Mixing Flight Controls</td>
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<td>WP 0055 00</td>
<td>Forward Upper Flight Controls</td>
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<tr>
<td>WP 0056 00</td>
<td>Tunnel Flight Controls</td>
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<tr>
<td>WP 0057 00</td>
<td>Aft Fuselage and Aft Upper Flight Controls</td>
</tr>
<tr>
<td>WP 0058 00</td>
<td>Advanced Flight Control System</td>
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<tr>
<td>WP 0059 00</td>
<td>Windshield System</td>
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<tr>
<td>WP 0060 00</td>
<td>Fire Detection System</td>
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<tr>
<td>WP 0061 00</td>
<td>Fire Extinguishing System</td>
</tr>
<tr>
<td>WP 0062 00</td>
<td>Environmental Controls</td>
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<tr>
<td>WP 0063 00</td>
<td>Cargo Handling/Rescue Winch System</td>
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<tr>
<td>WP 0064 00</td>
<td>Auxiliary Power Unit (APU)</td>
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<td>WP 0065 00</td>
<td>External Cargo Hook System</td>
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<td>Emergency Equipment</td>
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<td>WP 0067 00</td>
<td>Intercommunications System</td>
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<td>WP 0068 00</td>
<td>Communications Systems</td>
</tr>
<tr>
<td>WP 0069 00</td>
<td>Navigation Systems</td>
</tr>
<tr>
<td>WP 0070 00</td>
<td>Aircraft Survivability</td>
</tr>
<tr>
<td>WP 0071 00</td>
<td>Aircraft Antennas</td>
</tr>
</tbody>
</table>
PSA INSPECTION

1. PSA is broken into various groups for clarity of presentation, and in no way should indicate the sequence of operations. Local formats may be adopted to fit physical plant layout. However, all PSA information including discrepancies noted and disposition made, will be available for each aircraft processed by the overhaul facility for a period of two years or as directed by the Contracting Officer. This information will provide objective evidence of PSA evaluation, findings, and corrective action taken, and will be immediately available to the Contracting Officer upon request.

2. The PSA Work Packages in this chapter show typical and specific areas to be inspected. Each area is identified with a number or letter callout on the associated figure. The limits specified are the reparable or acceptable limits. Unless otherwise stated, the item is to be replaced when the repair limits are exceeded. When inspection limits apply to general or multiple use items, i.e., hoses, tubes, shims, etc, the information is presented as a table. Reparable items on illustrations or listed in tables will reference the repair instructions contained in Chapter 3.

3. The pre-shop analysis (PSA) pertains to all helicopters inducted for overhaul under this DMWR.

PSA TEAM

The recommended working team required to perform the PSA is a quality inspector and a recorder. The inspector shall physically perform the analysis, determine the extent of the damage, and record the data. During various phases of the inspection, additional inspectors and recorders may be required.

[CAUTION]

Extreme care should be exercised while performing PSA to insure additional damage does not occur to aircraft. Observe safety precautions for work platforms and personal restraints while working atop the airframe.

NOTE

When this DMWR is used by a commercial contractor, government inspectors may participate in the performance of the PSA.

PSA WORKSHEET

The PSA Worksheet is a Depot/Contractor produced document used to record inspection results. Information and data collected will be used for determining the extent of repair, modification, or replacement, necessary to make the aircraft completely serviceable. Information and data collected will also be used for preparation of man-hour and cost estimates and for determining parts requirements. Table 1, PSA Work Package List, depicts the mandatory items to be inspected and is the basis for developing the Depot/Contractor specific PSA Worksheet.

GENERAL INSTRUCTIONS FOR DEVELOPING A PSA WORKSHEET

The PSA Worksheet shall list those items to be inspected, reference the appropriate figures, define the inspection criteria, and provide a space for recording appropriate inspection and disposition information. It is expected that the overhaul facility will develop the necessary process details required to conduct a PSA at their facilities. The use of locally designed and reproduced worksheets to facilitate recording of information is authorized, and is subject to approval by the Contracting Officer. As a minimum, the following information will be included in the design of a worksheet:

1 – Mission/Design/Series

Record CH-47D
GENERAL INSTRUCTIONS FOR DEVELOPING A PSA WORKSHEET - continued

2 – Nomenclature and Part Number
Record nomenclature and part number of specific component/part undergoing inspection. Obtain from the aircraft records, data plate and physically verify from part/component.

3 – Serial Number
Record serial number of both aircraft and component/part undergoing inspection. Obtain from the aircraft records, data plate and physically verify from part/component.

4 – Date
Annotate date specific work sheet initiated as day/month/year.

5 – Overall Condition
Define the aircraft condition as good, fair, poor. Take into account interior paint condition, condition of weather stripping, discoloration, and/or scratching of the plexiglass, condition of floor panels, effectiveness of door and cowling latches, and other similar indicators that exhibit the signs of wear and tear. It is advisable for inspection personnel to document aircraft conditions with still and/or video digital photography.

6 – Paint Condition
Visually examine the exterior paint of the aircraft. Look for areas not covered with paint, areas of non-adherence of paint, and evidence of weathering, burned, chipped, cracked, oxidized, and peeling of painted surfaces to the extent that complete stripping and repainting is necessary. Strip and repaint if a total of defects exceeds 35 percent or more of the aircraft. Contact Contracting Officer for directions if strip/repaint is in question.

7 - Maintenance Test Flight and Oil Analysis
Documentation of the maintenance test flight, if conducted, and oil analysis will become part of the PSA evaluation.

8 – Aircraft Records
1. Review all DA Form 2408 Aircraft Historical Records for completeness. If records are incomplete or missing, every effort shall be made to obtain required information from the shipping activity. Request instructions from the Contracting Officer in the event this information cannot be obtained.

2. A review will be made of all incoming aircraft records to determine, as a minimum, the following:
   a. Modification requirements
   b. Status of overhaul, retirement, and life limited components
   c. Aircraft Inventory
   d. Mission essential equipment

9 - Condition Items, Retirement Items, and Aircraft Inventory
A physical inspection of the aircraft will be made in conjunction with a check of DA Form 2408-16 and DA Form 2408-18 of all Time Condition Components listed in TM 55-1520-240-23. Criteria for reuse of aircraft components shall be those listed in TM 55-1500-328-23, AR 750-1, and specific performance criteria identified and/or referenced in this DMWR. Compliance with this requirement is mandatory to permit transfer from CONUS theater of operations to overseas theater of operations, unless otherwise specified by the Contracting Officer. DA Form 2410 shall be initiated, in accordance with DA PAM 738-751 and TB 1-1500-341-01, for each condition or retirement item due replacement.
USE OF VISUAL DATA

To aid in performance of the PSA, Figure 1,. Airframe Station Numbers, and Figure 2,. Airframe Butt Lines, Water Lines and Stations, are provided as a structural locator. The inspection work packages are fully illustrated and contain the following information:

Figure 1. Airframe Station Numbers
USE OF VISUAL DATA – continued

Figure 2. Airframe Butt Lines, Water Lines and Stations

Inspection Work Package Number
This number corresponds with the item and Work Package Number in Table 1, Pre-Shop Analysis (PSA) Work Package List.

Inspection Item
This includes the most commonly found defects for that particular part (e.g., cracks, dents, nicks, etc).

Limits
Limits provide the information to make the decision whether to repair or replace.

Repair
A quick reference to the applicable Repair Work Package(s) in Chapter 3 is listed with the Inspection Work Package.

ACCOMPLISHMENT OF PHASE MAINTENANCE SERVICES

ACCOMPLISHMENT OF PHASE MAINTENANCE SERVICES - continued
Overhaul shall include a complete Phase Maintenance (PM), 1 thru 4, IAW TM 55-1520-240-PM, plus all other required special inspections. An entry shall be made on the aircraft logbook DA Form 2408-13-1 indicating the inspection is complete. A completed PM Checklist shall accompany the aircraft records upon delivery to the gaining unit. An entry shall be made on the aircraft Historical Records, DA Form 2408-15, indicating the completion of the PM and the next PM due is PM #1. The overhaul facility may sign off PM Checklist Inspection Requirements “Action Taken” block by entering “Inspection OK” or by referencing the appropriate Shop Traveler. In referencing the Shop Traveler, it is incumbent upon the Overhaul Facility to ensure the action taken complies fully with the inspection requirement. Either procedure requires the initials, stamp, and date of the person completing the “Action Taken” block.

REMOVAL OF EQUIPMENT

The following items must be removed to perform specific PSA actions. When removed, they must be evaluated, and, if serviceable, retained for reinstallation. Request disposition of unserviceable components from the Contracting Officer.

1. Rotor blades and shock absorbers
2. Safety belts and shoulder harnesses
3. Troop commanders seat
4. Pilot and co-pilot seats
5. Troop seats
6. All acoustic blankets
7. Buffer Boards
8. Cabin and cockpit flooring
9. Tie down rails
10. Ramp hinge fitting cover
11. Cargo loading ramp door and flooring
12. Lower cockpit windows
13. Dynamic vibration absorbers
14. Fairings, inspection plates, and tunnel covers
15. Synchronizing and engine drive shafts
16. Hydraulic oil coolers
17. Landing gear stress plates
18. Pilots and co-pilot’s jettisonable doors
19. Fuel pods and fuel cells
20. Engines
21. Engine transmissions
22. Combining transmission
23. Forward transmission
24. Cargo hooks and carriage
25. APU
26. All bellcranks and connecting links.
27. Bell crank supports, forward and aft sides of sta 482, and left side at BL 20
28. Forward and aft rotor heads
29. Forward and aft swashplates
30. Aft vertical shaft
31. Aft transmission
32. Battery
33. All electronic equipment from radio racks and pedestal

REMOVAL OF EQUIPMENT - continued
34. Fire extinguisher bottles and squibs
35. Remove the following antennas, prior to cleaning:
   - GPS Antenna
   - Glideslope Antenna
   - VOR/LOC Antenna
   - Doppler Antenna
   - Sense Antenna
   - Loop Antenna
   - Radar Altimeter Antennas
   - FM Homing Antenna
   - Marker Beacon Antenna
   - VHF AM/FM Antenna (Top)
   - HF ARC-199/220 Antenna
   - IFF Antenna (nose)
   - IFF Antenna (ramp)
   - VHF AM/FM Antenna (Bottom)
   - Radar Detection Antennas (FWD)
   - Radar Detection Antennas (AFT)
   - Countermeasures Antennas

**STRUCTURAL DESCRIPTION**

Prior to performing the PSA, evaluation personnel shall become familiar with the structural configuration of the aircraft per TM 55-1520-240-23 series manuals.

**ATTACHING HARDWARE**

Inspect all rivets and fasteners for proper installation and security. All unserviceable rivets and fasteners shall be identified and replaced. All clamps securing tubing and wiring bundles shall be removed for inspection purposes and replaced as required.

**STRUCTURAL ALIGNMENT**

All aircraft, as a minimum, will receive an alignment IAW WP 0148 00 using alignment fixture, PN 114G1160-2, during aircraft reassembly. If aircraft records indicate an out of alignment condition, a partial alignment check shall be performed by the Depot/Contractor before the PSA to assist in developing the scope of repair work.

Crash damaged aircraft, aircraft that have experienced a hard landing, or aircraft undergoing extensive airframe repair may require placement in an appropriate airframe structural repair fixture to assist in repair. The fixture consists of the following components:

1. Aft Pylon Fixture Drawing Number LJ114S0400-1
2. Cockpit Section Fixture Drawing Number MIT144S0100-1
3. Aft Fuselage Fixture Drawing Number 2MIT114S0300-1
4. Center Cabin Fixture Drawing Number MIT114S0200-1
GENERAL DAMAGE LIMITS FOR AIRFRAME STRUCTURAL REPAIRS

Damage Classification Definitions

Structural damage is classified as minor or major.

1. Minor damage is that which can be repaired by burnishing or in some cases does not require repair.
2. Major damage is that which is serious enough that a patch, insertion, or part replacement is required.

Repair Limits

1. Minor dents in plain and formed sheet metal must be smooth and free from cracks. Smooth dents in aluminum alloy skins (0.020, 0.025, 0.032 thick) shall not exceed 2.00-inch diameter. Dent should be closely examined using a five power (5x) minimum magnifying device to insure no cracks. The total number of dents allowed must not exceed one (1) per square foot of skin panel and the minimum spacing (edge of dent to edge of dent) must be at least equal to the diameter of the larger dent. Example: A skin panel measuring 40-inch x 70-inch equals 19.44 square feet or a maximum allowable 19 minor dents. Refer to Table 1 for maximum allowable dent criteria.

Table 1. Allowable Minor Dent Criteria

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<thead>
<tr>
<th>DENT DIAMETER</th>
<th>SKIN THICKNESS – Note D</th>
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<tr>
<td></td>
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<td>0.177</td>
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</tbody>
</table>

NOTES

A. Measure the dent diameter and depth and determine the thickness of the dented skin.
B. For irregularly shaped dents, use the average of the long and short dimensions as the diameter of the dent.
C. Use the diameter that is closest to, but not greater than, the measured diameter and determine the maximum dent depth for the skin thickness.
D. Minor dents in skins 0.040 thick require engineering evaluation for acceptability.

2. All dents exceeding limits for minor dents are classified as major and must be repaired by patching, insertion, or replacement. Dented extrusions used as fittings and control supports must be replaced.
Repair Limits – continued

3. Minor nicks, scratches and chafing which can be burnished out of the metal surface, excluding radii, without removing more than ten percent of the original metal thickness are considered minor. Nicks and scratches in a radius can be burnished to a depth equal to 5 percent of the thinner section which is joined by the radius.

4. All nicks, scratches and chafing exceeding the above limitations are major and must be repaired by patching, insertion, or part replacement. Major nicks, scratches, and chafing on forgings, castings, fittings, and support brackets require replacement unless special limits are documented for a specific part.

5. All cracks in sheet metal and rolled and extruded shapes must be repaired by removing the cracked material and making a patch or insertion repair. Part replacement should be used where it is cost effective or where the repairs would be unsightly. Cracked forgings and castings must be replaced.

6. Large area corrosion which can be completely removed without removing over five percent of the original thickness is classified as minor. When the part exhibits large area corrosion on both sides of an area, the total reduction of the original metal thickness is five percent. Corrosion exceeding these limits shall be repaired by patching, insertion, or parts replacement.

7. Isolated spots of corrosion which have a maximum major spot diameter of 2 1/2 -inches or 1/2 of the least dimension open area of skin or web, whichever is less, can be completely removed provided no more than ten percent of the original metal thickness is removed. Spots must be separated by 5-inches of sound, unrepaired, metal.

8. When the corroded spot is on a leg or web of an angle, zee channel, etc., the spot must be completely burnished out. Up to a maximum of ten percent of the original metal thickness may be removed. When the spot extends across two or more elements of a cross section, i.e., both legs of an angle, a leg and web of a channel, the spot must be completely burnished out. Up to a maximum of five percent of the original metal thickness may be removed.

Rivets

1. Loose rivets - Replace all loose rivets.

2. Missing rivets - Replace all missing rivets.

3. Sheared rivets - Determine reason rivets sheared and conduct search for hidden damage. Repair any hidden damage and replace all sheared rivets.

Tubing Assemblies

Inspection limits for tubing assemblies are shown in Table 2. Inspect all clamps IAW TM 1-1500-204-23 Series and replace as required.

Hose Assemblies

Inspection limits for hose assemblies are shown in Table 3. Inspect all clamps IAW TM 1-1500-204-23 Series and replace as required.

Electrical Wiring

Inspection limits for electrical wiring (AC and DC Systems) are shown in Table 4. Inspect all clamps IAW TM 1-1500-204-23 Series and replace as required.

Electrical Components

Inspection limits for relays, rheostats, switches, circuit breakers, fuses, plugs, connectors, receptacles, shunts, and shock mounts are shown in Table 5.

Control Rods, Tube Assemblies, and Connector Links

Inspection limits for control rods, tube assemblies, and connector links are shown in Table 6.
ACCEPTANCE OF REPAIRS

Replace all repairs that do not meet the criteria of this DMWR (ie, type and thickness of repair material). Only non-standard field repairs require replacement. Over-strength repairs can remain provided they are neat in appearance and meet the minimum requirements of this DMWR. The presence of temporary repairs preformed by field maintenance organizations is a factor that influences the decision to return an aircraft for depot maintenance. In order that they may be distinguished from temporary repairs, permanently label approved, nonstandard repairs to read “Nonstd Rep Auth By: (approving document identifier)”. Affix the label on or near the repair in such a manner that it can be viewed during access for routine maintenance. Do not affix labels to the aircraft exterior. The provisions of this paragraph only apply to the following structures:

1. Fuel Pods
2. Cabin Door Frame
3. Cockpit Section Bulkheads and Fittings, sta 95 and sta 120
4. Cabin Section Frame and Beams, sta 160 to sta 440
5. Combining Transmission Mount Beams and Fittings
6. Frames and Beams, sta 482, including Engine Mounts
7. Frames, sta 502
8. Frames and Bulkheads, sta 534
9. Torque Deck, WL 72
10. Aft Transmission Mount Beams
11. Forward Transmission Mount Beams

MAINTENANCE ENGINEERING CALL (MEC) - A MEC is a request for clarification of a repair procedure or a request for a one time deviation from standard repair procedures. It is specific to an aircraft tail number and/or component/part, serial number. Should questions arise concerning certain repairs, the Depot/Contractor should submit a MEC to the following address:

AMRDEC, AED, Maintenance Engineering Division
AMSAM-MMC-AV-CCA
308 Crecy Street, BLDG 131, Mail Stop 55
Corpus Christi, TX 78419-5260

NOTE

Corpus Christi Army Depot (CCAD) will submit MEC’s using the Depot unique system and Contractor will submit MEC’s via e-mail to the following address: amsam-mmc-av-cc@amcom-cc.army.mil

The following format will be used:

Aircraft Type:
Aircraft Serial Number:
Aircraft System:
Part Number, Serial Number, Nomenclature
Technical Publication(s)
Contractor Contact Person(s), telephone number, e-mail address

Problem:
Provide a detailed description of the problem. If possible, attach photos of damaged area. Provide location (i.e. sta, WL and BL) and size/depth of damage.
USE OF TABLE 2 AND PSA WORKSHEETS

Table 2. Pre-Shop Analysis Work Package List

The information contained in Table 2 represents the minimum requirements for performing a PSA on the aircraft. This information is in a logical sequence, which shall be maintained when information is placed on an overhaul facilities internally designed worksheets.

NOTE

In addition to those items specified in the PSA, the entire aircraft structure must be inspected for cracks, corrosion, nicks, scratches, dents, bent structure, tears, wrinkled skin, stretched skin, etc.

PSA Worksheets

Overhaul facility personnel will provide space on their PSA Worksheet for recording the condition of a particular inspected item such as: bent, buckled, burned, chipped, corroded, cracked, delaminated, missing, deteriorated, punctured, worn excessively, no damage, etc. Additionally, provisions shall be provided on this worksheet to record disposition directions, or actions required as a result of the conditions noted during the PSA. Disposition/actions/directions should include, as a minimum, such phrases as no action, replace, do not remove, remove, clean, reinstall, repair, strip, splice, incorporate, complied with, not complied with, functional tests, etc.

QUALITY ASSURANCE DATA

Information and data collected shall be considered as objective evidence for Quality Assurance purposes and will be maintained accordingly.

NONDESTRUCTIVE INSPECTION METHODS - Nondestructive inspection requirements are located in WP 0147 00.

TUBING INSPECTION LIMITS

Table 2. Inspection Limits - All Tubing

<table>
<thead>
<tr>
<th>INSPECTION LIMITS: ALL TUBING</th>
<th>REPAIR TASK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dents – Smooth dents, free from sharp edges, nicks and scratches, in straight sections of tubing are permitted to diameters of 20 percent of tube diameter and depths up to 15 percent of dent diameter.</td>
<td>Do not repair</td>
</tr>
<tr>
<td>Dents in excess of above limits.</td>
<td>No repair – replace</td>
</tr>
<tr>
<td>Dents, nicks, and scratches in bend radius of tube are not allowed.</td>
<td>No repair – replace</td>
</tr>
<tr>
<td>Damage in excess of above limits.</td>
<td>No repair – replace</td>
</tr>
<tr>
<td>Nicks and scratches in straight sections of tubes may be burnished to maximum depth of 15 percent of tube wall thickness.</td>
<td>Repair per</td>
</tr>
</tbody>
</table>

TM 55-1520-240-23 Series
TM 1-1500-204-23 Series
NOTE
The replacement hose shall be a duplicate of hose removed as to length, inner
diameter, outer diameter, and contour (except as directed).

Table 3. Inspection Limits - All Hose Assemblies

<table>
<thead>
<tr>
<th>INSPECTION LIMITS: ALL HOSES</th>
<th>REPAIR TASK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deterioration – Replace all hose or hose assemblies showing signs of deterioration indicated by separation of rubber cover or braid from inner tube, cracks, hardening, and lack of flexibility.</td>
<td>No repair – replace TM 55-1520-240-23 Series TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td>Cold flow – Replace hose or hose assemblies showing signs of excessive cold flow indicated by deep permanent impressions and cracks in hose or cover produced by pressure of hose clamps and head of nipple chafing.</td>
<td>No repair – replace TM 55-1520-240-23 Series TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td>Weather checking - Replace hose or hose assemblies with weather checking that is deep or wide enough to expose fabric.</td>
<td>No repair – replace TM 1-1500-204-23 TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td>If two or more broken wires per plait, or more than six broken wires per lineal foot are found, or any broken wire in a position where kinking is suspected, the hose should be scrapped. Crossed-over reinforcement wires shall not be cause for scrapping. This applies to all external wire braid covered hose of all pressure ranges.</td>
<td>No repair – replace TM 55-1520-240-23 Series TM 1-1500-204-23</td>
</tr>
<tr>
<td>Hose twisted, insufficient slack, bent radii, or indication of leakage.</td>
<td>No repair – replace TM 55-1520-240-23 Series TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td>Evidence of abrasion, corrosion, kinking, distortion, bulging, or sharp bends, including outer cover and sockets.</td>
<td>No repair – replace TM 55-1520-240-23 Series TM 1-1500-204-23 Series</td>
</tr>
</tbody>
</table>
**NOTE**

Functional test of the individual electrical circuits and components shall be conducted after installation, repair, or replacement of equipment.

**Table 4. Inspection Limits – All Electrical Wiring (AC and DC Systems)**

<table>
<thead>
<tr>
<th>INSPECTION LIMITS:</th>
<th>REPAIR TASK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improper routing, loose, missing, or improperly installed hardware.</td>
<td>Repair per TM 55-1500-323-24 TM 55-1520-240-23 Series TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td>Fraying, chafing, presence of corrosion, deterioration, or overheating.</td>
<td>Repair per TM 55-1500-323-24 TM 55-1520-240-23 Series TM 1-1500-204-23 Series Refer to WP 0077 00 for corrosion treatment</td>
</tr>
<tr>
<td>Connector plugs for free pins, coaxial cable shielding for breakdown, environmental seals, and lockwired separately.</td>
<td>Repair per TM 55-1500-323-24 TM 55-1520-240-23 Series TM 1-1500-204-23 Series (See Table 5 Inspection Limits All Electrical Components)</td>
</tr>
</tbody>
</table>
### ELECTRICAL COMPONENT INSPECTION LIMITS

**NOTE**

All electrical switches, circuit breakers, fuses and associated circuitry will be inspected for proper operation, adequacy of support, protection, and general condition throughout the aircraft.

Table 5. Inspection Limits – All Electrical Components

<table>
<thead>
<tr>
<th>INSPECTION LIMITS</th>
<th>REPAIR TASK</th>
</tr>
</thead>
</table>
| Relays for loose connections, broken contact pins or terminals, damaged case or insulation between contact pins, corrosion, pits, and discoloration | Refer to TM 1-1500-204-23 Series  
TM 55-1520-240-23 Series  
TM 55-1500-323-24 Series  
Rheostats for security, corrosion, burned element, damaged wiper, cracks, and correct resistance. Switches for weak detents, security, corrosion, and continuity in both on and off positions. | No repair – replace corroded fuse.  
TM 1-1500-204-23 Series  
TM 55-1520-240-23 Series  
TM 55-1500-323-24 Series  
Clean fuse holders per WP 0077 0. If overheating is found, check for correct rating of fuse circuit breaker. |
| Fuse and fuse holders for presence of corrosion and overheating.                  | No repair – replace corroded fuse.  
TM 1-1500-204-23 Series  
TM 55-1520-240-23 Series  
TM 55-1500-323-24 Series |
| Circuit breakers for security, corrosion, actuation for circuit power on and power off, and reset retentions. | No repair – replace  
TM 1-1500-204-23 Series  
TM 55-1500-323-24 Series  
TM 55-1520-240-23 Series |
| Plugs, connectors, receptacles, and pin filtered adapters for security, contact corrosion, damaged contacts, faulty contacts, and insert cracks. | No repair – replace  
TM 1-1500-204-23 Series  
TM 55-1500-323-24 Series  
TM 55-1520-240-23 Series |
| Shunts for corrosion, security, deep scratches, and discoloration.               | No repair – replace  
TM 1-1500-204-23 Series  
TM 55-1500-323-24 Series  
TM 55-1520-240-23 Series |
| Shock mounts for retention, security, cracks, distortion, corrosion, and bonding. | No repair – replace  
TM 1-1500-204-23 Series  
TM 55-1500-323-24 Series  
TM 55-1520-240-23 Series |
| Wiring cables and bundles, for proper support ties, and identification of newly installed wiring. | Refer to  
TM-55-1500-323-24  
TM 55-1520-240-23 Series  
TM 1-1500-204-23 Series |
### Table 6. Inspection Limits For Control Rods, Tube Assemblies and Connecting Links

<table>
<thead>
<tr>
<th>INSPECTION LIMITS</th>
<th>REPAIR TASK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicks and scratches on rods – 10 percent of wall thickness.</td>
<td>Refer to TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td></td>
<td>TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td>Nicks, and scratches on end fitting – 10 percent of material thickness or .040 inches, whichever is less</td>
<td>Refer to TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td></td>
<td>TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td>Dents – Divide connecting link tube into three equal sections. Check tube for dents in middle third. Check tube for dents in other two thirds.</td>
<td>Refer to TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td></td>
<td>TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td>Visually check for out-of-roundness – If an out-of-round condition is found, determine the extent of this condition. Use calipers at out-of-round location to measure diameter. Move calipers 90 percent around link and repeat measurement. On tubes less than 2 inches in diameter, an out-of-round condition of 0.010 inch is permissible in middle one-third of tube. On tubes greater than 2 inches in diameter, an out-of-round condition of 0.015 inch is permissible. On any diameter tube, an out-of-round condition of 0.015 inch is permissible in each of end one-third portions of tube.</td>
<td>Refer to TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td></td>
<td>TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td>Corrosion – 5 percent of wall thickness after removal. 10 percent of thickness of rod ends or fittings or 0.040 inch, whichever is less.</td>
<td>Refer to TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td></td>
<td>TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td>Rod ends for looseness in rod – no looseness allowed.</td>
<td>Refer to TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td></td>
<td>TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td>Check nuts on the adjustable end of the connecting link for looseness – If the check nut on the adjustable end of the connecting link is loose, install an internal star washer under the check nut as follows:</td>
<td>Refer to TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td></td>
<td>TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td><strong>FOR CHECK NUT</strong></td>
<td><strong>USE INTERNAL WASHER</strong></td>
</tr>
<tr>
<td>AN316-6R</td>
<td>MS35333-42</td>
</tr>
<tr>
<td>AN316-7R</td>
<td>MS35333-43</td>
</tr>
<tr>
<td>AN316-8R</td>
<td>MS35333-44</td>
</tr>
</tbody>
</table>

**NOTE**

While torquing check nuts, make sure the rod of the tube nearest the check nut being torqued does not turn.

Torque both check nuts evenly, 800 to 1100 in. lb. for P/N 114R3411 and 1050 to 1300 in. lb. for P/N 114R3611. Use additional torque to align cotter pin holes.
FLIGHT CONTROL COMPONENTS INSPECTION LIMITS - continued

Table 6. Inspection Limits For Control Rods, Tube Assemblies and Connecting Links - continued

<table>
<thead>
<tr>
<th>INSPECTION LIMITS</th>
<th>REPAIR TASK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bearing for looseness.</td>
<td>Refer to TM 55-1500-322-24</td>
</tr>
<tr>
<td>Dry type bearings</td>
<td>Refer to TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td>0.007 inch radial play max.</td>
<td>TM 1-1500-204-23 Series</td>
</tr>
<tr>
<td>0.10 inch axial play max.</td>
<td></td>
</tr>
<tr>
<td>Antifriction bearings</td>
<td></td>
</tr>
<tr>
<td>0.004 inch radial play max. Axial play on antifriction bearings can vary.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It is not a satisfactory criterion for checking serviceability of antifriction bearings.</td>
</tr>
<tr>
<td>Bolts and bushings used at moving connections - Max wear, bolt shank minimum diameter is no less than 0.001 inch below minimum production diameter unless otherwise directed. Max wear bushing hole maximum diameter no more than 0.001 inch above maximum production diameter.</td>
<td>Refer to TM 1-1500-204-23 Series TM 55-1520-240-23 Series</td>
</tr>
</tbody>
</table>

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
NOSE SECTION EXTERIOR

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 55-1520-240-23 Series
TM 1-1500-204-23 Series
WP 0059 00
WP 0077 00
WP 0080 00
WP 0082 00
WP 0086 00
WP 0087 00
WP 0097 00
WP 0128 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The nose section exterior consists of a nose compartment door, nose skins, side skins, stringers, crown skins and stringers, crown forward skin and stiffeners, windshield wiper system, crew doors, escape hatch, cabin door, forward pylon fixed and hinged fairing (work platform), forward weather protective shield, and glare shield. The nose compartment door consists of an outer and inner skin made of aluminum alloy, spot-welded together. The exterior skin sta 21 to sta 160, WL minus 40 to WL plus 94, are made of various aluminum alloys. The stringers, sta 42 to sta 160, WL minus 40 to WL plus 94, are formed or extruded sections riveted longitudinally to the bottom sides, and crown panels of the structure. The windshield wiper system consists of a motor, a five-position switch, resistors in the overhead panel, two wipers and blades, drive shafts, and actuators. The 28-volt direct current electric motor is mounted above the center windshield behind the overhead panel. It provides power to drive the wipers. Flexible drive shafts connect the motor and actuators. The actuator converts the fast rotary action of the motor to a slow back and forth motion to move the wipers. They are located inside the cockpit above the windshields. The pilot and copilot jettison doors are located on each side of the cockpit. The door consists of a door assembly, two fixed window panel assemblies, and a sliding window panel assembly. The window panels are made of acrylic plastic. The RH cabin upper and lower doors are spot welded assemblies made of aluminum alloy skin welded to an inner pan, hinges, latches, and aluminum angles. The escape hatch consists of a spot welded assembly, a window pane, seal, and seal filler. The welded assembly is made of aluminum outer skin spot welded to an inner pan and doublers. The window is made of acrylic plastic. The forward pylon fixed fairing has a forward and aft section. The forward weather protective cover is made of sandwich honeycomb and aluminum stiffeners. The forward section consists of inner and outer skins of aluminum and formers attached between the skins. The aft section consists of side and top skins made with laminated plastic-impregnated glass cloth. Formers and stiffeners are attached to the skins and maintain the contour in the aft section. The hinged fairing is a sandwiched construction. The glare shield is made of thermoplastic. Refer to WP 0080 00 for sealing requirements.
INSPECTION REQUIREMENTS

Figure 1. Nose Section Exterior

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Cabin Doors
   a. Inspect doors for cracks (no cracks allowed), gouges, scratches, damage, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect door latches, hinges, brackets, and attaching hardware for damage or evidence of corrosion.
   d. Inspect door seals for cuts, breaks, and deterioration.
   e. Inspect window pane for cracks, crazing, pitting, and scratches.
   f. Minor damage after burnishing shall not exceed 10% of the material thickness.
   g. Refer to WP 0097 00 for accept/reject criteria and repair procedures.
   h. Refer to WP 0077 00 for corrosion removal and treatment.

2. Nose Forward Crown Skin
   a. Inspect for dents, holes, cracks (no cracks allowed), gouges, scratches, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Minor damage after burnishing shall not exceed 10% of the material thickness.
   d. Refer to WP 0097 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS – continued

3. Hinged Platform (LH and RH work platform)
   a. Inspect for cracks (no cracks allowed), delamination, gouges, dents, scratches, holes, or evidence of corrosion.
   b. Inspect hinges, latches, cables, brackets, and attaching hardware for damage or evidence of corrosion.
   c. Inspect seals for cuts, breaks and deterioration.
   d. Refer to WP 0097 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. Forward Pylon Fairing
   a. Inspect for dents, cracks (no cracks allowed), gouges, scratches, holes, or evidence of corrosion.
   b. Minor damage after burnishing shall not exceed 10% of the material thickness.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0097 00 for accept/reject criteria and repairs.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. Weather Protective Cover, Forward
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0097 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Nose Stringers sta 85 to sta 160, WL minus 40 to WL plus 46 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), nicks, scratches, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Minor damage after burnishing shall not exceed 10% of thickness of thinnest leg of material.
   d. Refer to WP 0087 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

7. Nose Crown Skins sta 85 to sta 160, WL plus 46 to WL plus 52 (LH and RH)
   a. Inspect for dents, holes, cracks (no cracks allowed), gouges, nicks, scratches, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Minor damage after burnishing shall not exceed 10% of the material thickness.
   d. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

8. Escape Hatch
   a. Inspect hatch for cracks (no cracks allowed), gouges, scratches, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect hatch latches, brackets, and attaching hardware for damage or evidence of corrosion.
   d. Inspect seals for cuts, breaks, or deterioration.
   e. Inspect window pane for cracks, crazing, pitting and scratches.
   f. Minor damage after burnishing shall not exceed 10% of the material thickness.
   g. Refer to WP 0097 00 for accept/reject criteria and repair procedures.
   h. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

9. Nose Side Skin sta 95 to sta 160, WL minus 40 to WL plus 46 (LH and RH)
   a. Inspect for dents, holes, cracks (no cracks allowed), gouges, scratches, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Minor damage after burnishing shall not exceed 10% of the material thickness.
   d. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

10. Pilot And Copilot Doors
    a. Inspect for dents, cracks (no cracks allowed), gouges, scratches, or evidence of corrosion.
    b. Inspect door latches, hinges, and brackets and attaching hardware for damage.
    c. Minor damage after burnishing shall not exceed 10% of the material thickness.
    d. Refer to WP 0097 00 for accept/reject criteria and repair procedures.
    e. Refer to WP 0077 00 for corrosion removal and treatment.

11. Nose Side Skins
    a. Inspect for dents, holes, cracks (no cracks allowed), gouges, scratches, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Minor damage after burnishing shall not exceed 10% of the material thickness.
    d. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
    e. Refer to WP 0077 00 for corrosion removal and treatment.

12. Glare Shield
    a. Inspect for cracks (no cracks allowed), dents, gouges, or scratches.
    b. Inspect for loose, missing, or damaged hardware.
    c. Refer to WP 0082 00 for accept/reject criteria and repair procedures.

13. Nose Skin
    a. Inspect for nicks, scratches, cracks (no cracks allowed), dents, holes, gouges, buckling and canning, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Any minor damage after burnishing shall not exceed 10% of the material thickness.
    d. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
    e. Refer to WP 0077 00 for corrosion removal and treatment.

14. Nose Compartment Door
    a. Inspect for dents, holes, cracks (no cracks allowed), gouges, scratches, or evidence of corrosion.
    b. Inspect door seal for cuts, breaks, and deterioration.
    c. Inspect hinges, struts, latches, brackets, and attaching hardware for damage or evidence of corrosion.
    d. Check for loose, missing, or damaged attaching hardware.
    e. Minor damage after burnishing shall not exceed 10% of the material thickness.
    f. Refer to WP 0097 00 for accept/reject criteria and repair procedures.
    g. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

15. Windshield Wiper System
   Refer to WP 0059 00 for inspection, accept/reject criteria.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
COCKPIT ENCLOSURE

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DMWR 55-1560-275
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0004 00
WP 0077 00
WP 0080 00
WP 0091 00
WP 0098 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cockpit enclosure consists of three sections of frames, three windshield assemblies, four panel assemblies, and a door assembly. The upper framing consists of three skins, riveted together, and is supported by a deck at WL plus 48 and formed channels attached vertically. The deck at WL plus 48 is a beaded web attached at sta 95 (canted) and to a stiffener, which maintains the contour of the upper framing in the forward area. The forward and side framing consists of forward, center, and aft support posts and upper and inner sill assemblies. The forward posts are made of rectangular aluminum alloy tubing. The center posts are made of formed channels riveted together, flange-to-flange, to form a box section. The aft posts are single formed channels. The upper sill is a formed angle and has an extruded cap attached along the inboard edge. The inner sill consists of a frame and a shield, riveted together. The lower frame consists of a former assembly, a bulkhead, and a box assembly. The former assembly consists of two formed channels, one located on each side of the fuselage centerline. The bulkhead consists of a web bonded by extruded caps and is installed within the former assembly. The box assembly is similarly located within the former assembly and consists of a bottom and two side webs. Extruded caps join the webs. A typical windshield assembly is made of laminated plastic, which can be heated electrically by embedded elements. Certain helicopters may be equipped with laminated glass-plastic, which can be heated electrically by embedded elements. A typical window panel assembly, located in the crown and lower framework, consists of a section made of heat-resistant acrylic, reinforced along the edges with 20 ply, laminated acrylic resin impregnated glass cloth. Window panels in the lower enclosure contain cut outs for the AFCS yaw ports. Refer to WP 0080 00 for sealing requirements.
INSPECTION REQUIREMENTS

Figure 1. Cockpit Enclosure

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Upper Framing and Deck, WL plus 48
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, holes, gouges, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0098 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Windshields, Overhead and Lower Window Panels
   a. Inspect for chips, cracks, or crazing (no cracks or crazing allowed), scratches, pitting, blemishes or discolorations.
   b. Inspect for loose, missing, or corroded screws bordering the windows.
   c. Inspect foam seal tape for cuts, voids, deterioration, or cracks.
   d. Inspect for evidence of leaking.
   e. Inspect free-air thermometer probe for security, evidence of leaking, or evidence of corrosion.
   f. Refer to WP 0091 00 for accept/reject criteria and repair procedures.
   g. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

3. Pilot and Copilot Door Frames
   a. Inspect for dents, scratches, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0098 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Box Assembly
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0098 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Nose Door Frame Assemblies
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0098 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Bulkhead Assembly
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0098 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Nose Dynamic Absorber
   a. Inspect exterior covers for cracks (no cracks allowed), dents, scratches, and corrosion.
   b. Refer to TM 55-1520-240-23 series for repair.
   c. Refer to DMWR 55-1560-275 for repair/overhaul.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Windshield Post and Frames
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0098 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Glare Shield
   Refer to WP 0004 00 for inspection criteria.

END OF WORK PACKAGE
## INITIAL SETUP

**Test Equipment:**
As Required

**Tools and Special Tools:**
As Required

**Material/Parts:**
As Required

**Personnel Required:**
Examiner (PSA)

### References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0077 00
- WP 0099 00

### Equipment Conditions:
As Required

### Special Environmental Condition:
As Required

---

## SCOPE

The nose structure, sta 21 to sta 51, consists of brackets, struts, formers, and stiffeners, which are made from aluminum sheet stock and aluminum alloy extrusions.

## INSPECTION REQUIREMENTS

![Nose Structure Diagram](ms022467)

Figure 1. Nose Structure

0006 00-1
INSPECTION REQUIREMENTS - continued

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Stiffeners (LH and RH) Aft Outboard
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0099 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Former (LH and RH) Aft Center
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0099 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Stiffeners (LH and RH) Aft
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0099 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Bracket (LH and RH) Aft
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0099 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Struts (LH and RH) Aft
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0099 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Former (LH and RH) Outboard
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0099 00 for accept/reject criteria and repairs.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

7. Former (LH and RH) Inboard
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0099 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Former (LH and RH) Center
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0099 00 for accept/reject criteria and repairs.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Former (LH and RH) Forward
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0099 00 for accept/reject criteria and repairs.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Former (LH and RH) Forward
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0099 00 for accept/reject criteria and repairs.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

11. Stiffener (LH and RH) Forward
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0099 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Stiffener (LH and RH) Forward
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0099 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

13. Stiffeners (LH and RH) Forward
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0099 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
LOWER CONSOLE STRUCTURE

INITIAL SETUP

Test Equipment: As Required
Tools and Special Tools: As Required
Material/Parts: As Required
Personnel Required: Examiner (PSA)

References:
TM 55-1520-240-23 Series
TM 1-1500-204-23 Series
WP 0077 00
WP 0100 00

Equipment Conditions: As Required
Special Environmental Condition: As Required

SCOPE

The lower console consists of forward and aft side assemblies, aft web, web platform, top assembly, bottom web, pan assembly, beam support, and rail strip support, which are formed and extruded members made of aluminum sheet metal and aluminum alloy.

INSPECTION REQUIREMENTS

Figure 1. Lower Console Structure
INSPECTION REQUIREMENTS - continued

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Side Assemblies, LH and RH Aft
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0100 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Rail Strip Support
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0100 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Web Assembly Aft
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0100 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Beam Assembly
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0100 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Pan Assembly
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0100 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Side Assemblies (LH and RH) Forward
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0100 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

7. Top Web Assembly
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0100 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Forward Platform
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0100 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Bottom Web Assembly
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0100 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
NOSE TUB ASSEMBLY

INITIAL SETUP

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SCOPE

The nose tub assembly consists of six floor formers, exterior skin, sta 51 to sta 160, stringers, sta 51 to sta 160, and longerons L/H and R/H, WL minus 40, sta 95 to sta 160. The floor formers have webs reinforced with formed aluminum sheet metal or aluminum alloy extruded caps and stiffeners with the exception of sta 160, which contains a bonded honeycomb assembly. The longerons are aluminum extrusions. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS

![Figure 1. Nose Tub Assembly](ms022469)

Figure 1. Nose Tub Assembly
INSPECTION REQUIREMENTS - continued

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Floor Former sta 140
   a. Inspect for dents, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0101 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Floor Former sta 160
   a. Inspect for dents, cracks, (no cracks allowed), nicks, gouges, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0083 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment

3. Nose Tub Stringers
   a. Inspect for dents, scratches, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0087 00 and WP 0088 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Tub Exterior Skin Assembly
   a. Inspect for dents, scratches, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Floor Former sta 51
   a. Inspect for dents, scratches, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0101 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Cockpit Dynamic Absorbers
   a. Inspect exterior covers for cracks (no cracks allowed), dents, scratches, and corrosion.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

7. Floor Former sta 70
   a. Inspect for dents, scratches, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0101 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Floor Former sta 95
   a. Inspect for dents, scratches, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0101 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Longerons (LH and RH)
   a. Inspect for dents, scratches, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0087 00 and WP 0088 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Floor Former sta 120
    a. Inspect for dents, scratches, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0101 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
COCKPIT FLOOR STRUCTURE

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0083 00
WP 0102 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The floor consists of webs, angles, stiffeners, channels, cap angles, seat beams, and a honeycomb panel, sta 51 to sta 120, WL minus 8 to WL minus 18. The webs, angles, stiffeners, channels, and cap angles are formed and extruded members, made of aluminum. Refer to WP 0080 00 for sealing requirements.
INSPECTION REQUIREMENTS

Figure 1. Cockpit Floor Structure

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Forward Web (LH and RH)
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0102 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Webs, Aft (LH and RH)
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0102 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS – continued

3. Web, Forward Center
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0102 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Floor Panel sta 95 to sta 120
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0083 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Upper Forward Cap Angle (LH and RH)
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0102 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Angles (LH and RH) Fwd Center
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0102 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Seat Beams (LH and RH)
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0102 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Cap Angles (LH and RH) sta 51 to sta 95
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0102 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Stiffeners Aft Web Center
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0102 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS – continued

10. Channel Center sta 80
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0102 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
NOSE FRAMES

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 1-1500-335-23
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0087 00
WP 0103 00
WP 0147 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The nose frames consist of seven frames, sta 95 to sta 160, three longerons, sta 95 to sta 160, BL 46 left, BL 37 right and BL 50 right, cabin door coaming, and sill assembly (bonded). The bulkhead, sta 95, consists primarily of six webs extending the full width of the body. All webs are reinforced with formed and extruded caps. Formed stiffeners are riveted laterally to the webs. Bulkhead top center, sta 95, contains the forward transmission forward mount fitting. The partial formers are located at sta 110 and sta 140. The crown and side of the partial former at sta 140 is flanged webs made of aluminum alloy and contains lightening holes. The full former at sta 120 contains the forward transmission's aft mount fitting. The full former at sta 160 is part of the splice with the cabin fuselage section. The crown formers, located at sta 130 and sta 150, are flanged webs made of aluminum alloy. The longerons consist of aluminum alloy formed channels riveted back to back and reinforced along the upper flanges with extruded or formed angles. The door coaming is made of molded 6-ply plastic impregnated glass cloth. Formed parts made of 6061-T6 aluminum alloy are riveted to the lower sides and bottom of the coaming. An angle made of 2024-T6 clad aluminum is riveted to the body skin across the top of the door opening. Coaming faying surfaces are sealed watertight. The cabin doorsill is a honeycomb panel, sta 120 to sta 160, WL minus 30, BL 45R. Refer to WP 0080 00 for sealing requirements.
INSPECTION REQUIREMENTS

Figure 1. Nose Frames

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Trough Assembly
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

2. Crown Frame, sta 160
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Forward Transmission Aft Mount Fitting, sta 120
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. NDI mounting bolt pad surfaces at interface, including fillet radii and around barrel nut, and areas above roof deck per WP 0147 00.
   d. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. Frame, sta 140 LH
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Longeron, sta 95 to sta 160, BL 37L, WL 50
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0087 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Forward Transmission Forward Mount Fitting, sta 95
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. NDI mounting bolt pad surfaces at interface, including fillet radii and around barrel nut, and areas above roof deck per WP 00147 00.
   d. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

7. Crown Frame, sta 110 (LH and RH)
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Bulkhead, sta 95
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

9. Frames, sta 120 (LH and RH)
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Cabin Door Coaming
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

11. Cabin Door Sill Panel
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, delamination, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Longeron, sta 95 to sta 160, BL 50R, WL 50R, and WL 46
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

13. Crown Frame, sta 130
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

14. Frame, sta 160 (LH and RH)
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

15. Crown Frame, sta 140 (LH and RH)
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corruption.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

16. Crown Frame, sta 150
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0103 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 1-1500-335-23
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0104 00
WP 0147 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

Beams are located at BL 18L and R, sta 95 to sta 120, and BL 10L sta 95 to sta 120. Each beam consists of webs reinforced with formed and extruded stiffeners. Extruded caps are riveted to the forward and aft edges of each beam. The BL 18 beam contains the forward transmission LH and RH mount fittings. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS

Figure 1. Beam Assemblies BL 18
NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. RH Forward Transmission Mount Fitting
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. NDI mounting bolt pad surfaces at interface, including fillet radii, area around barrel nut, and areas above roof deck, per WP 0147 00.
   d. Refer to WP 0104 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

2. LH Forward Transmission Mount Fitting
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. NDI mounting bolt pad surfaces at interface, including fillet radii, areas around barrel nut, and areas above roof deck, per WP 0147 00.
   d. Refer to WP 0104 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. Beam, BL 18L
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0104 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Beam BL 10L
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0104 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Beam BL 18R
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0104 00 for accept/reject criteria and repair procedures.
   d.Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FORWARD HYDRAULIC SUPPORT

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0105 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The forward hydraulic support assembly consists of struts, supports, angles, a bracket, and a brace. The assembly is made of aluminum sheet metal, extruded aluminum alloy, and stainless steel.

INSPECTION REQUIREMENTS

Figure 1. Forward Hydraulic Support
NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Supports
   a. Inspect for dents, scratches, cracks, (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Top Forward Strut
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Top Center Support
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Support (RH center)
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Strut (RH inboard)
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Angles, Center and RH
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

7. Supports
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Angles, Center and LH
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Bracket, LH Forward
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Brace Forward
    a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0105 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AUXILIARY DRIP PAN AND FORWARD TRANSMISSION DRIP PAN

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0082 00
WP 0087 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The auxiliary drip pan is located in the forward pylon at approximately sta 110, WL plus 26, and BL 18R. The drip pan assembly consists of a pan formed from 2024-T4 clad aluminum alloy or molded polycarbonate, and supports formed from 2024-T4 clad aluminum alloy. The forward transmission drip pan is located between sta 95 to sta 120, WL plus 40. The drip pan consists of a pan, made from 3 or 4 ply laminated plastic-impregnated glass cloth, receptacle, and stud assemblies for attachment purposes and an aluminum cup and tube.

INSPECTION REQUIREMENTS

Figure 1. Auxiliary Drip Pan and Forward Transmission Drip Pan
INSPECTION REQUIREMENTS - continued

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Forward Transmission Drip Pan
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, wear, or evidence of corrosion.
   b. Inspect drain lines for obstruction and damage and security.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0082 00 accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

2. Auxiliary Drip Pan
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, wear, or evidence of corrosion.
   b. Inspect drain lines for obstruction and damage and security.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0087 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
PILOT AND COPILOT SEATS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0082 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The pilot and copilot seats are mounted on tracks in the cockpit floor. The seats are interchangeable. Both seats have aluminum framing, restraint systems, and forward, aft, and vertical adjustment.

INSPECTION REQUIREMENTS
NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Back and Bottom Seat Cushion
   a. Inspect cushions for cleanliness, cuts, rips, tears, or deterioration and discoloring due to contact with foreign matter.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria.

2. Armor Plating (if installed)
   a. Inspect for security, peeling, or spalling shield on exposed surfaces.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria.

3. Seat Bucket
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0082 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Restraint System
   a. Inspect pilot and co-pilot lap belts for signs of rot, wear, cuts, deterioration and discoloring due to contact with foreign matter, fraying, loose or broken stitches, and proper operation.
   b. Inspect pilot and co-pilot shoulder harness webbing for signs of rot, wear, cuts, deterioration and discoloring due to contact with foreign matter, fraying, loose or broken stitches, and proper operation.
   c. Inspect inertia reels for scratches, cracks (no cracks allowed), nicks, gouges, holes, evidence of corrosion, and proper operation.
   d. Inspect inertia reel strap webbing for signs of rot, wear, cuts, deterioration and discoloring due to contact with foreign matter, fraying, and loose or broken stitches.
   e. Inspect for loose, missing, or damaged attaching hardware.
   f. Refer to TM 1-1500-204-23 and TM 55-1520-240-23 series for accept/reject criteria and repair procedures.
   g. Refer to WP 0077 00 for corrosion removal and treatment.

5. Bungee Cords
   a. Inspect bungee cords for security, cuts, tears, deterioration, and discoloring due to contact with foreign matter.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria.

6. Seat Frame
   a. Inspect for dents, scratches, cracks (no cracks allowed), nicks, gouges, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

7. Seat Rail
   a. Inspect for security, cracks (no cracks allowed), chafed and worn areas, corrosion, and elongated holes for seat locking pin holes.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria.
   c. Refer to WP 0077 00 for corrosion removal and treatment.

8. Forward and Aft Seat Adjustment Mechanism
   a. Inspect fwd and aft seat adjustment mechanism for proper operation.
   b. Inspect for broken cables, loose, missing, or damaged attaching hardware, or evidence of corrosion.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Vertical Seat Adjustment Mechanism
   a. Inspect vertical seat adjustment for proper operation.
   b. Inspect for broken cables, loose, missing, or damaged attaching hardware, or evidence of corrosion.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment: As Required
Tools and Special Tools: As Required
Material/Parts: As Required
Personnel Required: Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0106 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The heating and ventilation ducting consist of cockpit ducts, and cabin ducts. Some ducts are made of aluminum. Other ducts are made of impregnated glass cloth, polycarbonate, or wire-wound flexible fiberglass hoses. The cabin ducts have an aluminum buffer board for protection.

INSPECTION REQUIREMENTS

Figure 1. Heating and Ventilation Ducting
INSPECTION REQUIREMENTS - continued

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Cockpit Ducting
   a. Inspect for cracks, nicks, scratches, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0106 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Cabin Ducting and Buffer Board
   a. Inspect for cracks, nicks, scratches, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0106 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN EXTERIOR

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 series
WP 0077 00
WP 0080 00
WP 0081 00
WP 0086 00
WP 0107 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cabin exterior consists of three walkway panels, a crown, and LH and RH side skins, sta 160 to sta 440, WL minus 40 to WL plus 51, window panes and fairings, tunnel covers, and step assemblies RH side. The walkways panels consist of rigidized aluminum alloy bonded to a sandwich honeycomb structure. The crown and side skins are aluminum alloy panels. The RH step assemblies (6 ea) are made of fiberglass with hinged aluminum doors. The tunnel covers are bonded sandwich honeycomb structure. The window panels are made of acrylic plastic. The windows at sta 381 LH and RH are bubble type. The panes are retained in the fuselage by an aluminum frame, a rubber seal, and rubber seal filler. A nylon strap is looped over the seal filler for jettisoning purposes. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS

Figure 1. Cabin Exterior
INSPECTION REQUIREMENTS - continued

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Crown Skins (LH and RH), WL plus 42, BL 10L and BL 20R
   a. Inspect for dents, cracks (no cracks allowed), scratches, buckling or canning, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Step Assemblies (RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0081 00 for accept/reject criteria and repair procedures.
   d. Replace damaged hinge and broken spring.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. Walkway Roof Panels (forward, center, and, aft)
   a. Inspect for dents, cracks (no cracks allowed), scratches, nicks, gouges, delaminations, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0107 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Tunnel covers
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect struts, hinges, straps, studs, retainers, and hardware for damage, inspect seals for cuts and damage.
   d. Refer to WP 0107 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. Side Skins, sta 160 to sta 440, WL 0 to WL plus 42 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, buckling or canning, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS

6. Window Panes and Frames (LH and RH)
   a. Inspect windows for cracks, crazing, nicks, pitting, and scratches. Replace if cracked, pitted, or crazed.
   b. Inspect window frame for dents, nicks, cracks (no cracks allowed), scratches, or evidence of corrosion.
   c. Inspect frames for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0107 00 for accept/reject criteria and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

7. Side Skins, sta 160 to sta 440, WL 0 to WL minus 40 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, buckling of canning, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
**INITIAL SETUP**

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<tr>
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<tr>
<td>Tools and Special Tools:</td>
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<tr>
<td>Material/Parts:</td>
<td>As Required</td>
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<td>Personnel Required:</td>
<td>Examiner (PSA)</td>
</tr>
</tbody>
</table>

**References:**
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 series
- WP 0077 00
- WP 0080 00
- WP 0083 00
- WP 0086 00
- WP 0087 00
- WP 0108 00

**Equipment Conditions:**
As Required

**Special Environmental Condition:**
As Required

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**SCOPE**

The forward pods (LH and RH) consist of aluminum exterior skins, formers, and access doors. The LH pod contains the battery, auxiliary power connection, access door, and coaming assemblies. The skins, formers, webs, and supports are made of 2024-T3 clad-aluminum. Refer to WP 0080 00 for sealing requirements.

**INSPECTION REQUIREMENTS**

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Figure 1. Forward Pod Installation sta 160 to sta 187
NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Exterior Skins (top, bottom, and forward, LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Access Doors (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect hinges, latches, strut, and supports for security, proper operation, and general condition.
   d. Refer to WP 0108 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. Former, sta 187 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0108 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Coaming Assembly (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect door seals for cuts and tears.
   d. Refer to WP 0087 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. Battery Shelf, LH/Electrical Shelf, RH
   a. Inspect for dents, cracks (no cracks allowed), delamination, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0083 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Former, sta 170 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0108 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

7. Auxiliary Power Access
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect door hinge and spring for cracks and corrosion, replace damaged hinge and spring with original material.
   d. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
# DEPOT MAINTENANCE WORK REQUIREMENT
## CH-47D HELICOPTER
### FUEL POD AND ACCESS PANELS

## INITIAL SETUP

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## SCOPE

The pod segments are hinged to the fuselage structure allowing access to the fuel tanks. Hinged panels allow access to the electrical compartments and forward landing gear. The RH forward landing gear access contains the refuel valve support. Backer board assemblies are between each fuel tank and the fuselage outer skin. Isolator panel assemblies are mounted under each fuel tank. The fuel pods are made of nomex honeycomb /fiberglass skin, and formers reinforced with graphite rods top and bottom; strakes are attached to the underside of the pods. The landing gear doors and access panels are sandwich honeycomb construction. The RH refuel valve support consists of webs reinforced with formed and extruded supports. The backer board assemblies are made of laminated polyester-impregnated glass cloth. The isolator panel assemblies are constructed from laminated glass cloth with a nonmetallic honeycomb core. Refer to WP 0080 00 for sealing requirements.
INSPECTION REQUIREMENTS

Figure 1. Fuel Pod and Access Panels

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Fuel Pods (LH and RH) (6ea)
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0109 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

2. Forward Landing Gear Doors (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0109 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Electrical Compartment Doors and Access Panels (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0109 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Backer Board Assemblies (LH and RH)
   a. Inspect for cracks, tears, and separations of laminate.
   b. Refer to WP 0081 00 for accept/reject criteria and repair procedures.

5. Isolator Panel Assemblies (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), delamination, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0109 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Refuel Assembly Support (RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0109 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN CROWN TUNNEL

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 series
WP 0077 00
WP 0080 00
WP 0086 00
WP 0088 00
WP 0110 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The crown tunnel, sta 160 to sta 440, BL 10R to BL 20L, consists of an exterior skin and stiffeners, LH and RH support stringers, BL 10R and BL 20L; baffle installation sta 411; rescue hoist beam intercostals, BL 0, sta 160 to sta 440; litter support intercostals, BL 20L and BL 20R; dome light brackets, BL 5L sta 160 to sta 440; blade fold support LH and RH, BL 28, sta 300 to sta 320, drive shaft supports, sta 160, sta 200, sta 260, sta 310, sta 360, and sta 410; and six tunnel drain wells, BL 0, located under each drive shaft support. The brackets, skin, stiffeners, webs angles, and stringers, are made of aluminum alloy. Refer to WP 0080 00 for sealing requirements.
INSPECTION REQUIREMENTS

Figure 1. Cabin Crown Tunnel

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Stringer (RH), BL 10R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0088 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Stringers (LH), BL 20L
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0088 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

3. Tunnel Skin and Stiffeners, sta 160 to sta 440
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and skin repair procedures.
   d. Refer to WP 0087 00 for accept/reject criteria and WP 0088 00 for stiffener repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. Crown Stringers, sta 160 to sta 440, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and skin repair procedures.
   d. Refer to WP 0087 00 for accept/reject criteria and WP 0088 00 for stringer repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. Baffle Installation, sta 411
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0110 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Drive Shaft Supports
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0110 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Tunnel Drain Wells
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0110 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Rescue Hoist Beam
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0110 00 for accept/reject criteria and repair procedures.

9. Intercostals, BL 0
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0110 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

10. Dome Light Brackets
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0110 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

11. Litter Support Intercostals
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0110 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Support, Blade Fold, sta 300 to sta 320 (LH and RH), BL 28L and BL 28R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0110 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
# DEPOT MAINTENANCE WORK REQUIREMENT
## CH-47D HELICOPTER
### CABIN INTERIOR

## INITIAL SETUP

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<td>Tools and Special Tools:</td>
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## References:
- TM 1-1500-204-23 Series
- TM 1-1500-335-23
- TM 55-1520-240-23 series
- WP 0077 00
- WP 0080 00
- WP 0087 00
- WP 0088 00
- WP 0111 00

## Equipment Conditions:
- As Required

## Special Environmental Condition:
- As Required

## SCOPE

The cabin interior structural assembly consists of 18 partial (side) formers, seven crown formers, and two full formers, sta 160 and sta 440. The partial (side) formers are made of formed sections of aluminum alloy with extruded caps. Partial formers in the crown panel section are made of flanged webs with extruded inner and outer caps. The crown formers are flanged webs made of aluminum alloy with extruded stiffeners. Extruded caps are riveted to the upper and lower edges of the web. The sides have three beams at WL plus 29, WL 0, and WL minus 16, made of aluminum alloy webs with extruded stiffeners and caps. The beams at WL minus 16, sta 140 to sta 482, BL 50L, sta 160 to sta 482, BL 50R, support the troop seats. The beams at WL plus 29, sta 160 to sta 482, BL 50 L&R, support the troop seat backrests and litter poles. The beams, WL 0, extend from sta 160 to sta 440. The longerons are a continuation of a stringer located at sta 160 to sta 200, WL plus 38, and sta 400 to sta 440, BL 31 L&R. The stringers are aluminum-extruded sections riveted longitudinally to the side and crown panels. They are connected to the formers through finger plates. Refer to WP 0080 00 for sealing requirements.
INSPECTION REQUIREMENTS

NOTE

The items in Figure 1, sheets 1 and 2, correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Cabin Interior (Sheet 1 of 2)

1. Crown Former, sta 180
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Crown Former, sta 200
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Crown Former, sta 220
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

4. Crown Former, sta 240
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Crown Former, sta 260
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Crown Former, sta 280
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Crown Former, sta 300
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Crown Former, sta 320
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Crown Former, sta 340
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Crown Former, sta 360
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

11. Crown Former, sta 380
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
**INSPECTION REQUIREMENTS - continued**

c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Crown Former, sta 400
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

13. Crown Former, sta 420
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

14. Former, sta 440
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

15  Stringers, sta 160 to sta 440 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0087 00 and WP 0088 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

16. Longeron, sta 400 to sta 440, BL 31, (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0088 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

17. Beams, sta 160 to sta 482, WL plus 29, BL 50, (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

18. Side Former, sta 400 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

19. Side Former, sta 360 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

20. Side Formers, sta 320 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

21. Beams, WL 0 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

22. Side Former, sta 280 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

23. Forward Landing Gear Beams (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to WP 0111 00 for accept/reject criteria and repair procedures.

24. Side Former, sta 240 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

25. Beams, WL minus 16, sta 140 to sta 482, BL 50 L, , sta 160 to 482, BL 50R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

26. Side Former, sta 200 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS - continued

c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

27. Former, sta 160
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

28. Longerons, sta 160 to sta 200, WL plus 38, (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0088 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

29. Partial Side Former (LH and RH), sta 212, sta 225, sta 270, sta 293, sta 306, sta 333, sta 346, sta 413, and sta 426
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

30. Partial Side Former (LH and RH), sta 180 and sta 419
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

31. Partial Side Former (LH and RH), sta 189, sta 238, sta 262, and sta 372
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

32. Partial Side Former (LH and RH), sta 260
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

33. Partial Side Former (LH and RH), sta 372 and sta 389
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0111 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN TUB EXTERIOR SKIN AND STRINGERS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0086 00
WP 0087 00
WP 0112 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The tub consists of exterior skin, WL minus 30 to WL minus 40, bottom stiffeners, hinge angles, splice angles, rescue hatch coaming, and rescue hatch door. The bottom and side skins are made of aluminum alloy sheets. The skin stiffeners are located on the bottom and the bottom side panels. The transverse stiffeners on the bottom panel, except those encompassing the rescue hatch cutout, extend the full width of the panel (hinge to hinge). The longitudinal and transverse stiffeners on the bottom panel reinforce the area of the rescue hatch cutout. The LH and RH hinge angles and splice angles are made of aluminum alloy. The rescue hatch coaming consists of members attached to each side, forward and aft, an extruded retainer, brackets, latch receptacles, and plastic impregnated glass cloth. The rescue hatch door is of a sandwich construction. Refer to WP 0080 00 for sealing requirements.
INSPECTION REQUIREMENTS

Figure 1. Cabin Tub Exterior Skin and Stringers

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Exterior Bottom Skin Stiffeners, sta 160 to sta 440
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

2. Cabin Bottom and Side Stiffeners, sta 160 to sta 440
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, voids, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0087 00 or WP 0088 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Rescue Hatch Lower Door
   a. Inspect for dents, cracks (no cracks allowed), gouges, and nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect door mechanical mechanisms and actuator for proper operation, damage, and security.
   d. Refer to WP 0112 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. Rescue Hatch Coaming
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect seals for tears, deterioration, and debonding.
   d. Refer to WP 0112 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. Exterior Side Skin, sta 160 to sta 440, WL minus 30 to minus 40
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Hinge Angles, (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0087 00 or WP 0093 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Splice Angles, sta 265 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0112 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN TUB FORMERS AND BEAMS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 series
WP 0077 00
WP 0080 00
WP 0113 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cabin tub consists of fifteen formers, sta 160 to sta 440, five cargo tie down adapter floor beams, sta 120 to sta 482, BL 0, BL 20 LH and RH, and BL 44 LH and RH, two rescue hatch beams, sta 300 to sta 380, BL 27 LH and RH, two beams, sta 160 to sta 200, BL 45 LH and RH, tandem cargo hook fittings, sta 240 to sta 260 and sta 400 to sta 420. The formers, sta 160 and sta 440 are made of extruded aluminum alloy angles. The cargo tie down adapter beams, BL 0 and BL 20 LH and RH, are made of aluminum alloy extrusions with receptacles and mounts. The cargo tie down adapter beams, BL 44 LH and RH, are made of aluminum extruded beams and longerons with receptacles and aluminum webs. The rescue hatch beams are made of aluminum alloy extruded caps, aluminum webs, and plastic impregnated glass cloth dust covers. The beams, sta 160 to sta 200, BL 45 LH and RH, are made of aluminum alloy fittings, webs, and cap angles. The forward and aft cargo hook fittings are made of aluminum alloy. The center cargo hook beam is made of aluminum alloy. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS

Figure 1. Cabin Tub Formers and Beams
INSPECTION REQUIREMENTS - continued

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Floor Beams, sta 160 to sta 200, BL 45 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Forward and Aft Cargo Hook Fittings
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Rescue Hatch Beams
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, voids, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Center Cargo Hook Beam Fitting
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, voids, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Rescue Hatch Lower Door Actuator, PN 114S2623-3 and PN 114S2623-6
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, or evidence of corrosion.
   b. Comply with function test by making three complete revolutions of the gearbox output shaft in each direction using crank PN 114E4109-8. Check for operation and leakage. Operating torque shall be constant thru duty cycle. Actuator shall operate smoothly with no binding or rough spots. Wetting of case due to oil seepage at shaft seals is acceptable. Seepage sufficient to cause oil to drip is cause for rejection.
   c. No repairs for these actuators, replace if found unacceptable.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Former, sta 440
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

7. Floor Former, sta 420
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence
      of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Floor Former, sta 400
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence
      of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Floor Former, sta 380
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence
      of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Floor Former, sta 360
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence
        of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

11. Floor Former, sta 340 (LH and RH)
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence
        of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Floor Former, sta 320
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence
        of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

13. Floor Former, sta 300
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence
        of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS - continued

c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

14. Floor Former, sta 280
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

15. Floor Former, sta 260
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

16. Floor Former, sta 240
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

17. Floor Former, sta 220
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

18. Floor Former, sta 200
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

19. Floor Former, sta 180
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

20. Former, sta 160
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delaminations, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

21. Cargo Tie Down Beam, BL 20 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect cargo tie downs and associated hardware for cracks, scratches, nicks, security, or evidence of corrosion.
   d. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

22. Cargo Tie Down Beam, BL 0
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect cargo tie downs and associated hardware for cracks, scratches, nicks, security, or evidence of corrosion.
   d. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

23. Cargo Tie Down Beam, BL 44 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect cargo tie downs and associated hardware for cracks, scratches, nicks, security, or evidence of corrosion.
   d. Refer to WP 0113 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN FLOORING

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:

TM 1-1500-204-23 Series
TM 55-1520-240-23 series
WP 0077 00
WP 0080 00
WP 0114 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cabin flooring extends from sta 120 to sta 486. It consists of twelve similar panels made of extruded aluminum alloy, and a rescue hatch door. A typical panel consists of three extruded sections riveted together and isolator mounts. Raised areas on the extruded section serve as cargo rails. The outboard panel, outboard edges have up-stops. Splice plates are at sta 240 and sta 360 outboard. The rescue hatch door is of sandwich honeycomb construction. The center portion of the flooring is coated with walkway material to provide a nonskid area. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS

Figure 1. Cabin Flooring
INSPECTION REQUIREMENTS - continued

NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Floor Board, sta 120 to sta 486
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect tape faying surfaces on floor structure if cut or torn replace tape.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Inspect isolator mounts for cracks, and deterioration.
   e. Refer to WP 0114 00 for accept/reject criteria and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

2. Rescue Hatch Door
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, delaminations, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect seals for tears, deterioration, and debonding.
   d. Refer to WP 0114 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN TROOP SEATS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 55-1520-240-23 Series
TM 1-1500-204-23 Series
WP 0077 00
WP 0094 00
WP 0096 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cabin troop seats are one-man and three-man seats, constructed of fabric and metal tubing. The fabric for the seat bottom and lower back is nylon. The upper seat back is made of nylon webbing. An adjustable nylon restraint belt is provided for each seat.

INSPECTION REQUIREMENTS

Figure 1. Cabin Troop Seats
NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Seat Frame
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0094 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Seat Fabric and Restraint Belt
   a. Inspect seat bottom, seat back, and restraint belt for cuts, tears, cleanliness, deterioration, discoloring due to contact with foreign matter, and fraying edges.
   b. Refer to WP 0096 00 and TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-240-23 Series
TM 55-1520-240-23 Series
WP 0079 00
WP 0096 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cockpit and cabin acoustic blankets consist of one to three layers of 1/2-inch thick glass wool batting, quilted and bonded together on both sides. The edges and cut outs are trimmed and bonded together to prevent fraying.

INSPECTION REQUIREMENTS

1. Inspect for cuts, tears, and fraying edges.
2. Inspect for cleanliness.
3. Refer to WP 0079 00, WP 0096 00, and TM 55-1520-240-23 for accept/reject criteria and repair procedures.

Figure 1. Acoustic Blankets

Acoustic Blankets (Figure 1, item 1)
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT SECTION EXTERIOR

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-240-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0081 00
WP 0086 00
WP 0097 00
WP 0115 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The aft section exterior skins consist of:
  Crown skins
  Lower pylon leading edge hinged fairing
  LH and RH window pane, framing, and handgrips
  LH and RH aft fairing, sta 555 to sta 575 at WL 0
  LH and RH lower pylon leading edge fixed fairing
  LH and RH drive shaft and engine mechanical transmission fairing
  LH and RH aft pod fairing
  LH and RH access panel installation, sta 440 to sta 460
  LH and RH aft pod assembly, sta 460 to sta 482
  LH and RH aft landing gear access panels
  LH and RH engine inlet fairing
  LH and RH engine covers
  LH and RH engine air inlet screens
  LH and RH engine exhaust pipe

The skin panels are aluminum alloy. Panel splices occur at primary transverse and longitudinal members. The aft gear fairings installation sta 520 to sta 534, BL 52 LH and RH, consists of aluminum alloy skin and formers. The engine access covers and fairings consist of formers, welded assemblies, supports, and skins. The air inlet screens protect the engines from foreign objects. The engine exhaust is expelled through exhaust pipes made of inconel steel. The windowpanes, framing, and handgrips on the aft section are identical to those in the cabin assembly. The aft fairings, LH and RH, sta 555 to sta 575, WL 0, are made of laminated plastic impregnated glass cloth. The lower fixed pylon fairings, sta 440 to sta 482, WL plus 56 to WL plus 72 are laminated plastic impregnated glass cloth. These fairings are riveted to ribs, angles, beams, and gussets made of aluminum alloy. The hinged pylon fairing, sta 440 to sta 475, WL plus 56 to WL plus 72 is made of a non-metallic sandwich honeycomb. Hinges are provided on each side at sta 473, WL plus 72. The drive shaft and engine mechanical transmission fairing extends laterally from the lower pylon leading edge and is hinged along sta 462. The shell assembly and drive shaft coverings are made of 6061-T6 aluminum alloy and is reinforced by angles, formers, and channels. The aft pod fairing and access panel assemblies, LH and RH, sta 440 to sta 460, are sandwich
honeycomb construction, and hinge attached to the structure. The aft pod assemblies LH and RH, sta 460 to sta 482, are of honeycomb construction. The aft landing gear fairings consist of an access pod hinged to the pod fairing. It is made of inner and outer skins riveted to five formers and a pod work platform. The formers are made of aluminum alloy and the work platform is sandwich honeycomb. Refer to WP 0080 00 for sealing requirements.

**INSPECTION REQUIREMENTS**

![Diagram of aft section exterior](MS022488)

**Figure 1. Aft Section Exterior**

**NOTE**

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Lower Pylon Leading Edge Fixed Fairing (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), delamination, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

2. Lower Pylon Leading Edge Hinged Fairing
   a. Inspect for dents, cracks (no cracks allowed), delamination, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Drive Shaft and Engine Mechanical Transmission Fairing (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Engine Inlet Screens (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Engine Covers (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Engine Exhaust Pipes (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Engine Inlet Fairings (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Crown Skin (LH and RH), sta 440 to sta 594, WL plus 47 to WL plus 72
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Engine Mount Fairings, (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS - continued

c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Aft Fairing (LH and RH), sta 555 to sta 575, WL 0
   a. Inspect for dents, cracks (no cracks allowed), delamination, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.
e. Refer to WP 0081 00 for hand grips accept/reject criteria and repair procedures.

11. Fairing Installation (LH and RH), sta 520 to sta 534, BL 52
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Aft Landing Pod Fairing and Work Platform (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

13. Aft Landing Gear Pod Assembly (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

15. Aft Pod Assembly, sta 460 to sta 482 (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS – continued

16. Aft Pod and Access Panel Assembly, sta 440 to sta 460, (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0115 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

17. Window Panes, Framing, and Hand Grips (LH and RH)
   a. Inspect windows for cracks, crazing, nicks, pitting, and scratches; replace if cracked, pitted, or crazed.
   b. Inspect window frame for dents, nicks, cracks (no cracks allowed), scratches, or evidence of corrosion.
   c. Inspect handgrips for cracks, separation, chafed and frayed areas.
   d. Inspect frames for loose, missing, or damaged attaching hardware.
   e. Refer to WP 0097 00 for windows and window frames accept/reject criteria and repair.
   f. Refer to WP 0081 00 for hand grips accept/reject criteria and repair procedures.
   g. Refer to WP 0077 00 for corrosion removal and treatment.

18. Side Skins (LH and RH), sta 440 to sta 594, WL minus 40 to WL plus 47
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT SECTION FRAMES, STRINGERS, AND BEAMS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 1-1500-335-23
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0087 00
WP 0116 00
WP 0117 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The aft section, sta 440 to sta 594, consists of formers, stringers, beams, longerons, and equipment support structures. The side and crown stringers are extruded aluminum alloy sections riveted longitudinally to the sides and crown of the structure through finger plates. There are nine formers of various configurations and consist of inner and outer caps, and webs. The former at sta 482 has forward engine mount support fittings and landing gear fittings as integral parts. The former at sta 502 has aft engine mount support fittings located between the crown and side sections. The formers at sta’s 440, 460, 482, 502, 520, 534, and sta 594 consist of inner and outer caps and webs. The formers at sta 555 and sta 575 and crown former at sta 460 are of formed web construction. Beams are located on each side of the aircraft; one between sta 440 and sta 555, WL 0 and the other between sta 440 and sta 575, WL plus 29. Crown beams are located between sta 440 and sta 627, BL 42L&R, sta 440 to sta 482, BL 20R and BL 11L. The aft drive shaft support beam is located between sta 482 and sta 534, WL plus 56. The LH and RH lower canted beams are located between sta 482 and sta 594, BL 50 L&R. The longerons, located between sta 444 and sta 594, BL 45 L&R, are aluminum alloy extrusions. Refer to WP 0080 00 for sealing requirements.
Figure 1. Aft Section Frames, Stringers, and Beams

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Crown Beam, BL 20R and BL 11L, sta 440 to sta 482
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0117 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Crown Former, sta 482
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS - continued

c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Aft Drive Shaft Support Beam, sta 482 to sta 534, WL plus 56
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0117 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Forward Engine Mount Fitting, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0118 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.
e. Refer to WP 0117 00 for accept/reject criteria and repair procedures.

5. Crown Beam LH and RH, sta 440 to sta 627
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0117 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.

d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Aft Engine Mount Fitting, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. NDI mounting bolt surfaces and entire exterior area per TM 1-1500-335-23.
d. Refer to WP 0118 00 for accept/reject criteria and repair procedures.
e. Refer to WP 0077 00 for corrosion removal and treatment.

7. Crown Former, LH and RH, sta 594
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Crown Former, LH and RH, sta 575
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Crown Former, LH and RH, sta 555
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

10. Crown Former, sta 534  
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.  
   b. Inspect for loose, missing, or damaged attaching hardware.  
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.  
   d. Refer to WP 0077 00 for corrosion removal and treatment.

11. Side Former, LH and RH, sta 594  
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.  
   b. Inspect for loose, missing, or damaged attaching hardware.  
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.  
   d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Side Former, LH and RH, sta 575  
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.  
   b. Inspect for loose, missing, or damaged attaching hardware.  
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.  
   d. Refer to WP 0077 00 for corrosion removal and treatment.

13. Crown Former, LH and RH, sta 502  
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.  
   b. Inspect for loose, missing, or damaged attaching hardware.  
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.  
   d. Refer to WP 0077 00 for corrosion removal and treatment.

14. Stringers, sta 440 to sta 594  
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.  
   b. Inspect for loose, missing, or damaged attaching hardware.  
   c. Refer to WP 0087 00 and WP 0088 00 for accept/reject criteria and repair procedures.  
   d. Refer to WP 0077 00 for corrosion removal and treatment.

15. Side Formers, LH and RH, sta 555  
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.  
   b. Inspect for loose, missing, or damaged attaching hardware.  
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.  
   d. Refer to WP 0077 00 for corrosion removal and treatment.

16. Beam, LH and RH, sta 440 to sta 575, WL plus 29  
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.  
   b. Inspect for loose, missing, or damaged attaching hardware.  
   c. Refer to WP 0117 00 for accept/reject criteria and repair procedures.  
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

17. Side Formers, LH and RH, sta 534
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

18. Beam, LH and RH, sta 440 to sta 555, WL 0
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0117 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

19. Side Formers, LH and RH, sta 520
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

20. Side Former, LH and RH, sta 502
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

21. Side Formers, LH and RH, sta 482
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

22. Side Former, LH and RH, sta 460, WL 0 to WL minus 30
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

23. Side Formers, LH and RH, sta 440
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0116 00 and TM 55-1520 240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

24. Longeron, LH and RH, sta 444 to sta 594, BL 45
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS - continued

   c. Refer to WP 0087 00 and WP 0088 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

25. Crown Former, sta 460, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0116 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

26. Crown Former, sta 440
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0116 00 and TM 55-1520 240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

27. Combiner Drip Pan, LH web, RH web, center web, and drain pan
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0117 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

28. Combiner Transmission Longitudinal Support Beam, LH and RH, sta 440 to sta 482
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. NDI top and sides of entire beam, sta 440 to sta 482, per TM 1-1500-335-23.
   d. Refer to WP 0117 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

29. Combiner Support Mount Fittings, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. NDI bolt pad surfaces top and bottom, per TM 1-1500-335-23.
   d. Refer to WP 0117 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

30. Lower Canted Beam, LH and RH, sta 482 to sta 594
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect ramp seal and retainer for cracks, tears, deterioration, or evidence of corrosion.
   d. Refer to WP 0117 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
# DEPOT MAINTENANCE WORK REQUIREMENT

## CH-47D HELICOPTER

## AFT SECTION TUB ASSEMBLY

### INITIAL SETUP

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<td>Tools and Special Tools:</td>
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<td>Material/Parts:</td>
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<td>Personnel Required:</td>
<td>Examiner (PSA)</td>
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### References:

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<td>WP 0086 00</td>
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<tr>
<td>WP 0088 00</td>
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<td>WP 0119 00</td>
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</tbody>
</table>

### Equipment Conditions:

| As Required |

### Special Environmental Condition:

| As Required |

### SCOPE

The aft section tub assembly, sta 440 to sta 482, WL minus 30 to WL minus 40, consists of three floor formers, landing gear drag beams, skin, stringers, ramp hinge tunnel installation, ramp hinges, and aft landing gear trunnion fittings. The bottom and side skins, sta 440 to sta 482, are made of aluminum alloy. The stringers are extruded sections riveted longitudinally to the structure. The ramp hinge installation, sta 478 to sta 495, WL minus 30, BL 45L to BL 45R, consists of a finger plate, a floor panel assembly of sandwich honeycomb construction, two web assemblies, and a double hinge assembly. The ramp hinges, sta 482 to sta 495, are aluminum alloy. The landing gear trunnions at sta 485 are made of aluminum alloy. Refer to WP 0080 00 for sealing requirements.
NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Aft Landing Gear Trunnion Fittings, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. NDI trunnion fittings per TM 1-1500-335-23.
   d. Refer to WP 0119 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS – continued

2. Side and Bottom Skins
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0086 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Ramp Hinges
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0119 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Ramp Hinge Tunnel Installation
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0119 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Ramp Tunnel Panel Assembly
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0119 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Floor Former, sta 482
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0119 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Landing Gear Drag Beam, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0119 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Floor Former, sta 460
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0119 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

9. Floor Former, sta 440
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence
      of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0119 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Side and Bottom Stringers
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0086 00 for skin accept/reject criteria and repair procedures.
    d. Refer to WP 0087 00 or WP 0088 00 for stringer accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
TAIL CONE ASSEMBLY

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0120 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The tail cone extends from sta 594 to sta 630. The tail cone is made of formed aluminum skins, lapped and riveted to internal formers made of aluminum alloy channels to maintain the skin shape. A deck, consisting of two outboard webs made of aluminum alloy formed channels and an exhaust plenum is located between sta 594 and sta 630, WL plus 59 to WL plus 72. Another deck at WL plus 72 consists of a web and formed sections made of aluminum alloy. The upper APU mount supports are attached to the bottom of the plenum between sta 612 and sta 618. The right APU mount supports are located from sta 606 to sta 612, WL plus 50. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS

Figure 1. Tail Cone Assembly
NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Tail Cone Channels, sta 594 to sta 630, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Tail Cone Deck, WL plus 72
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Tail Cone Plenum
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Formers, sta 599 to sta 617 LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Tail Cone APU Mount Supports
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Tail Cone Deck, sta 594 to sta 630, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Tail Cone Skin, sta 594 to sta 630, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS - continued

c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Longeron, sta 594 to sta 630, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Tail Cone Formers, sta 617 to sta 625
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Aft Web (center)
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0120 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
SCOPE

The cargo door coaming assembly is riveted to the aft section from sta 575 to sta 630 and consists of seals, coamings, formers, strip bonder, and seal clamps. The coaming, LH and RH, is made of plastic impregnated glass cloth. The formers at sta 594 are formed aluminum alloy. The seals are made of rubber. The seal clamps are aluminum alloy. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS
INSPECTION REQUIREMENTS - continued

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Coaming, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, wear, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0121 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Seals and Clamps, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0121 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Formers, sta 575 LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0121 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT TRANSMISSION DRIP PAN

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0122 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The aft transmission drip pan installation is located between sta 534 and sta 594, WL plus 48. It consists of a 2-ply laminated plastic impregnated glass cloth pan and a support made of aluminum alloy.

INSPECTION REQUIREMENTS

Figure 1. Aft Transmission Drip Pan
INSPECTION REQUIREMENTS - continued

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Drip Pan and Baffles
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, and delamination.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0122 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Drain
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, and delamination.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0122 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Support Assemblies, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0122 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
APU DRIP PAN ASSEMBLY

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0123 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The APU drip pan consists of a drip tray assembly and support arm assembly, LH and RH, sta 594 to sta 625. The drip tray is made of plastic impregnated glass cloth. The support arms are made of aluminum alloy.

INSPECTION REQUIREMENTS

Figure 1. APU Drip Pan Assembly
INSPECTION REQUIREMENTS - continued

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Drip Tray Support Arms, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, chafing, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0123 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Drip Tray Assembly
   a. Inspect for dents, cracks (no cracks allowed), delamination, gouges, nicks, holes, and wear.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0123 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT  
CH-47D HELICOPTER  
CARGO RAMP EXTERIOR

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0093 00
WP 0124 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cargo ramp exterior consists of aluminum alloy bottom skin panels, ramp sta 0 to ramp sta 38, and a composite honeycomb panel, ramp sta 38 to ramp sta 99. The side and top skins outboard of the ramp, BL 44 L & R, are made of aluminum alloy. Three strakes are located on the bottom of each side and are made of aluminum alloy. An aluminum piano type hinge is attached to the ramp at ramp sta 0. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS

Figure 1. Cargo Ramp Exterior
NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Strake (LH and RH), Nose, Center, and Tail
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0124 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Bottom Skin (Composite Panel), ramp sta 38 to ramp sta 99, BL 44L to BL 44R
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, or delamination.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0124 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Bottom Skins, ramp sta 38 to ramp sta 99, BL 44 to BL 60 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0124 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Top Skin, ramp sta 38 to ramp sta 99, BL 44 to BL 60 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0124 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Cap, ramp sta 50 to ramp sta 99, BL 60 to BL 53 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0124 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Hinge Assembly, ramp sta 0
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0093 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS – continued

7. Bottom Skin, ramp sta 0 to ramp sta 38, BL 44L to BL 44R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0124 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CARGO RAMP INTERIOR

INITIAL SETUP
Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0125 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE
The cargo ramp interior consists of formers, beams, and a gate assembly. The formers are transverse members and are two types of construction. The formers at ramp sta 0 and ramp sta 99 are formed aluminum webs, aluminum cap angles, and stiffeners. The remaining formers are made of sandwich honeycomb construction. The beams are made of aluminum alloy webs with extruded caps and stiffeners. Two (full length) beams are installed laterally at ramp sta 24 and ramp sta 53 between BL 20 and BL 44 L & R. The other beams, including the tie down beams, are installed longitudinally at BL 20, BL 44, and BL 48 L & R. Forged aluminum attachment fittings are located on longitudinal beams, ramp sta 0, BL 20 and BL 44, L & R. Five beams are installed forward from ramp sta 0 to ramp sta 10 on each side of the cargo ramp centerline at BL 4, BL 11, BL 15, BL 29, and BL 36. Three aft beams are installed longitudinally from ramp sta 84 to ramp sta 99, BL 0 and BL 15 L & R. The gate assemblies (3 ea) consist of aluminum alloy formed channels and brackets, rollers, and hinges. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS

![Figure 1. Cargo Ramp Interior](MS022496)

Figure 1. Cargo Ramp Interior
INSPECTION REQUIREMENTS - continued

NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Former, ramp sta 10, BL 48 L to BL 48 R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Former, ramp sta 38, BL 48L to BL 48R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Gate Assembly, ramp sta 68, BL 44L to BL 44R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Former, ramp sta 68, BL 48L to BL 48R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Beam, ramp sta 84 to ramp sta 99, BL 15L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Former, ramp sta 99, BL 50L to BL 50R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

7. Beam, ramp sta 84 to ramp sta 99, BL 0
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Beam, ramp sta 0 to ramp sta 99, BL 20L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect cargo door tracks L & R for cracks (no cracks allowed) and wear.
   d. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

9. Former, ramp sta 84, BL 48L to BL 48R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Former, ramp sta 87, BL 48 to BL 54 L & R
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

11. Beam, ramp sta 53, BL 20 to BL 44 L & R
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Former, ramp sta 68, BL 48 to BL 59 L & R
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

13. Former, ramp sta 61, BL 48 to BL 62 L & R
    a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

14. Former, ramp sta 53, BL 48 to BL 64 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

15. Former, ramp sta 38, BL 48 to BL 48 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

16. Former Actuator Support, ramp sta 26, BL 44 to BL 48 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for worn and damaged bushings. Replace bushing if exceeds limits.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

17. Beam, ramp sta 24, BL 20 to BL 44 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

18. Beam, ramp sta 0 to ramp sta 99, BL 48 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

19. Beam, ramp sta 0 to ramp sta 99, BL 44 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

20. Beam, ramp sta 0 to ramp sta 10, BL 36 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

21. Beam, ramp sta 0 to ramp sta 10, BL 28 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

22. Ramp Attach Fittings, ramp sta 0, BL 20 and BL 40 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect fittings for worn and damaged bushings. Replace bushing if exceeds limits.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

23. Beam, ramp sta 0 to ramp sta 10, BL 15 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

24. Beam, ramp sta 0 to ramp sta 10, BL 11 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

25. Beam, ramp sta 0 to ramp sta 10, BL 4 L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

26. Former, ramp sta 0, BL 49L to BL 49R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0125 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CARGO RAMP FLOORING AND AUXILIARY LOADING RAMPS

INITIAL SETUP

Test Equipment: As Required
Tools and Special Tools: As Required
Material/Parts: As Required
Personnel Required: Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0126 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cargo ramp flooring consists of four sections, the forward edge, center section, and two outboard sections. The forward edge, attached to the ramp at ramp sta 10 is an extruded section of magnesium alloy and serves as a bearing surface during operation of the ramp. The center section extends from ramp sta 10 to ramp sta 99, BL 20L & R. The outboard sections, ramp sta 10 to ramp sta 99, extend from BL 20 to BL 44L & R. These sections are aluminum extrusions riveted together. The three auxiliary cargo-loading ramps consist of a hinged assembly and structural members. The auxiliary ramps are hinged to the aft former of the ramp. The hinge and structural members are made of aluminum alloy extrusions. Refer to WP 0080 00 for sealing requirements.

INSPECTION REQUIREMENTS

Figure 1. Cargo Ramp Flooring and Auxiliary Loading Ramps

0035 00-1
NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Auxiliary Ramp (3 ea, hinged)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect hinge assemblies for cracked or missing loops, broken or missing springs, or evidence of corrosion.
   d. Refer to WP 0126 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

2. Floor Board, (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0126 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Forward Edge, ramp sta 10
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0126 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Center Floor Board
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0126 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CARGO RAMP DOOR BONDED ASSEMBLY

<table>
<thead>
<tr>
<th>INITIAL SETUP</th>
<th>References:</th>
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<tbody>
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<tr>
<td>As Required</td>
<td>TM 55-1520-240-23 Series</td>
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<td>WP 0077 00</td>
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<td>WP 0080 00</td>
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<tr>
<td>Material/Parts:</td>
<td>WP 0088 00</td>
</tr>
<tr>
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<td>Equipment Conditions:</td>
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<tr>
<td>Examiner (PSA)</td>
<td>As Required</td>
</tr>
</tbody>
</table>

| Special Environmental Condition: |
| As Required |

**SCOPE**

The cargo ramp door bonded assembly is made of sandwich honeycomb construction. A silicon rubber seal is attached to the edge of the door to prevent entrance of water. The escape hatch door is made of aluminum alloy inner and outer skins. The inner skin is dished around cutouts and is spot-welded to the outer skin. The spacers located aft inboard are made of extruded material. The support assemblies are made of aluminum extrusions. A release mechanism is provided for emergency removal of the cargo ramp door. Refer to WP 0080 00 for sealing requirements.

**INSPECTION REQUIREMENTS**

Figure 1. Cargo Ramp Door Bonded Assembly
INSPECTION REQUIREMENTS - continued

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Cargo Ramp Door
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0127 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Spacers
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect pads for looseness, cuts, and tears.
   d. Refer to WP 0088 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. Cargo Ramp Door Seals
   a. Inspect seal for cracks and tears, gouges and disboding.
   b. Inspect seal retainer for cracks and corrosion.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0127 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. Escape Hatch Door Assembly
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect seal for cracks, tears, gouges and disboding.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0127 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. Emergency Release Mechanism
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment
INSPECTION REQUIREMENTS - continued

6. Support Assemblies
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT PYLON EXTERIOR

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0128 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The aft pylon exterior consists of skins, leading edge hinged fairings, forward crown fairings, mid-crown fairing, aft crown, hinged fairings (work platforms), trailing edge fairings, and a weather protective cover. The exterior skins are aluminum alloy panels. Panel splices occur at locations of primary transverse and longitudinal members. The leading edge hinged fairing located forward at sta 482 consists of sandwich honeycomb composite skins. Formed sections and vertical stiffeners maintain skin shape. The forward crown fairing is fitted to the aft pylon structure aft of the leading edge hinged fairing, sta 481 to sta 534. This fairing consists of formers, beams, hinges, channels, stiffeners, and doublers. The mid-crown fairing forms the fuselage contour around the vertical shaft assembly. This fairing consists of a LH and RH assembly made of molded laminated plastic impregnated glass cloth to which aluminum alloy Zee sections are attached. The aft crown fairing consists of skins riveted to stiffeners and extruded sections. The pylon section work platforms are made of sandwich honeycomb construction. Fittings are bolted to each side for attachment of the support cables. The trailing section consists of aluminum skins riveted to stiffeners and extruded sections. The top skin is made of plastic impregnated glass cloth. The aft weather protective cover is made of sandwich honeycomb and aluminum stiffeners. Refer to WP 0080 00 for sealing requirements.
NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Weather Protective Cover, Aft
   a. Inspect for dents, cracks (no cracks allowed), gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Aft Crown Fairing
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS - continued

c. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

3. Trailing Edge Fairing
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

4. Hinged Fairings (work platforms), LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, latch mechanism for proper operation, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Door Assembly, sta 555 to sta 576, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

6. Door Assembly, sta 502 to sta 534, LH and RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Aft Pylon Skin Sections, sta 482 to sta 594, WL plus 72 to WL plus 122, L & R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Leading Edge Hinged Fairings (clamshell)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, latch mechanism for proper operation, or evidence of corrosion.
   b. Inspect support struts, straps, fasteners and receptacles, improved cowl latch and clamp support strap for cracks, gouges, scratches, holes, or evidence of corrosion.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
e. Refer to WP 0077 00 for corrosion removal and treatment.

9. Forward Crown Fairing
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS - continued

c. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

10. Mid-Crown Fairing
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, delamination, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0128 00 for accept/reject criteria and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT PYLON INTERIOR

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 1-1500-335-23
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0129 00
WP 0147 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The aft pylon interior has three decks located longitudinally at WL plus 72, WL plus 91, and WL plus 119 (canted), four full formers, sta's 482, 534, 576, and 594, three partial formers, sta's 502, 517, and 555, and two beams, sta 534 to sta 575, BL 18 L & R. Stringers are formed or extruded sections riveted longitudinally to the side panels of the structure. Aft swiveling actuator support, RH, aft pivoting actuator supports, LH, and LH and RH bellcrank supports are made of aluminum alloy. The aft yoke assembly fitting is located at sta 534, WL plus 119. The lower deck, WL plus 72 consists of webs with extruded caps riveted to the outboard edges. The caps serve as primary members in the aft pylon structure for the aft fuselage structure splice. Formed and extruded sections are riveted across the webs. Extruded channels reinforce the cutouts. The transmission torque fittings are attached to channels. The mid deck, WL plus 91, consists of two webs, LH and RH, reinforced on their inboard and outboard edges with formed extruded sections. The upper deck, WL plus 119 (canted), contains six webs having extruded caps riveted to the outboard edges. The deck is stiffened with formed and extruded sections. The formers consist of one or more webs. The webs are reinforced with extruded angles. Tee and Zee sections with formed channels are attached horizontally and vertically to the webs. The aft pylon beams are thrust bearing support members and consist of webs reinforced with extrusions, former angles and stiffeners. Refer to WP 0080 00 for sealing requirements.
NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Deck, WL plus 119
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

2. Yoke Assembly Fitting (Beam), WL plus 119
   a. Inspect beam and channels for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

3. Swiveling Actuator Support, RH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. NDI mount bolt lugs and surrounding area per WP 0147 00.
   d. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. Beam, BL 18L and BL 18R
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

5. Pivoting Actuator Supports LH
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. NDI mount bolt lugs and surrounding area per WP 0147 00.
   d. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

6. Former, sta 594
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

7. Aft Bellcrank Support, (LH and RH)
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

8. Former, sta 576
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

9. Deck, WL plus 91
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

10. Former, sta 555
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

11. Former, sta 534
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Former, sta 518
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

13. Deck WL plus 72
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

14. Former, sta 502
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

15. Former, sta 482
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

16. Aft Pylon Stringers, sta 482 to sta 594
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, holes, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0129 00 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FOREWARD AND AFT LANDING GEAR ASSEMBLIES

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DMWR 55-1620-208
DMWR 55-1620-224
DMWR 55-1620-225
TM 1-1500-204-23 Series
TM 1-1500-335-23
TM 55-1500-322-24
TM 55-1520-240-23 Series
TM 55-2620-200-24
WP 0077 00
WP 0080 00
WP 0129 00
WP 0147 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The forward landing gear dual wheels are installed on a fixed axle. The axle is mounted on an air-oil shock strut bolted to the fuselage support structure. A torque arm keeps the assembly aligned. A disk brake unit is provided for each wheel. Hinged panels allow access to the forward landing gear assemblies. Each assembly has a tow and tiedown fitting. The wheels can be raised at jacking points on the lower torque arms. Left and right landing gear assemblies can be converted for use in either forward position.

An aft landing gear assembly is installed on each side of the fuselage. Each aft wheel is mounted on an axle supported by a spindle. The spindle rides on bearings in the swivel housing. Upper and lower drag links support the swivel housing. Both drag links are connected to fuselage fittings. A shock strut is mounted between the lower drag link and a fuselage fitting. The shock strut has a static lock mechanism to prevent strut extension during helicopter jacking. A disk brake unit is installed on each wheel. The aft wheels are free to swivel, or they can be locked in the trail position. A centering cam in the swivel housing centers each wheel in the trail position. A hydraulically operated swivel lock secures the wheel in the trail position. The power steering actuator is connected to the aft right landing gear swivel housing. A tow and tie down fitting is also attached to this housing. Static ground wires are installed on each landing gear axle housing. A proximity switch is mounted on the forward bulkhead of each aft landing gear compartment. Linkage from the upper drag link is connected to a target, which is sensed by each switch. The switches operate as the aft landing gear struts extend or retract during take off or landing. Extensions on the aft axles are used for connecting a tow bar. An aft landing gear assembly can be installed on either side of the helicopter. This requires disassembly and repositioning of certain components.
INSPECTION REQUIREMENTS

NOTE

The items in Figure 1 correspond to the respective item numbers in FORWARD LANDING GEAR ASSEMBLY INSPECTION REQUIREMENTS.

FORWARD LANDING GEAR ASSEMBLY INSPECTION REQUIREMENTS

1. Forward Landing Gear Tire
   Inspect, repair, and replace tires per TM 55-1520-240-23 and TM 55-2620-200-24

2. Forward Landing Gear Shock Strut

NOTE

   Procedures are the same for all shock struts.

a. Inspect shock strut (left and right) for fluid leaks around seals and ports.
b. Inspect exposed piston for surface nicks, scratches, scoring, and cracks (no cracks allowed).
c. Inspect main landing gear shock strut (left and right) attachment points for distortion, wear, and general condition of spherical bearings.
d. Refer to WP 0077 00 for corrosion removal and treatment.
e. Refer to TM 55-1520-240-23 for accept/reject criteria.
f. Repair per DMWR 55-1620-208 when authorized by the Contracting Officer.
FORWARD LANDING GEAR ASSEMBLY INSPECTION REQUIREMENTS - continued

3. Torque Arm
   a. Inspect torque arm for cracks (no cracks allowed) and/or excessive play.
   b. Inspect bushings for damage or wear.
   c. NDI torque arm per TM 1-1500-335-23.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.

4. Main Landing Gear Axle

   NOTE
   Procedures are the same for all axles.
   a. Inspect axle for cracks (no cracks allowed), bends, wear, and scratches.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.

5. Forward Landing Gear Wheel Assembly
   a. NDI wheel halves for cracks (no cracks allowed) and structural damage per TM 1-500-335-23. Pay particular attention to bead seat, bolt boss, and valve hole areas. Replace wheel half if any crack is present. Repair minor damage per TM 55-1520-240-23.
   c. Inspect drive keys for wear per TM 55-1520-240-23.
   d. Inspect all threads for cleanliness and condition.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

6. Forward Landing Gear Brake Assembly

   NOTE
   Procedures are the same for all brakes.
   a. Inspect housing for cracks (no cracks allowed).
   b. Inspect housing cylinder walls for wear or scoring.
   c. Inspect bolts for stripped threads.
   d. Inspect brake disk for thickness.
   e. Measure width of key slots.
   f. Inspect brake disk for distortion.
   g. Measure distance between brake housing and disk.
   h. Inspect tube, fittings, and forward brake hose for leaks and damage.
   i. Inspect brake lining for thickness.
   j. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.
AFT LANDING GEAR ASSEMBLY

Figure 2. Aft Landing Gear

NOTE

The items in Figure 2 correspond to the respective item numbers in AFT LANDING GEAR ASSEMBLY INSPECTION REQUIREMENTS.

AFT LANDING GEAR ASSEMBLY INSPECTION REQUIREMENTS

1. Aft Landing Gear Swivel Housing
   a. Inspect aft landing gear swivel housing for cracks (no cracks allowed), distortion, scratches, nicks, scoring, pitting, leaks, and damaged threads.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.

2. Aft Landing Gear Power Steering Actuator
   a. Inspect aft landing gear power steering actuator for cracks (no cracks allowed), nicks, dents, scratches, leaks, or evidence of corrosion.
   b. Inspect electrical connector for bent or missing pins, or evidence of corrosion.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria.
   d. Repair per DMWR 55-1620-224 when authorized by the Contracting Officer.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. Aft Landing Gear Swivel Lock Actuator
   a. Inspect aft landing swivel actuator for cracks (no cracks allowed), distortion, scratches, nicks, scoring, leakage, and pitting.
AFT LANDING GEAR ASSEMBLY INSPECTION REQUIREMENTS - continued

b. Replace all preformed packing, packing retainers, cotter pins, and retainer ring.
c. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.

4. Aft Landing Gear Brake Assembly
   Refer to Forward Landing Gear Brake Assembly paragraph above for inspection procedures.

5. Aft Landing Gear Axle.
   Refer to Forward Landing Gear Axel paragraph above for inspection procedures.

6. Aft Landing Gear Spindle
   a. Inspect aft landing gear spindle for cracks (no cracks allowed), distortion, scratches, nicks, scoring, pitting, and damaged thread.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.

7. Aft Landing Gear Wheel Assembly
   Refer to Forward Landing Gear Wheel Assembly paragraph above for inspection procedures.

8. Aft Landing Gear Tires
   Refer to Forward Landing Gear Tire paragraph above for inspection procedures.

9. Aft Landing Gear Lower Drag Link
   a. Inspect fulcrum pin and trunnion pin for distortion, cracks (no cracks allowed), nicks, scoring, or damaged thread.
   b. Inspect washers and bushings for cracks (no cracks allowed), scratches, nicks, scoring, or pitting.
   c. Inspect instruction plate for damage and legibility.
   d. Inspect bolt for distortion, cracks (no cracks allowed), nicks, scoring, or damaged threads.
   e. Inspect shock strut attachment spacer and static lock spacer for cracks, distortion, scratches, nicks, scoring, or pitting.
   f. Inspect fitting and retainer for cracks (no cracks allowed), scratches, scoring, or damaged thread.
   g. Inspect static lock mechanism and fork for cracks or distortion.
   h. Inspect bearing and bushings for cracks (no cracks allowed), scratches, nicks, or scoring.
   i. Inspect link for cracks (no cracks allowed), scratches, nicks, scoring, or excessive play.
   j. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.

10. Aft Landing Gear Upper Drag Link
    a. Inspect bushing and bearings for excessive play and that bearings are seated (not popped), cracks (no cracks allowed), scratches, nicks, and scoring. Refer to TM 1-1500-204-23 for accept/reject criteria.
    b. Inspect drag link for cracks (no cracks allowed), distortion, gouges, and nicks.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.

11. Static Lock Mechanism
    a. Inspect lock mechanism for cracks (no cracks allowed), nicks, gouges, scratches, distortion, or evidence of corrosion.
    b. Refer to WP 0077 00 for corrosion removal and treatment.
    c. Refer to TM 55-1520-240-23 for accept/reject criteria, repair, and replacement procedures.
AFT LANDING GEAR ASSEMBLY INSPECTION REQUIREMENTS - continued

12. Aft Landing Gear Shock Strut
   a. Refer to Forward Landing Gear Shock Strut paragraph above for inspection procedures.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria.
   c. Repair per DMWR 55-1620-225 when authorized by the Contracting Officer.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
POWERPLANTS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DMWR 55-2840-254
DMWR 55-2995-107
DMWR 55-2995-108
TM 1-1500-204-23 Series
TM 1-2840-265-23
TM 55-1520-240-23 Series
TM 55-2840-254-23
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

Two T55-L-712 or two T55-GA-714 powerplant assemblies, one mounted to each side of the pylon, supply torque to power the drive and rotor systems. Each powerplant includes a starter, fuel and hydraulic lines, and electrical wiring. Quick disconnect couplings at the fuselage allow for ease in changing powerplants.
INSPECTION REQUIREMENTS

Figure 1. Powerplant

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Powerplant
   b. Inspect engines, T55-GA-714, per TM 1-2840-265-23.
INSPECTION REQUIREMENTS - continued

2. Hydraulically Powered Starter
   a. Inspect hydraulically powered starter for cracks (no cracks allowed), nicks, dents, leakage, or evidence of corrosion.
   b. Starter P/N 114HS200-4 and P/N 420078 - refer to TM 55-1520-240-23 for corrosion removal and treatment, accept/reject criteria. Repair per DMWR 55-2995-108 when authorized by the Contracting Officer.
   c. Starter P/N 114HS200-5 and P/N 53WK16008 - refer to TM 55-1520-240-23 for corrosion removal and treatment, accept/reject criteria. Repair per DMWR 55-2995-107 when authorized by the Contracting Officer.

3. Electrical Harnesses
   a. Inspect electrical harnesses for evidence of fraying, chafing, overheating, cracking, and looseness.
   b. Inspect all electrical connectors for security and evidence of corrosion.
   c. T55-L-712 engines - refer to TM 55-2840-254-23 for accept/reject criteria.
   d. T55-GA-714 engines - refer to TM 1-2840-265-23 for accept/reject criteria.
   e. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and connector inspection and repair criteria.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

4. Engine Air and Oil Lines, Tubes, and Hoses
   a. Inspect engine air and oil lines, tubes, and hoses for evidence of leakage, cracks (no cracks allowed), or evidence of corrosion.
   b. Inspect for missing, loose, or damaged attaching hardware.
   c. T55-L-712 engines - refer to TM 55-2840-254-23 for accept/reject criteria.
   d. T55-GA-714 engines - refer to TM 1-2840-265-23 for accept/reject criteria.
   e. Refer to WP 0003 00, Tables 2 and 3, for all tubing and hose inspection and repair criteria.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
ROTARY-WING BLADES

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0077 00
WP 0080 00
WP 0129 00
WP 0147 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The rotary-wing blades are composite structures. They consist of a D-shaped fiberglass spar, a titanium nose cap, two composite pads, socket liner, shock absorber bracket, and nomex/fiberglass fairing bonded to the spar. The blades are tracked and balanced using the Aviation Vibration Analyzer. Lengthening or shortening the pitch links, bending the trim tab, or adding or removing balance weights are tasks which will adjust the blade track and balance. The spar is made up of center and wrap-around unidirectional straps. The wrap-around straps are continuous elements. They start at the blade tip, wrap around the vertical pin bore, and return to the tip. Several layers of cross-ply fiberglass cover the straps. These help to prevent twisting. Kevlar filament windings secure the shock absorber bracket to the spar. A replaceable composite sleeve lines the vertical pin bore. The nose of the spar is formed around a permanent balance weight. Tubes are provided at the tip end of the spar for tracking weights.

The spar root end pads, socket liner, and shock absorber bracket, made of fiberglass composite are bonded to the spar.

The titanium leading edge is bonded to the spar. A nickel erosion cap is bonded over the outboard 54 inches of the spar leading edge. The replaceable erosion cap protects that part of the blade most easily damaged by the elements.

The fairing is a nomex honeycomb covered by a fiberglass skin. Core and skin are bonded to the spar at the leading edge of the core. A wedge of fiberglass reinforces the core along its entire trailing edge. Lightning protection is provided by wire mesh positioned at intervals within the skin. A rubber rib at the inboard end and sealant at the tip end close the fairing.

Each blade has tracking and balance weights installed in the tip. The weights are accessible by removal of the cover plate. A maximum of 10 balance weights are attached to the inside of each cover plate. These weights are added or removed for balancing. The tracking weights are located in capped tubes behind the cover plate. Three tubes are in the leading edge of the spar. Two tubes are positioned at the aft end of the spar. Weights are moved to compensate for the weight of blade repairs. Targets are installed on the cover plate for blade tracking.
SCOPE - continued

Wire mesh is installed near the surface of the skin for lightning protection. The mesh extends to the trailing edge of the blade at the trim tab and at the tip. The mesh goes to the nose cap, and provides an electrical path to the jumper wire at the top and bottom inboard end of the blade spar. The jumper wires are connected to the oil manifold tube on the pitch housing.

The rotor blade trim tab is set at the factory. Rotor track is adjusted by bending the trim tab.

INSPECTION REQUIREMENTS

NOTE

The item numbers in Figure 1, sheets 1 and 2, correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Rotary-Wing Blades (Sheet 1 of 2)

Blade Assembly, Rotary Wing (CSI – WP 0160 00)

1. Pads, Spar Root End
   a. Inspect pad for cracks (no cracks allowed), scratches, nicks, and delaminations.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Liner, Spar Root End
   a. Inspect the liner for cracks (no cracks allowed), scratches, nicks, and delaminations
   b. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

3. Blade Spar Root
   a. Inspect for cracks, dents, delamination, burns, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Lightning Protection
   a. Inspect for frayed jumper wire, burned areas, pits, cracks, or evidence of corrosion.
   b. Inspect lightning jumper strip for debonding, burnt areas, cracks, or evidence of corrosion.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Titanium Nose Cap
   a. Inspect for voids, nicks, chafing, dents, burns, and pitting.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Nickel Erosion Cap
   a. Inspect for voids, nicks, chafing, dents, burns, and pitting.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Trim Tab
   a. Inspect for cracks, voids, dents, bending, chafing, burns, and pitting.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Fairing and Wire Mesh
   a. Inspect for voids, punctures, nicks, dents, scratches, and burns.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

9. Bracket, Shock Absorber
   a. Inspect the bracket for cracks (no cracks allowed), scratches, nicks, or delamination.
   b. Inspect bushing for nicks, scratches, wear, or evidence of corrosion.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/eject criteria and repair procedures.
10. Tracking and Balance Weights
   a. Inspect for cracks, nicks, scratches, chafing, burns, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/eject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FORWARD AND AFT ROTARY-WING HEAD ASSEMBLIES

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
DMWR 55-1615-296
DMWR 55-1615-297
DMWR 55-1650-166
WP 0077 00
WP 0160 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The forward and aft rotary-wing head assemblies consist of a rotor head, three pitch-varying housings, three pitch-varying shafts with droop stops, three shock absorbers, a swashplate, three pitch links, a drive collar and drive arms.
The rotor hub has splines that mate with splines on the rotor shaft. Pitch shafts are connected to the hub through three horizontal pins. These pins ride in bearings supported by the hub lugs. Caps retaining the pins and bearings are secured by locking beams. The beams connect the leading cap to one pin with the trailing cap of the next pin.
The pitch varying housings are connected to pitch-varying shafts by flexible, laminated steel tie bars. The laminated tie bar allows the pitch housing to rotate on the pitch shafts and to change blade pitch. The inboard end of the tie bar is connected to the inboard end of the pitch shaft. The outboard end of the tie bar is connected to the outboard end of the pitch-varying housing. The pitch arm on each housing is connected by a pitch link to a lug on the swashplate. The pitch link raises or lowers the pitch arm allowing it to rotate the housing on two roller bearings on the shaft. Lugs on the housing contain bearings for the vertical hinge pin. A single hub oil tank lubricates the horizontal pin bearings. Each pitch-varying housing has a pitch bearing oil tank and two vertical pin bearing oil tanks. An oil manifold tube connects the vertical pin tanks to each other. Sight indicators are provided for each tank, to check oil level.
Each pitch-varying housing is supported by a droop stop. These are installed on the bottom of the pitch shafts to limit droop at low rotor speed. The forward and aft rotor heads have fixed droop stops that rest directly against the hub. The centrifugal droop stop assembly is mounted on a splined plate under the aft rotor head. The droop stop contains three balance arms. These are connected by springs to lugs on the hub oil tank. Interposer blocks on the balancing arms are positioned between the fixed blocks and the hub. As rotor speed increases, the centrifugal droop stops swing out. This moves interposer blocks clear of the pitch shafts and allows more freedom for blade droop. As rotor speed decreases, the springs pull the arms in toward the hub. This positions the blocks between the hub and pitch shafts to reduce droop angle.
Each head has three shock absorbers. They are connected between lugs on the pitch-varying housing and brackets on the blades. The shock absorbers limit the lead and lag motion of the blades. Each shock absorber has a vent valve. The valve is opened for extreme cold weather operation. Changing the vent valve position allows the shock absorber to be used on the forward or aft head.
SCOPE – continued

The forward and aft swashplates transmit manual or automatic fight control movements to the rotary-wing blades. The swashplate can be tilted and moved vertically. This movement is transferred to the blades through the pitch links and pitch-varying housing. Forward and aft swashplates have aluminum rotating rings. The stationary ring on the aft swashplate is steel. On the forward swashplate this ring is aluminum. The stationary ring of each swashplate is mounted on a spherical bearing. This allows the swashplate to tilt in any direction. A ball bearing connects rotating and stationary rings. The swashplate is free to slide up and down on a slider shaft to change blade pitch angle. Lugs are provided on the rotating ring for connection of three pitch links and upper drive arm.

Drive arm lugs are located in two positions so the rotating ring can be used on the forward or aft swashplate. Lugs on the stationary ring provide for connection of two servo cylinders, fixed link, and longitudinal cyclic actuator. Two single interrupters, a double interrupter on the rotating ring, and a magnetic pickup on the stationary ring are used for rotor balancing.

The six pitch links, three on each rotary-wing head, are connected between the swashplate and pitch-varying housing. Tilting a swashplate up and down moves the pitch link and pitch arm in the same direction. This increases or decreases the blade pitch angle. Raising and lowering the swashplate on the slider shaft changes pitch on all three blades. Forward and aft pitch links are similar in design but not interchangeable. Each pitch link is adjustable to change the pitch of an individual blade. Moving the turnbuckle toward the plus mark makes the pitch link longer and increases blade pitch. A turn in the minus direction shortens the pitch link and decreases blade pitch.

The drive collar transmits torque to the swashplate through the upper and lower drive arms. The drive arms are hinged to allow the swashplate to slide up and down on the slider shaft. The splined drive collar mates with splines on the rotor shaft. A flange is located on the drive collar for installation of the weather-protective cover. Drive collar lugs are provided for connection to the upper drive arm. The upper drive arm is connected at the other end to the lower drive arm. Both connections are hinged. A spherical ball bearing on the lower drive is connected to the swashplate. This arrangement allows the swashplate to tilt.
INSPECTION REQUIREMENTS

Figure 1. Forward and Aft Rotary-Wing Heads
INSPECTION REQUIREMENTS - continued

NOTE
The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Pitch-Varying Housing (CSI - WP 0160 00)
   a. Inspect for cracks (no cracks allowed), nicks, scratches, gouges, scores, pits, burns, or evidence of corrosion.
   b. Inspect for loose, missing, improper, and damaged attaching hardware.
   c. Inspect for evidence of leakage.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair as per DMWR 55-1615-296 when authorized by the Contracting Officer.

2. Pitch Links (CSI - WP 0160 00)
   a. Inspect bearings for play. Refer to TM 55-1520-240-23 for accept/reject criteria.
   b. Inspect locator pin for damage (no damage allowed).
   c. Inspect rod end for staking marks or cracks (no cracks allowed).
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Swashplate, Forward and Aft (CSI - WP 0160 00)
   a. Inspect for cracks (no cracks allowed), nicks, gouges, dents, scratches, pits, burns, or evidence of corrosion.
   b. Inspect for loose, missing, and damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   e. Repair as per DMWR 55-1615-297 when authorized by the Contracting Officer.

4. Drive Arms, Upper (CSI - WP 0160 00)
   a. Inspect for cracks (no cracks allowed), nicks, chafes, scratches, dents, gouges, or evidence of corrosion.
   b. Inspect bearings for scores, tears, and fraying.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Drive Arms, Lower (CSI - WP 0160 00)
   a. Inspect for cracks (no cracks allowed), nicks, chafes, scratches, dents, gouges, or evidence of corrosion.
   b. Inspect bearings for scores, tears, and fraying.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

6. Drive Collar (CSI - WP 0160 00)
   a. Inspect for cracks (no cracks allowed), nicks, chafes, scratches, dents, gouges, or evidence of corrosion.
   b. Inspect bearings for scores, tears, and fraying.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Lubrication System
   a. Inspect for cracks (no cracks allowed), nicks, scores, gouges, and or evidence of corrosion.
   b. Inspect sight indicators for leaks, cracks, and glass clarity.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Shock Absorbers (CSI - WP 0160 00)
   a. Inspect for cracks, dents, chafing, nicks, pits, burns, gouges, scratches, and or evidence of corrosion.
   b. Inspect for loose, missing, improper, or damaged attaching hardware.
   c. Inspect for evidence of leakage.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 55-1650-166 when authorized by the Contracting Officer.

9. Rotor Head Hub (CSI - WP 0160 00)
   a. Inspect for cracks (no cracks allowed), nicks, scratches, gouges, scores, pits, burns, and or evidence of corrosion.
   b. Inspect for loose, missing, improper, or damaged attaching hardware.
   c. Inspect for evidence of leakage.
   d. Inspect hub splines for nicks, scratches, gouges, scores, pits, or evidence of corrosion.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   g. Repair per DMWR 55-1615-296 when authorized by the Contracting Officer.

10. Droop Stops (Fixed) (CSI - WP 0160 00)
    a. Inspect for distortion, corrosion, cracks, breaks, and wear at anchor points.
    b. Inspect for loose, missing, improper, or damaged attaching hardware.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

11. Droop Stop (Centrifugal) *(CSI - WP 0160 00)*
   a. Inspect springs and limiters for distortion, corrosion, cracks, breaks, and wear at anchor points.
   b. Inspect weights for corrosion and security.
   c. Inspect for loose, missing, improper, or damaged attaching hardware.
   d. Inspect balance arms for corrosion and distortion.
   e. Inspect interposer blocks, support, and striker blades for cracks, corrosion, and security.
   f. Inspect splines and supports for nicks, cracks, or evidence of corrosion.
   
   g. Refer to WP 0077 00 for corrosion removal and treatment.
   h. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
DMWR 55-1615-321
DMWR 55-1615-322
DMWR 55-1615-323
DMWR 55-1615-324
DMWR 55-1615-325
WP 0003 00
WP 0077 00
WP 0160 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The drive system delivers torque from the engines to the rotary-wing heads and blades. It also drives the AC generators and hydraulic pumps for the flight control and utility hydraulic systems. The drive system consists of five transmissions, drive shafting to connect the transmissions, and an aft rotor shaft.

INSPECTION REQUIREMENTS

Figure 1. Drive System
NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Forward and Aft Drive Shafting (CSI - WP 0160 00)
   a. Inspect for cleanliness, cracks (no cracks allowed), dents, corrosion, and loose or cracked rivets.
   b. Inspect for excessive play or binding of the roller bearing, and foreign objects.
   c. Inspect mounting points and bushings for cracks (no cracks allowed), wear, distortion, or evidence of corrosion.
   d. Inspect the mount for swollen or torn rubber, and debonding of rubber from metal.
   e. Flexible Adapter Assembly – Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1615-322 when authorized by the Contracting Officer.

2. Combining Transmission (CSI - WP 0160 00)
   a. Inspect the housing for loose or missing hardware, cracks (no cracks allowed), damage, corrosion, leaks, overheating, and foreign objects.
   b. Inspect input pinion shafts, forward and aft output shafts on transmission for axial and radial play and damage.
   c. Inspect mounting points and bushings for cracks (no cracks allowed), wear, distortion or evidence of corrosion.
   d. Inspect electrical wiring and connectors for security, chafing, proper support, and insulation for cuts and fraying. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and connector inspection and repair criteria.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   g. Repair per DMWR 55-1615-325 when authorized by the Contracting Officer.

3. Aft Rotor Shaft (CSI - WP 0160 00)
   a. Inspect aft vertical shaft and bearing for leaks and signs of overheating.
   b. Inspect aft vertical shaft at the top of the slider shaft for wear adjacent to the dust seal on the shaft and for proper clearance of the dust seal.
   c. Inspect slider shaft for nicks, scratches, pitting, wear, or evidence of corrosion.
   d. Inspect mount housing, and bushings for wear, cracks (no cracks allowed), distortion, or evidence of corrosion.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   g. Repair per DMWR 55-1615-322 when authorized by the Contracting Officer.

4. Aft Transmission (CSI - WP 0160 00)
   a. Inspect for cracks (no cracks allowed), scratches, nicks, gouges, loose or missing hardware, or evidence of corrosion.
   b. Inspect for evidence of leaks, overheating, and foreign objects.
   c. Inspect mounting points and bushings for cracks (no cracks allowed), wear, distortion, or evidence of corrosion.
INSPECTION REQUIREMENTS - continued

d. Inspect wire bundles and connectors for security, damage, and proper support. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and connector inspection and repair criteria.

e. Refer to WP 0077 00 for corrosion removal and treatment.

f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

g. Repair per DMWR 55-1615-324 when authorized by the Contracting Officer.

5. Engine Transmission (CSI - WP 0160 00)

NOTE

Inspection procedures are applicable to both left and right engine transmissions.

a. Inspect housing for corrosion, chafed areas, leaks, overheating, cracks (no cracks allowed), and fairing barrel nuts for condition.

b. Inspect output shaft for radial and axial play. Check splines for wear.

c. Inspect attaching hardware for loose, missing, or damage, and foreign objects.

d. Inspect wire bundles and connectors for security, damage, and proper support. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and connector inspection and repair criteria.

e. Refer to WP 0077 00 for corrosion removal and treatment.

f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

g. Repair per DMWR 55-1615-323 when authorized by the Contracting Officer.

6. Engine Drive Shaft (CSI - WP 0160 00)

NOTE

Inspection procedures are applicable to both left and right shafts.

a. Inspect for cleanliness, cracks (no cracks allowed), dents, loose or cracked rivets, or evidence of corrosion.

b. Inspect nuts and bolts for scratches, cracks, nicks, pitting, damaged threads, or evidence of corrosion.

c. Flexible Adapter Assembly – Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

d. Refer to WP 0077 00 for corrosion removal and treatment.

e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

f. Repair per DMWR 55-1615-322 when authorized by the Contracting Officer.

7. Forward Transmission (CSI - WP 0160 00)

a. Inspect for cracks (no cracks allowed), scratches, nicks, gouges, loose or missing hardware, or evidence of corrosion.

b. Inspect for evidence of leaks, overheating, and foreign objects.

c. Inspect mounting points and bushings for cracks (no cracks allowed), wear, distortion, or evidence of corrosion.

d. Inspect slider shaft for nicks, scratches, pitting, or evidence of corrosion.

e. Inspect wire bundles and connectors for security, damage, and proper support. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and connector inspection and repair criteria.

f. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1615-321 when authorized by the Contracting Officer.

END OF WORK PACKAGE
## INITIAL SETUP

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<td>WP 0160 00</td>
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**Equipment Conditions:**
As Required

**Special Environmental Condition:**
As Required

## SCOPE

The flight control hydraulic system consists of two identical but independent systems, identified as No 1 and No. 2 systems. The No. 1 system reservoir and module are located in the forward pylon fairing and the No. 2 system reservoir and module are is located in the aft pylon. The following components are common to both systems; fill module, hydraulic panel, maintenance panel, hydraulic pump, power control module, power transfer unit, servocylinders, reservoir coolers, lower control modules, and integrated lower control actuators (ILCA).

The fill module located at the right side of the cabin in the ramp area is used to add hydraulic fluid to both systems, and the utility hydraulic system.

A three-position switch is located on the HYDRAULIC panel of the cockpit overhead panel. Selecting either system disables and isolates the opposite system. There are two PWR XFR switches on the panel, one for each system. If the engines are shut down and the auxiliary power unit is running, either or both flight control systems can be pressurized.

The maintenance panel is mounted on the right side of the cabin ramp area. The panel has a hydraulic section with gages and indicator lights, which monitor the various system parameters.

A power transfer unit (PTU) in each system allows hydraulic pressure to be applied to the controls when the drive system is shut down. Each PTU consists of a pump driven by a hydraulic motor. The motor is powered by the APU motor pump, utility pump, or ground support equipment.

Pivoting and swiveling servocylinders are installed for each rotor system. The servocylinder receives 3,000-psi hydraulic pressure from each hydraulic system. Each servocylinder has individual manifolds and cylinders for the No.1 and No. 2 hydraulic systems.
SCOPE - continued

An integrated reservoir cooler module provides hydraulic fluid storage and cooling, with a separate fan for each system. An indicating rod on the reservoir provides visual fluid level monitoring. The maintenance panel allows for remote monitoring of fluid level.

A lower control module in each system reduces hydraulic pressure to the ILCA from 3,000 to 1,500 psi. A solenoid valve in each module shuts off hydraulic pressure to the advanced flight control system (AFCS) extensible links in each ICLA. The modules for each system are in the upper part of the flight control closet. The NO. 1 system module is at sta 100 and the NO. 2 system module is located at sta 95.

Four ILCA’s are located in the flight control closet between sta 95 and sta 120. The actuators operate on 1,500 psi hydraulic pressure to provide flight control movement in the pitch, roll, yaw, and thrust axis and AFCS inputs to the pitch, roll, and yaw axis.
NOTE

The item numbers in Figure 1, sheets 1 through 3, correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Flight Control Hydraulic System (Sheet 1 of 3)
CAUTION

Preservative hydraulic fluids, MIL-H-46170 and MIL-PRF-6083 will not be used for preservation of army aircraft hydraulic components. Instead, substitute MIL-PRF-83282 and MIL-H-5606 hydraulic fluids, respectively, for preservation of these components.

1. Hydraulic Panel
   a. Inspect for cracks (no cracks allowed), nicks, scratches, gouges, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect switches for operation, damage, frayed wiring, burns, and arcing.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical components inspection and repair procedures.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Fill Module
   a. Inspect for cracks (no cracks allowed), nicks, gouges, dents, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect for evidence of leakage and damaged tubing.
   d. Inspect cover for broken or damaged springs, and condition of seal.
   e. Inspect sight gauge for cracks and clarity.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   h. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Maintenance Panel
   a. Inspect for cracks (no cracks allowed), nicks, scratches, gouges, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect switches and gages for operation, damage, frayed wiring, burns, and arcing.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical components inspection and repair procedures.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Power Control Module, No. 1 and No. 2 Systems
   a. Inspect modules for cracks (no cracks allowed), nicks, scratches, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical components inspection and repair procedures.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

5. Hydraulic Pump, No. 1 and No. 2 Systems
   a. Inspect hydraulic pumps for cracks (no cracks allowed), nicks, scratches, leaks, or evidence of corrosion.
   b. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   d. Repair per DMWR 55-1650-414, for Stratopower pumps or DMWR 55-4320-278 for Vickers pumps, when
      authorized by the Contracting Officer.

Figure 1. Flight Control Hydraulic System (Sheet 2 of 3)
INSPECTION REQUIREMENTS - continued

6. Power Transfer Unit, No. 1 and No. 2 Systems
   a. Inspect power transfer unit assembly for cracks (no cracks allowed), nicks, scratches, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical components inspection and repair procedures.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   g. Repair per DMWR 55-1650-399 when authorized by the Contracting Officer.

7. Servocylinders (forward and aft pivoting and swiveling)
   a. Inspect for cracks (no cracks allowed), nicks, scratches, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 2 and 3, for all tubing and hose inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair swiveling servocylinders per DMWR 55-1650-400 and pivoting servocylinders per DMWR 55-1560-395 when authorized by the Contracting Officer.

8. Reservoir Cooler, No. 1 and No. 2 Systems
   a. Inspect for cracks (no cracks allowed), nicks, scratches, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 2 and 3, for all tubing and hose inspection and repair procedures.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical components inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   g. Repair per DMWR 55-1650-396 when authorized by the Contracting Officer.

9. Cooling Fan, No. 2 System
   a. Inspect for cracks (no cracks allowed), nicks, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical components inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 55-4140-220 for cooling fan P/N 145HS202-5 or DMWR 55-4140-221 for cooling fan P/N 145HS202-7 when authorized by the Contracting Officer.
INSPECTION REQUIREMENTS - continued

Figure 1. Flight Control Hydraulic System (Sheet 3 of 3)
INSPECTION REQUIREMENTS - continued

10. Cooling Fan, No. 1 System
   a. Inspect for cracks (no cracks allowed), nicks, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 55-4140-216 for cooling fan P/N 145HS202-4 or DMWR 55-4140-221 for cooling fan P/N 145HS202-6 when authorized by the Contracting Officer.

11. Lower Control Module Assembly, No. 1 and No. 2 Systems
   a. Inspect for nicks, dents, scratches, cracks (no cracks allowed), leaks, or evidence of corrosion.
   b. Inspect for loose, missing or damaged hardware.
   c. Refer to WP 0003 00, Table 2, for all tubing inspection and repair procedures.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

12. Integrated Lower Control Actuators (ILCA), No. 1 and No. 2 Systems (CSI - WP 0160 00)
   a. Inspect for cracks (no cracks allowed), nicks, scratches, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 55-1650-397 when authorized by the Contracting Officer.

13. Lower Controls Actuator Structural Manifold, No. 1 and No. 2 Systems
   a. Inspect for nicks, dents, scratches, cracks (no cracks allowed), leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Table 2, for tubing inspection and repairs.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
UTILITY HYDRAULIC SYSTEM

INITIAL SETUP

Test Equipment: As Required
Tools and Special Tools: As Required
Material/Parts: As Required
Personnel Required: Examiner (PSA)

References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 series
- DMWR 55-1650-396
- DMWR 55-1650-398
- DMWR 55-1650-412
- DMWR 55-1650-414
- DMWR 55-4140-220
- WP 0003 00
- WP 0077 00

Equipment Conditions: As Required
Special Environmental Condition: As Required

SCOPE

The utility hydraulic system provides hydraulic pressure to operate seven subsystems throughout the helicopter. These include engine start, cargo ramp and door, cargo winch, center cargo hook release, power steering and aft swivel locks, wheel brakes, and flight controls during ground checks. The following components are common to the system: Auxiliary Power Unit (APU) start accumulator, APU start module, APU motor pump, utility pump, pressure control module, return control module, reservoir/cooler, fill module, and hand-pump.

The APU accumulator stores hydraulic fluid under pressure to start the APU. It is located in the ramp area to the right of the aft transmission. In an emergency, the pressure in the accumulator can be used to operate the utility subsystems.

The utility pump, through the pressure control module, pressurizes the entire utility system when the engines are running and the rotor system is turning. The pressure control module receives input hydraulic pressure from the APU motor pump, utility pump, or an external ground power unit and distributes it to the various utility subsystems.

The return control module is the central collection point for all fluids returning from the various subsystems to the reservoir/cooler. A filter and a transfer cylinder are mounted on the module. The filter has a visual contamination indicator and a switch to light a caution light on the maintenance panel in the ramp area. The return module is located high in the aft cabin area at sta 534, to the left of the aft sync shafting.

The reservoir/cooler module stores and cools fluid for system operation. The cooler is mounted on top of the reservoir. It is connected by flexible ducting to a fan that is activated by a thermal switch in the cooler. Sensors in the unit send information on fluid temperature and level the maintenance panel.

The fill module is used to fill both the utility and flight control systems.

The hand-pump is a two-stage manually operated pump primarily used to pressurize the APU start accumulator. In an emergency, it can also be used to pressurize the cargo ramp, and cargo door.
NOTE

The item numbers in Figure 1, sheets 1 and 2, correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.
INSPECTION REQUIREMENTS - continued

**CAUTION**

Preservative hydraulic fluids, MIL-H-46170 and MIL-PRF-6083 will not be used for preservation of Army aircraft hydraulic components. Instead, substitute MIL-PRF-83282 and MIL-H-5606 hydraulic fluids, respectively, for preservation of these components.

1. Utility Return Control Module
   a. Inspect for cracks (no cracks allowed), nicks, scratches, leaks, dents, gouges, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria, and repair procedures.

2. Utility Pressure Control Module
   a. Inspect for cracks (no cracks allowed), nicks, scratches, leaks, dents, gouges, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria, and repair procedures.

3. APU Motor Pump
   a. Inspect for cracks (no cracks allowed), nicks, scratches, leaks, gouges, dents, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 55-1650-398 when authorized by the Contracting Officer.

4. APU Starter Accumulator
   a. Inspect the housing, manifold, and mount fittings for leaks, cracks (no cracks allowed), nicks, scratches, dents, gouges, or evidence of corrosion.
   b. Inspect accumulator gage sight glass for cracks (no cracks allowed), leakage, and clarity.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   g. Repair per DMWR 55-1650-412 when authorized by the Contracting Officer.
INSPECTION REQUIREMENTS - continued

5. Utility Hydraulic Pump
   a. Inspect for cracks (no cracks allowed), nicks, scratches, leaks, gouges, dents, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 55-1650-414 when authorized by the Contracting Officer.

6. APU Start Module
   a. Inspect for cracks (no cracks allowed), nicks, scratches, leaks, gouges, dents, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect accumulator gage sight glass for cracks (no cracks allowed), leakage, and clarity.
   d. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

7. Utility Hydraulic System Accumulator
   a. Inspect for cracks (no cracks allowed), nicks, scratches, dents, gouges, leaks, or evidence of corrosion.
   b. Inspect accumulator gage sight glass for cracks (no cracks allowed), leakage, and clarity.
   c. Inspect for loose, missing, or damaged hardware.
   d. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

Figure 1. Utility Hydraulic System (Sheet 2 of 2)
INSPECTION REQUIREMENTS – continued

8. Utility Reservoir Cooler
   a. Inspect for cracks (no cracks allowed), nicks, scratches, leaks, dents, gouges, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect duct for deterioration, holes, and damage.
   d. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   e. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1650-396 when authorized by the Contracting Officer.

9. Utility Cooling Fan
   a. Inspect for cracks (no cracks allowed), nicks, scratches, dents, gouges, or evidence of overheating or corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 55-4140-220 when authorized by the Contracting Officer.

10. Hand-Pump
    a. Inspect for cracks (no cracks allowed), nicks, scratches, dents, gouges, leaks, operation, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged hardware.
    c. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.
    e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CARGO RAMP AND DOOR HYDRAULIC SYSTEM

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
DMWR 55-1650-154
DMWR 55-1650-302
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cargo ramp is hinged to the fuselage at the floor line and supported by two actuating cylinders. The cylinders are operated by hydraulic fluid, through a control valve, to raise or lower the ramp. The ramp lowers by gravity with the cylinders serving as hydraulic dampers. The cargo door is part of the ramp assembly. With the ramp up, the door can be fully extended to enclose the ramp area. When the ramp is down the door retracts into the ramp. The door extends and retracts by a motor inside the ramp that drives a sprocket and chain assembly. The motor is controlled through a sequence valve that times the door motion to the position of the ramp. An override valve allows the cargo door to remain open or closed regardless of ramp position.
NOTE

The item numbers in Figure 1, sheets 1 and 2 correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Cargo Ramp and Door Hydraulic System (Sheet 1 of 2)
INSPECTION REQUIREMENTS - continued

CAUTION

Preservative hydraulic fluids, MIL-H-46170 and MIL-PRF-6083 will not be used for preservation of Army aircraft hydraulic components. Instead, substitute MIL-PRF-83282 and MIL-H-5606 hydraulic fluids, respectively, for preservation of these components.

1. Door Override Valve
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Ramp Actuating Cylinder
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Inspect actuator mount bearing for general condition.
   d. Operate actuator for fullness and smoothness of operation.
   e. Refer to WP 0003 00, Table 3, for hose inspection and repairs.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1650-302 when authorized by the Contracting Officer.

3. Ramp Control Valve
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Operate valve for fullness and smoothness of operation.
   d. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
4. Cargo Door Sequence Valve
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

5. Cargo Door Motor
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Inspect motor mount fitting for damage.
   d. Inspect chain and cables for general condition.
   e. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1650-154 when authorized by the Contracting Officer

6. Cargo Door Sprocket Spline
   a. Inspect for dents, cracks (no cracks allowed), scratches, gouges, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CARGO HOOK HYDRAULIC RELEASE SYSTEM

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cargo hook hydraulic system directs hydraulic power to release the center cargo hook. (Fore and aft hooks are electrically released). The system consists of a hook release valve and cargo hook actuating cylinder. The release valve is located in the tunnel above the cabin at sta 334. The actuator is located on the hook.

INSPECTION REQUIREMENTS

Figure 1. Cargo Hook Hydraulic Release System
CAUTION

Preservative hydraulic fluids, MIL-H-46170 and MIL-PRF-6083 will not be used for preservation of Army aircraft hydraulic components. Instead, substitute MIL-PRF-83282 and MIL-H-5606 hydraulic fluids, respectively, for preservation of these components.

NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Cargo Hook Release Actuator
   a. Inspect for cracks (no cracks allowed), dents, scratches, nicks, gouges, leaks, or evidence of corrosion.
   b. Inspect for loose, missing or damaged hardware.
   c. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Hook Release Valve
   a. Inspect for cracks (no cracks allowed), dents, scratches, nicks, gouges, leaks, or evidence of corrosion.
   b. Inspect for loose, missing or damaged hardware.
   c. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
WHEEL BRAKE HYDRAULIC SYSTEM

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The helicopter is fitted with a power-assisted self-adjusting disk brake assembly at each of four forward and two aft wheels. The pilot and copilot each have two brake pedals, mounted on the toe of the yaw pedals. Each pedal has its own master cylinder with its own pressure supply. Transfer valves in the left and right system combine pilot and copilot brake input to the corresponding brakes. A parking brake valve allows the brakes to be set and held on by keeping the lines between the valve and the brake pressurized. An accumulator maintains system pressure and has enough reserve to allow several power-assisted stops if the system is cut off. A pressure-reducing valve, located at sta 502, WL 44, cabin roof area, left side, reduces the pressure from 3,000 psi to 1,390 psi.
INSPECTION REQUIREMENTS

CAUTION

Preservative hydraulic fluids, MIL-H-46170 and MIL-PRF-6083 will not be used for preservation of Army aircraft hydraulic components. Instead, substitute MIL-PRF-83282 and MIL-H-5606 hydraulic fluids, respectively, for preservation of these components.

NOTE

The item numbers in Figure 1, sheets 1 and 2 correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

1. Master Cylinder
   a. Inspect for cracks (no cracks allowed), dents, nicks, scratches, gouges, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect brake pedals for cracks (no cracks allowed), dents, nicks, scratches, gouges, or evidence of corrosion.
   d. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

2. Brake Accumulator
   a. Inspect for cracks (no cracks allowed), dents, nicks, scratches, gouges, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect accumulator gage for cracks (no cracks allowed), dents, nicks, scratches, gouges, leaks, or evidence of corrosion.
   d. Inspect accumulator air valve for cracks (no cracks allowed), dents, nicks, scratches, gouges, leaks, or evidence of corrosion.
   e. Inspect accumulator check valve for cracks (no cracks allowed), dents, nicks, scratches, gouges, leaks, or evidence of corrosion.
   f. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   g. Refer to WP 0077 00 for corrosion removal and treatment.
   h. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Brake Transfer Valve
   a. Inspect for cracks (no cracks allowed), dents, nicks, scratches, gouges, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Parking Brake Valve
   a. Inspect for cracks (no cracks allowed), dents, nicks, scratches, gouges, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect parking brake handle and linkage for cracks (no cracks allowed), dents, nicks, scratches, gouges, loose, missing or damaged attaching hardware, evidence of corrosion, and proper operation.
   d. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
5. Brake Pressure Reducing Valve
   a. Inspect for cracks (no cracks allowed), dents, nicks, scratches, gouges, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
INSTRUMENTS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 1-1520-240-10
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The instruments are classified into three functional groups. These groups are the engine instruments, flight instruments, and miscellaneous instruments. The engine instruments include the power turbine inlet temperature and contingency power indicators, gas producer tachometer indicators, engine oil temperature indicators, engine torque indicators, and fuel flow indicators.

The flight instruments include the radar altimeters, barometric altimeters, vertical speed indicators, airspeed indicator, turn and slip indicator, magnetic compass, located at center attached to the glare shield, vertical and horizontal situation indicators, chronometer, and pitot-static system.

The miscellaneous instruments include the transmission oil pressure indicator, transmission oil temperature indicator, fuel quantity indicator, rotor tachometer indicator, hydraulic pressure indicator, and hydraulic temperature indicator.

The master caution panel gives a warning light indicating that the pressure, temperature, or other monitored parameter ranges has been exceeded.

The instrument panel is made of 0.225 2024-T3-aluminum sheets.
INSPECTION REQUIREMENTS

Center Instrument Panel

Figure 1. Center Instrument Panel
Center Instrument Panel – continued

NOTE

The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

Check instruments for correct range markings and index marks, in accordance with TM 1-1520-240-10.

1. Gas Producer Tachometer
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Magnetic Compass
   a. Inspect glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Inspect bracket for cracks (no cracks allowed), bent areas, or evidence of corrosion.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Transmission Oil Pressure Indicator
   a. Inspect dial glass for cracks, corrosion, breaks, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Power Turbine Inlet Temperature (PTIT) Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Center Instrument Panel – continued

5. Transmission Oil Pressure Selector Switch
   a. Inspect switch for cracks, breaks, corrosion, or damage. Replace if damage or deterioration is found.
   b. Inspect for loose, damaged, binding, or missing knob and attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Forward and Aft Longitudinal Cyclic Trim (LCT) Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Transmission Oil Temperature Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Fuel Flow Indicator
   a. Inspect dial glass for cracks, corrosion, breaks, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

9. Fuel Quantity Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
Center Instrument Panel – continued

e. Refer to WP 0077 00 for corrosion removal and treatment.
f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

10. Fuel Quantity Selector Switch
   a. Inspect switch for cracks, breaks, corrosion, or damage. Replace if damage or deterioration is found.
   b. Inspect for loose, damaged, binding, or missing knob and attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

11. Engine Oil Pressure Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

12. Transmission Oil Temperature Selector Switch
   a. Inspect for cracks, breaks, corrosion, or damage. Replace if damage or deterioration is found.
   b. Inspect for loose, damaged, binding, or missing knob and attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

13. Engine Oil Temperature Indicator
   a. Inspect dial glass for cracks, corrosion, breaks, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

14. Master Caution Panel
   a. Inspect for cracks, breaks, corrosion, or damage of indicators. Replace if damage or deterioration is found.
   b. Inspect filter for cracks, distortion, loose or missing hardware, and proper operation.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
Center Instrument Panel – continued

e. Refer to WP 0077 00 for corrosion removal and treatment.
f. Refer to TM 55-1520-240-23 and for accept/reject criteria and repair procedures.

Copilot Instrument Panel

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Figure 2. Copilot Instrument Panel
NOTE

The items in Figure 2 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

Check instruments for correct range markings and index marks, in accordance with TM 1-1520-240-10.

1. Torquemeter
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Airspeed Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Attitude Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, binding, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Altimeter
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, binding, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Copilot Instrument Panel - continued

5. Vertical Speed Indicator (VSI)
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Turn and Slip Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Horizontal Situation Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, binding, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Chronometer
   a. Inspect for cracks, breaks, corrosion, or damage of the instrument. Replace if damage or deterioration is found.
   b. Inspect for loose, damaged, binding, or missing buttons and attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Replace AA Alkaline 3-years life batteries.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Copilot Instrument Panel - continued

9. Radar Altimeter
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or
deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, binding, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair
   procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

10. Rotor Tachometer
    a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or
deterioration is found.
    b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
    c. Inspect for loose, damaged, or missing attaching hardware.
    d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair
    procedures.
    e. Refer to WP 0077 00 for corrosion removal and treatment.
    f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

11. Emergency Power Indicator Light (Aircraft with 712 Engines Only)
    a. Inspect indicator light for loose connections, cracks, breaks, corrosion, or damage that impairs proper
    operation. Replace if damage or deterioration is found.
    b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria
    and repair procedures.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS – continued

Pilot Instrument Panel

T55-L-712

T55-GA-714A

Figure 3. Pilot Instrument Panel
Pilot Instrument Panel - continued

NOTE

The items in Figure 3 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

Check instruments for correct range markings and index marks, in accordance with TM 1-1520-240-10.

1. Cruise Guide Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, binding, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Airspeed Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Attitude Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, binding, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Altimeter
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, binding, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Pilot Instrument Panel - continued

5. Vertical Speed Indicator (VSI)
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or
deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair
   procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Turn and Slip Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or
deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, or missing attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair
   procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Horizontal Situation Indicator
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or
deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, binding, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair
   procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Radar Altimeter
   a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or
deterioration is found.
   b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
   c. Inspect for loose, damaged, binding, or missing knobs and attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair
   procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Pilot Instrument Panel - continued

9. Chronometer
   a. Inspect for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
   b. Inspect for loose, damaged, binding, or missing buttons and attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Replace AA Alkaline 3-years life batteries
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

10. Rotor Tachometer
    a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
    b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
    c. Inspect for loose, damaged, or missing knobs and attaching hardware.
    d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
    e. Refer to WP 0077 00 for corrosion removal and treatment.
    f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

11. Torquemeter
    a. Inspect dial glass for cracks, breaks, corrosion, or damage of instrument dial. Replace if damage or deterioration is found.
    b. Inspect instrument for integrity of hermetic seal. If seal is broken, replace instrument.
    c. Inspect for loose, damaged, or missing attaching hardware.
    d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
    e. Refer to WP 0077 00 for corrosion removal and treatment.
    f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

12. Emergency Power Indicator Light (Aircraft with 712 Engines Only)
    a. Inspect indicator light for loose, cracks, breaks, corrosion, or damage that impairs proper operation. Replace if damage or deterioration is found.
    b. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component inspection and repair procedures.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Pitot Static System

Figure 4. Pitot Static System

NOTE

The item numbers in Figure 4 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Pitot Tube
   a. Inspect openings for obstructions and damage.
   b. Inspect for elongation of screw holes on supports.
   c. Inspect pitot heater for proper operation.
   d. Inspect pitot tube for dents, corrosion, and deterioration of nickel plating.
   e. Inspect tubing for kinks, deterioration, moisture, and security.
   f. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   g. Refer to WP 0077 00 for corrosion removal and treatment.
   h. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Static Port
   a. Inspect for obstructions, damage, or evidence of corrosion.
   b. Inspect tubing for kinks, moisture, deterioration, and security.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Pitot Static System - continued

3. Side Slip Port
   a. Inspect for obstructions, damage, or evidence of corrosion.
   b. Inspect for elongation of screw holes on supports.
   c. Inspect tubing for kinks, moisture, deterioration, and security.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
ELECTRICAL SYSTEMS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DMWR 1-6115-511
DMWR 55-1680-288
DMWR 55-6110-227
DMWR 55-6115-496
DMWR 55-6115-507
DMWR 55-6130-290
TM 1-1500-204-23 Series
TM 1-1520-240-10
TM 55-1500-323-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The electrical system consists of an alternating current (AC) power system and a direct current (DC) power system. AC power is the primary source of electrical power for the helicopter. The power distribution system has four sources: two main generators, a secondary generator, and external power. The two main generators are mounted and driven by the aft transmission. The secondary generator is mounted on and driven by the auxiliary power unit (APU). A receptacle for connecting external power to the helicopter is located at the forward end of the left pod. Each power source delivers 115/200-volt, 3-phase power to one or both of two AC busses. The busses distribute the power to all AC electrical components on the helicopter. Each of the power sources has its own control unit, panel, or monitor that ensures that it is operating properly before its output is delivered to the busses.

There are four sources of DC power for the helicopter: two 200-ampere transformer-rectifiers (for the No. 1 and No. 2 DC systems), an 11-ampere-hour battery, and external DC power. Each source provides 28-volt DC to one or more of five separate busses, located within the No. 1 and No. 2 power distribution panels (PDP).

NOTE

Refer to TM 55-1500-323-24 for repair or replacement of aircraft electrical and electronic wiring.

The item numbers in Figure 1, sheets 1 and 2, correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration for Alternating Current Power System.
INSPECTION REQUIREMENTS

Alternating Current Power System

Figure 1. Electrical Systems (Sheet 1 of 2)
Alternating Current Power System - continued

1. Electrical Panel
   a. Inspect for cracks, scratches, gouges, identification markings, burned areas, or evidence of corrosion.
   b. Inspect for loose, damaged, or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. APU Generator Control Unit
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for loose, damaged, or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.
   f. Repair per DMWR 55-1680-288 when authorized by the Contracting Officer.

3. No. 2 Generator Control Unit
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for loose, damaged, or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.
   f. Repair per DMWR 55-6110-227 when authorized by the Contracting Officer.

4. No. 1 Generator Control Unit
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for loose, damaged, or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.
   f. Repair per DMWR 55-6110-227 when authorized by the Contracting Officer.

5. External Power Monitor
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for loose, damaged, or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. External Power Receptacle
   a. Inspect for nicks, scratches, cracks, dents, or evidence of corrosion.
   b. Inspect for bent or broken pins and foreign objects.
   c. Ensure sealant is properly placed as required.
Alternating Current Power System - continued

d. Inspect the back of the receptacle for security, damage, and burned areas.
e. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
f. Refer to WP 0077 00 for corrosion removal and treatment.
g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

Figure 1. Electrical Systems (Sheet 2 of 2)

7. APU Generator Return Current Transformer
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for loose, damaged or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Alternating Current Power System - continued

8. APU Generator
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for leaks, loose, damaged, or missing hardware, and foreign objects.
   c. Inspect the inlet screen and exhaust screen for blockage.
   d. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and 
      repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria.
   g. Repair per DMWR 55-6115-496 for generator, P/N 31161-001, and DMWR 1-6115-511 for generator, P/N 
      AGH942-1, when authorized by the Contracting Officer.

9. No. 1 Generator
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for leaks, loose, damaged, or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and 
      repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.
   f. Repair per DMWR 55-6115-507 when authorized by the Contracting Officer.

10. No. 2 Generator
    a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
    b. Inspect for leaks, loose, damaged, or missing hardware, and foreign objects.
    c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and 
       repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.
    e. Refer to TM 55-1520-240-23 for accept/reject criteria.
    f. Repair per DMWR 55-6115-507 when authorized by the Contracting Officer.
NOTE
The item numbers in Figure 2, sheets 1 and 2, correspond to the respective item
numbers in the INSPECTION REQUIREMENTS following each illustration for
Direct Current Power System.

Figure 2. Electrical Systems (Sheet 1 of 2)
Direct Current Power System – continued

1. External power receptacle
   a. Inspect for nicks, scratches, cracks, dents, or evidence of corrosion.
   b. Inspect for bent or broken pins and foreign objects.
   c. Ensure sealant is properly placed as required.
   d. Inspect the back of the receptacle for security, damage, and burned areas.
   e. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. No. 1 Transformer Rectifier
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for loose, damaged, or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.
   f. Repair per DMWR 55-6130-290 when authorized by the Contracting Officer.

3. Battery Charger
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for leaks, loose, damaged, or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. No. 2 Transformer Rectifier
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for loose, damaged, or missing hardware, and foreign objects.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.
   f. Repair per DMWR 55-6130-290 when authorized by the Contracting Officer.

5. Battery Connector
   a. Inspect for loose, damaged, or missing hardware, corrosion, burned areas, or cracks.
   b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria.

6. Battery
   a. Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
   b. Inspect for leaks, security, damaged or missing hardware, and foreign objects.
Direct Current Power System - continued

- Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
- Refer to WP 0077 00 for corrosion removal and treatment.
- Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Battery Relay
- Inspect for cracks, scratches, gouges, burned areas, or evidence of corrosion.
- Inspect for loose, damaged, or missing hardware, and foreign objects.
- Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
- Refer to WP 0077 00 for corrosion removal and treatment.
- Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. No. 1 and No. 2 Power Distribution System
- Inspect for evidence of water/moisture entry, arcing/burning, and discoloration.
- Inspect for cracks, loose, damaged or missing hardware, pinched wiring, chafing, fraying, foreign objects, or evidence of corrosion.
- Refer to WP 0003 00, Table 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
- Refer to WP 0077 00 for corrosion removal and treatment.
- Refer to TM 55-1520-240-23 for accept/reject criteria.
Exterior Lighting

NOTE

The item numbers in Figure 3 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for Exterior Lighting.

Figure 3. Aircraft Exterior Lighting
Exterior Lighting - continued

1. Right Position (Green)
   a. Inspect for evidence of water/moisture entry, burned areas, and discoloration.
   b. Inspect for cracks, loose, damaged or missing hardware, foreign objects, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Formation Lights
   a. Inspect for evidence of water/moisture entry, burned areas, and discoloration.
   b. Inspect for cracks, loose, damaged or missing hardware, foreign objects, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Anti-collision Light, Top
   a. Inspect for evidence of water/moisture entry, burned areas, and discoloration.
   b. Inspect for cracks, loose, damaged or missing hardware, foreign objects, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Tail Position Light (White)
   a. Inspect for evidence of water/moisture entry, burned areas, and discoloration.
   b. Inspect for cracks, loose, damaged or missing hardware, foreign objects, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Formation Lights
   a. Inspect for evidence of water/moisture entry, burned areas, and discoloration.
   b. Inspect for cracks, loose, damaged or missing hardware, foreign objects, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Left Position (Red)
   a. Inspect for evidence of water/moisture entry, burned areas, and discoloration.
   b. Inspect for cracks, loose, damaged or missing hardware, foreign objects, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Exterior Lighting - continued

7. Anti-collision Light, Bottom
   a. Inspect for evidence of water/moisture entry, burned areas, and discoloration.
   b. Inspect for cracks, loose, damaged or missing hardware, foreign objects, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Landing/Search Lights
   a. Inspect for evidence of water/moisture entry, burned areas, and discoloration.
   b. Inspect for cracks, loose, damaged or missing hardware, foreign objects, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

9. NVG Formation Lights
   a. Inspect for evidence of water/moisture entry, burned areas, and discoloration.
   b. Inspect for cracks, loose, damaged or missing hardware, foreign objects, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

10. Cargo Hook Lights (Exterior, 1 Per Hook) and Switch Box
    a. Inspect for cracks, security, damaged or missing hardware, burned areas, foreign objects, or evidence of corrosion.
    b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
NOTE

The item numbers in Figure 4, sheets 1 through 4, correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration for Interior Lighting.

Figure 4. Aircraft Interior Lighting (Sheet 1 of 4)
Interior Lighting -continued

1. Overhead Panel Lights
   a. Inspect for cracks, loose, damaged or missing hardware, burned areas, foreign objects, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Instrument Panel Floodlights
   a. Inspect for cracks, loose, damaged or missing hardware, burned areas, foreign objects, binding, or evidence of corrosion.
   b. Refer to WP 0003 00, Table 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

Figure 4. Aircraft Interior Lighting (Sheet 2 of 4)
Interior Lighting -continued

3. Cockpit Dome Light
   a. Inspect for cracks, loose, damaged or missing hardware, burned areas, foreign objects, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Utility Lights
   a. Inspect for cracks, loose, damaged or missing hardware, burned areas, foreign objects, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Instrument Panel Lights (Pilot, Center, and Co-Pilot)
   a. Inspect for cracks, loose, damaged or missing hardware, burned areas, foreign objects, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Interior Lighting -continued

Figure 4. Aircraft Interior Lighting (Sheet 3 of 4)
Interior Lighting -continued

6. Cabin and Ramp Lights
   a. Inspect the two cabin light switches for cracks, security, damaged or missing hardware, burned areas, foreign objects, or evidence of corrosion.
   b. Inspect the two relays for cracks, security, damaged or missing hardware, burned areas, discoloration, foreign objects, or evidence of corrosion.
   c. Inspect the dome lights for cracks, security, damaged or missing hardware, burned areas, discoloration, foreign objects, or evidence of corrosion.
   d. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Troop Warning Box, sta 120 and sta 575
   a. Inspect for cracks, loose, damaged or missing hardware, burned areas, foreign objects, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Figure 4. Aircraft Interior Lighting (Sheet 4 of 4)
Interior Lighting -continued

8. Hoist Operators Grip Assembly and Hoist Operator Panel, sta 320
   a. Inspect for bent or broken pins, cracks, loose, damaged or missing hardware, burned areas, exposed wiring, foreign objects, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

9. Maintenance Panel, sta 502
   a. Inspect for cracks, scratches, gouges, identification markings, burned areas, or evidence of corrosion.
   b. Inspect gages for cracks, breaks, or damage of instrument dial. Replace if damage or deterioration is found.
   c. Inspect for security, damaged or missing hardware, and foreign objects.
   d. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 1-1520-240-10 for markings.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria.
   g. Repair per DMWR 55-6110-227 when authorized by the Contracting Officer.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FUEL SYSTEM

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DMWR 1-4810-229
DMWR 55-1680-360
DMWR 55-2910-200
DMWR 55-2915-168
DMWR 55-2915-296
DMWR 55-6620-326
DMWR 55-6680-333
TM 1-1500-204-23 Series
TM 55-1500-323-24
TM 55-1520-240-23 Series
T.O. 1-1-3
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The aircraft fuel system supplies fuel to the two engines, the APU, and the cabin heater. Fuel is contained in six fuel pods mounted to the outside of the helicopter between sta 189 and sta 438. The system has two subsystems, left and right. The left (No. 1) system supplies fuel to the No. 1 engine and the APU. The right (No. 2) system supplies fuel to the No. 2 engine and the heater. In case of an emergency, an engine cross feed system allows fuel from one system to supply both engines. Each subsystem is made up of three fuel tank assemblies (forward auxiliary, main, and aft auxiliary). The auxiliary tanks act as storage before fuel is transferred to the main tanks. The fuel system has provisions for connecting an Extended Range Fuel System (ERFS II).

REFUELING SYSTEM

There are two methods of refueling the helicopter.

Gravity Fill Refueling - Each tank has a gravity fill port, which is opened for individual tank refueling. About 30 minutes are necessary to refuel the helicopter by this method.

Single Point Pressure Refueling - The pressure refueling system allows the aircraft to be completely refueled in about 4 minutes with fuel supplied at 300 gallons per minute and 55 psi. A panel located in the right front intertank area controls refueling. Fuel enters the pressure-refueling adapter and goes to the forward auxiliary tanks through a breakaway fitting on the aft access door.

A fuel quantity selector switch and an indicator are on the center instrument panel and on the single-point pressure refueling panel in the right forward intertank bay areas. They receive input signals from the fuel quantity probes in the fuel tanks through a switch box located in the cabin at sta 232. The selection of which panel is in use is made at the overhead single-point fuel panel.
FERRY FUEL SYSTEM

Provisions exist in the helicopter for use of a ferry fuel system. The provisions consist of two ferry fuel fittings on the left and right side of the cabin at approximately sta 375 WL minus 10 and hose connections in the aft left and right intertank areas. They are connected to the main fuel tank system. In addition, 3 vent fittings are at the top of the cabin, left side at sta 240, sta 360 and sta 460. The Extended Range Fuel System (ERFS) and (ERFS II) utilizes the ferry fuel system connections and provides aircraft mission flexibility by extending aircraft range and by providing forward area refueling source.

INTERTANK AREA

There are two intertank areas, forward and aft, between the three fuel pods in each subsystem. The forward intertank areas are in the front landing gear bays. They are functionally similar except that the right inter-tank area has a pressure refueling adapter and a control panel. The right and left forward intertank areas each contain two check valves, five breakaway fittings, one pressure switch, a fuel vent tube from the forward fuel tank, and an evacuation line connected to the jet pump in each main tank. The aft intertank areas are between the main fuel pod and the aft auxiliary pod. The right aft intertank area has connections to the fuselage for the heater fuel feed, a solenoid valve, No. 2 engine fuel feed and ferry fuel. The left aft intertank area has fuselage connections for APU fuel feed, No. 1 engine fuel feed, and ferry fuel. The APU fuel boost pump, solenoid valve, and APU pump drain are also located in the left aft intertank area. Aft inter-tank areas have six breakaway fittings, two check valves, and two motor operated valves, one pressure switch, main tank vent tube, and plumbing. The aft tank fuel vent tube is in the area behind the aft auxiliary tank on each side.

FUEL TANK CELLS

Inside each pod is a fuel tank cell. Each cell is constructed of rubber/fabric laminates, with adapters and fittings bonded into the construction of the cell to provide for the mounting of internal components, access doors, and mounting clamps. Each cell is self-sealing against 50 caliber projectiles and is crash resistant. The tank cells are secured in the pods by bolts that are threaded into the tank supports from the exterior of the pod structure and by fuel tank components at their tank attachment points. Breakaway, self-sealing fittings are installed in each fuel line interconnecting fuel tanks to the fuselage structure. Fiberglass backing boards are taped to the fuselage behind the fuel pods to protect the self-sealing feature of the cells.

FUEL DELIVERY SYSTEM

The fuel pumps for all tanks operate on 115 volts AC from the number 1 or number 2 AC bus and are controlled by 28 volts DC. When the AC circuit for any pump is closed, 115 volts AC is connected to a relay in the fuel pump control relay box. The pump DC circuit breaker provides DC voltage to the pump control switch on the overhead fuel control panel.

Two thermistors are mounted on each auxiliary fuel pump. The thermistors ensure that the pumps operate when covered with fuel and do not shut down in response to fuel sloshing. During normal operation with all fuel pumps operating, each of the two main pumps in the left and right systems delivers fuel through its check valve to a common engine fuel line. Fuel passes through the feed line, a system check valve, a pressure switch, a main engine fuel valve and a fuel flow transmitter, to the engine fuel system.

FUEL LOW LEVEL WARNING SYSTEM

This system has two thermistor units (one on the center probe in each main tank), a dual control unit on the cockpit floor below the center console, and two lights on the master caution panel. The thermistors transmit a signal to the dual control unit and activate the warning lights on the caution panel when the fuel level drops below approximately 65 gallons.

ENGINE FUEL FEED SYSTEM

The No. 1 engine is supplied by the No. 1 fuel subsystem. The No. 2 engine is supplied by the No. 2 fuel subsystem. The fuel passes through a breakaway fitting in the rear wall of the main tank into the aft intertank area to a cross connector on the fuselage. The cross connector directs fuel through the fuselage and to a drain fitting.
ENGINE FUEL FEED SYSTEM - continued

on the bottom skin of the intertank bay. The connector on the left side also directs fuel to the APU and on the right side to the heater.

Interconnecting the two-engine fuel feed systems is a fuel cross feed line with two motor operated shutoff valves. The cross feed system allows fuel from one system to supply both engines in case one system becomes inoperative. The No. 2 system has a manually operated valve for defueling purposes.

Engine fuel passes a pressure switch, motor-operated valve, and fuel flow transducer before passing through a fuselage quick-disconnect fitting on the way to the engine fuel boost pump. An engine feed suction line in each main tank works as a backup system in case both main tank boost pumps fail. When one main tank boost pump fails, the check valve for that pump closes to prevent reverse flow, or air being drawn into the engine feed line. When both boost pumps fail, the engine fuel boost pump draws fuel through a separate hose in the main tank. Flight altitude must not exceed 6000 feet in this condition.

APU FUEL FEED SYSTEM

The APU fuel feed system begins in the left aft intertank area. Fuel from the main tank enters the cross connector and passes into the APU line on top of the connector. The fuel passes through a boost pump and solenoid valve before entering the fuselage. Inside the fuselage, the fuel passes through a manual shutoff valve at sta 540. It passes a quick-disconnect fitting at sta 600 and enters the APU.

**WARNING**

**FLAMMABLE**

All regulations and instructions for handling fuels shall be strictly observed.
Figure 1. Refueling System (Sheet 1 of 2)
NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for Refueling System.

INSPECTION REQUIREMENTS

Refueling System

1. Single Pressure Refueling Station Control Panel
   a. Inspect control panel for looseness, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   b. Inspect control panel lights for looseness, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   c. Inspect control panel switches for looseness, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   d. Inspect control panel fuel quantity indicator for looseness, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
Refueling System - continued

e. Inspect fuel quantity selector switch for looseness, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
f. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
g. Refer to WP 0077 00 for corrosion removal and treatment.
h. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Single Point Pressure Refueling Vacuum Relief Valve Hose
   a. Inspect vacuum relief hose for looseness, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to WP 0003 00, Table 3, for all hose inspection and repair procedures.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Single Point Pressure Refueling Vacuum Relief Valve
   a. Inspect vacuum relief valve hose for looseness, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4 Single Point Pressure Refueling Station Inverter
   a. Inspect inverter for looseness, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5 Single Point Pressure Refueling Adapter
   a. Inspect refueling adapter for looseness, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Single Point Pressure Refueling Crossover Hose
   a. Inspect crossover hose for looseness, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
NOTE
The item numbers in Figure 2 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for Heater Fuel System.

INSPECTION REQUIREMENTS

Heater Fuel System

1. Heater Fuel Feed Hose and Tubing Assemblies
   a. Inspect hoses, tubing, fittings, and attaching hardware along inside cabin area on the right side from sta 120 to sta 364 for looseness, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Tables 2 and 3, for hose and tube inspection and repair procedures.
Heater Fuel System - continued

c. Refer to WP 0077 00 for corrosion removal and treatment.

d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Heater Solenoid Valve Assembly

a. Inspect heater solenoid valve for looseness, missing or damaged hardware, evidence of corrosion, or evidence of leaks.

b. Inspect electrical connection for looseness, missing or damaged hardware, evidence of overheating, or evidence of corrosion.

c. Inspect heater fuel feed hoses, attaching hardware, and fittings in the Right Aft Intertank area for looseness, missing or damaged hardware, evidence of overheating, and for evidence of leaks.

d. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.

e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.

f. Refer to WP 0077 00 for corrosion removal and treatment.

g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Figure 3. Ferry Fuel System
NOTE

The item numbers in Figure 3 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for Ferry Fuel System.

INSPECTION REQUIREMENTS

Ferry Fuel System

1. Ferry Fuel System Vents
   a. Inspect vent fittings located on the top left side of the cabin at sta 240, sta 360, and sta 460 for looseness, missing damaged hardware, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Ferry Fuel System Fittings
   a. Inspect left and right fittings inside of the cabin at sta 375, WL minus 10, for looseness, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. ERFS II Refuel Valve
   a. Inspect refuel valve for looseness, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Inspect electrical connector and wiring for damage and security.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. ERFS II Fuel Feed Hose
   a. Inspect fuel feed hose for looseness, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. ERFS II Coupling Assembly
   a. Inspect coupling assembly for looseness, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
FUEL SYSTEM, RH INTERTANK AREA

Figure 4. Fuel System, RH Intertank Area

NOTE

The item numbers in Figure 4 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for Fuel System RH Intertank Area.

INSPECTION REQUIREMENTS

Fuel System, RH Intertank Area

1. Forward Tank Fuel Pressure Switch Hose Assembly
   a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Fuel System, RH Intertank Area - continued

2. Forward Tank Pressure Switch
   a. Inspect fuel pressure switch for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Inspect fuel pressure switch bracket for security, evidence of corrosion, or damage.
   c. Inspect fuel pressure switch electrical connections and wiring for security, missing or damaged hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Forward Tank Vent and Hose Assembly
   a. Inspect vent and hose assembly for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Forward Tank Electrical Wiring Harness Assembly
   a. Inspect wiring harness assembly and electrical connectors for security, damage, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Forward Tank Fuel Transfer Coupling Assembly
   a. Inspect coupling assembly for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Forward Tank Pressure Refueling Coupling Assembly
   a. Inspect coupling for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Fuel Transfer Hose Assembly
   a. Inspect hose assembly for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Aft Tank Fuel Vent Coupling and Hose Assemblies
   a. Inspect vent assembly for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
   c. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Fuel System, RH Intertank Area - continued

9. Pressure Refueling Manifold
   a. Inspect manifold assembly for security, damage, evidence of corrosion, or evidence of leaks.
   b. Inspect manifold plumbing for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

10. Main Tank Pressure Refueling Coupling Assembly
    a. Inspect coupling assembly for security, damage, evidence of corrosion, or evidence of leaks.
    b. Refer to WP 0077 00 for corrosion removal and treatment.
    c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

11. Main Tank Forward Electrical Wiring Harness Assembly
    a. Inspect wiring harness assembly and electrical connectors for security, damage, or evidence of corrosion.
    b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

12. Split Manifold Pressure Refueling Coupling Assembly
    a. Inspect pressure refueling coupling assembly for security, damage, evidence of corrosion, or evidence of leaks.
    b. Refer to WP 0077 00 for corrosion removal and treatment.
    c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

13. Aft Tank Pressure Switch
    a. Inspect fuel pressure switch and electrical connectors for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
    b. Inspect fuel pressure switch bracket for security, damage or evidence of corrosion.
    c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.
    e. Refer to TM 55-1520-24-23 for accept/reject criteria and repair procedures.

14. Main Tank Fuel Vent Hose Assembly
    a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
    b. Refer to WP 0077 00 for corrosion removal and treatment.
    c. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

15. Fuel Transfer Hose Assembly
    a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
    b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Fuel System, RH Intertank Area - continued

16. Engine Fuel Feed Hose Assembly
   a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

17. Main Tank Fuel Transfer Coupling Assembly
   a. Inspect coupling for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

18. Engine Fuel Feed Coupling Assembly
   a. Inspect coupling for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

19. Main Tank Fuel Vent Coupling Assembly
   a. Inspect vent assembly for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

20. Main Tank Aft Electrical Wiring Harness Assembly
   a. Inspect wiring harness assembly and electrical connectors for security, damage, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

21. Aft Tank Pressure Refueling Manifold Assembly
   a. Inspect manifold assembly for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Inspect manifold plumbing for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   c. Refer to WP 0003 00, Table 2, for tubing inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

22. Aft Tank Electrical Wiring Harness Assembly
   a. Inspect wiring harness assembly and electrical connectors for security, damage, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

23. Engine Fuel Feed Cross Connector
   a. Inspect fuel feed cross connector for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
Fuel System, RH Intertank Area - continued

24. Engine Fuel Feed Drain Valve
   a. Inspect drain valve for security, missing or damaged hardware, or evidence of corrosion.
   b. Inspect hose assembly for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

25. Aft Tank Motor Operated Valve
   a. Inspect valve for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Inspect valve electrical connections for security, damage, or evidence of corrosion.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to WP 003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 1-4810-229 or DMWR 55-1680-360 when authorized by the Contracting Officer.

26. Aft Tank Pressure Refueling Coupling Assembly
   a. Inspect coupling for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

27. Aft Tank Fuel Transfer Coupling Assembly
   a. Inspect coupling assembly for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

28. Aft Tank Pressure Switch Fuel Pressure Hose
   a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Figure 5. Fuel System, LH Intertank Area
NOTE

The item numbers in Figure 5 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for Fuel System LH Intertank Area.

INSPECTION REQUIREMENTS

Fuel System, LH Intertank Area

1. Forward Tank Fuel Vent Assembly
   a. Inspect vent assembly for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Forward Tank Electrical Wiring Harness Assembly
   a. Inspect wiring harness assembly and electrical connectors for security, damage, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Forward Tank Fuel Pressure Switch
   a. Inspect fuel pressure switch and electrical connectors for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Inspect fuel pressure switch bracket for security, evidence of corrosion, or damage.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Forward Tank Fuel Transfer Hose Assembly
   a. Inspect hose assembly for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Main Tank Electrical Wiring Harness Assembly
   a. Inspect wiring harness assembly and electrical connectors for security, damage, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Split Manifold Pressure Refueling Coupling Assembly
   a. Inspect pressure refueling coupling assembly for security, damage, evidence of corrosion, or evidence of leaks.
Fuel System, LH Intertank Area - continued

7. Jet Pump Coupling Assembly
   a. Inspect jet pump coupling assembly for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Main Tank Pressure Refueling Coupling Assembly
   a. Inspect coupling assembly for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

9. Jet Pump Hose Assembly
   a. Inspect hose assembly for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria.

10. Pressure Refueling Manifold
    a. Inspect manifold assembly for security, damage, evidence of corrosion, or evidence of leaks.
    b. Inspect manifold plumbing for security, missing or damaged hardware, evidence of overheating, evidence of corrosion, or evidence of leaks.
    c. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
    d. Refer to WP 0077 00 for corrosion removal and treatment.
    e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

11. Forward Tank Fuel Pressure Switch Hose Assembly
    a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
    b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

12. Forward Tank Fuel Vent Hose Assembly
    a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
    b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

13. Forward Tank Fuel Transfer Hose Assembly
    a. Inspect hose assembly for security, damage, evidence of corrosion, or evidence of leaks.
    b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
    c. Refer to WP 0077 00 for corrosion removal and treatment.
    d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Fuel System, LH Intertank Area - continued

14. Pressure Refueling Manifold
   a. Inspect manifold for security, damage, evidence of corrosion, or evidence of leaks.
   b. Inspect manifold plumbing for security, missing or damaged hardware, evidence of overheating, evidence of corrosion, or evidence of leaks.
   c. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

15. Forward Tank Pressure Refueling Coupling Assembly
   a. Inspect coupling for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

16. Forward Tank Fuel Transfer Coupling Assembly
   a. Inspect coupling assembly for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

17. Fuel Transfer Hose Assembly
   a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

18. Aft Tank Fuel Pressure Switch
   a. Inspect fuel pressure switch and electrical connectors for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Inspect fuel pressure switch bracket for security, damage, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

19. Aft Tank Fuel Pressure Switch Hose Assembly
   a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

20. Aft Tank Fuel Transfer Coupling Assembly
   a. Inspect coupling for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

21. Aft Tank Pressure Refueling Coupling Assembly
   a. Inspect coupling for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
Fuel System, LH Intertank Area - continued

b. Refer to WP 0077 00 for corrosion removal and treatment.
c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

22 Aft Tank Motor Operated Valve
   a. Inspect valve and electrical connectors for security, missing or damaged hardware, evidence of overheating, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   e. Repair per DMWR 1-4810-229 or DMWR 55-1680-360 when authorized by the Contracting Officer.

23 Engine Fuel Feed Drain Hose
   a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

24 Engine Fuel Feed Drain Fitting
   a. Inspect drain fitting for security, missing or damaged hardware, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

25 Engine Fuel Feed Cross Connector
   a. Inspect cross connector for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

26 Aft/Main Tank Electrical Wiring Harness Assemblies
   a. Inspect wiring harness assemblies and electrical connectors for security, damage, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

27 Main Tank Fuel Vent Hose Assembly
   a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

28 Main Tank Fuel Vent Coupling Assembly
   a. Inspect vent-coupling assembly for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
Fuel System, LH Intertank Area - continued

b. Refer to WP 0077 00 for corrosion removal and treatment
c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

29. Aft Tank Pressure Refueling Manifold Assembly
   a. Inspect manifold assembly for security, damage, evidence of corrosion, or evidence of leaks.
   b. Inspect manifold plumbing for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   c. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

30. Engine Fuel Feed Coupling Assembly
   a. Inspect coupling for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

31. Main Tank Fuel Transfer Coupling Assembly
   a. Inspect coupling for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

32. Engine Fuel Feed Hose Assembly
   a. Inspect hose for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Figure 6. Fuel Tank Assemblies
FUEL TANK ASSEMBLIES – continued

NOTE

The item numbers in Figure 6 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for Fuel Tank Assemblies.

INSPECTION REQUIREMENTS

Fuel Tank Assemblies

1. Forward, Aft, and Main Tank High Level Control Valve
   a. Inspect valve for security, missing or damaged hardware, or evidence of corrosion.
   b. Inspect electrical wiring for security, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Forward, Aft, and Main Tank Electrical Wiring
   a. Inspect electrical wiring for security, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Forward, Aft, and Main Tank Fuel Quantity Probe
   a. Inspect probes for security, missing or damaged hardware, or evidence of corrosion.
   b. Inspect electrical wiring for security, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Forward, Aft, and Main Tank Fuel Vent System
   a. Inspect vent system for security, missing or damaged hardware, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Forward, Aft, and Main Fuel Cells
   a. Clean, inspect, leak test, and repair in accordance with TM 55-1520-240-23.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to T.O. 1-1-3 for storage and preservation of cells when defueled.

6. Forward, Aft, and Main Tank Fuel Shutout Valve
   a. Inspect valve for security, missing or damaged hardware, or evidence of corrosion.
Fuel Tank Assemblies - continued

b. Inspect electrical wiring for security, missing or damaged hardware, evidence of overheating or evidence of corrosion.
c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.
e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Forward, Aft, and Main Tank Fuel Drain Valves
   a. Inspect drain valves for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Forward and Aft Tank Boost Pump Assemblies
   a. Inspect pump assemblies for security, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   b. Inspect electrical wiring for security, missing or damaged hardware, evidence of overheating or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair Boost Pump per DMWR 55-2915-296 when authorized by the Contracting Officer.

9. Main Tank Engine Feed Suction System
   a. Inspect check valve/bell-mouth assembly for security, missing or damaged hardware, evidence of corrosion, and for proper flow direction.
   b. Refer to WP 0003 Table 2 for tubing inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

10. Main Tank Fuel Shutout Valve
    a. Inspect valve for security, missing or damaged hardware, or evidence of corrosion.
    b. Refer to WP 0077 00 for corrosion removal and treatment.
    c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

11. Main Tank Boost Pump/Delta Pressure Check Valve
    a. Inspect pump assembly for security, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
    b. Inspect check valve for security, damage, corrosion, and for proper flow direction.
    c. Inspect wiring for securing and damage.
    d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
    e. Refer to WP 0077 00 for corrosion removal and treatment.
    f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
    g. Repair Boost Pump per DMWR 55-2915-296 when authorized by the Contracting Officer.
FUEL DELIVERY SYSTEM

NOTE
The item numbers in Figure 7 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for Fuel Delivery System.

INSPECTION REQUIREMENTS

Fuel Delivery System

1. Thermistor Control Unit
   a. Inspect control unit for security, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   b. Inspect wiring for security and damage.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DWMR 55-6680-333 when authorized by the Contracting Officer.

2. Fuel Pump Control Relay Box
   a. Inspect relay control box for security, missing or damaged hardware, evidence of overheating, or evidence of corrosion.
   b. Inspect connectors and wiring for security, damage, or evidence of corrosion.
Fuel Delivery System – continued

c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.

d. Refer to WP 0077 00 for corrosion removal and treatment.

e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

FUEL LOW LEVEL WARNING SYSTEM

![Diagram of Fuel Low Level Warning System]

Figure 8. Fuel Low Level Warning System

NOTE

The item number in Figure 8 reflects the Dual Control Unit in the following INSPECTION REQUIREMENTS for Fuel Low Level Warning System.

INSPECTION REQUIREMENTS

Fuel Low Level Warning System

Dual Control Unit

1. Inspect control unit for security, missing or damaged hardware, evidence of overheating, or evidence of corrosion.

2. Inspect electrical wiring and connectors for security, damage, or evidence of corrosion.
Fuel Low Level Warning System - continued

3. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
4. Refer to WP 0077 00 for corrosion removal and treatment.
5. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

ENGINE FUEL FEED SYSTEM

Figure 9. Engine Fuel Feed System

NOTE

The item numbers in Figure 9 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for Engine Fuel Feed System.

INSPECTION REQUIREMENTS

Engine Fuel Feed System

1. No. 1 and No. 2 Engine Fuel Feed Lines
   a. Inspect hose assemblies for security, missing or damaged hardware, leaks, or evidence of corrosion.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Engine Crossfeed Line
   a. Inspect hose assemblies for security, missing or damaged hardware, leaks, or evidence of corrosion.
   b. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
Engine Fuel Feed System - continued

c. Refer to WP 0077 00 for corrosion removal and treatment.
d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. No. 1 and No. 2 Engine Crossfeed Motor Valve
   a. Inspect valve for security, missing or damaged hardware, evidence of overheating, leaks, or evidence of corrosion.
   b. Inspect electrical wiring and connectors for security, damage, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 55-2915-168 when authorized by the Contracting Officer.

4. Defueling Valve
   a. Inspect valve for security, missing or damaged hardware, leaks, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. No. 1 and No. 2 Engine Fuel Pressure Switch
   a. Inspect pressure switch for security, missing or damaged hardware, evidence of overheating, leaks, or evidence of corrosion.
   b. Inspect electrical wiring and connectors for security, damage, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. No. 1 and No. 2 Engine Fuel Check Valve
   a. Inspect check valve for security, missing or damaged hardware, leaks, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. No. 1 and No. 2 Engine Fuel Motor Valve
   a. Inspect valve for security, missing or damaged hardware, evidence of overheating, leaks, or evidence of corrosion.
   b. Inspect electrical wiring and connectors for security, damage, or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 55-2915-168 when authorized by the Contracting Officer.

8. No. 1 and No. 2 Engine Fuel Flow Transmitter
   a. Inspect fuel flow transmitters for security, missing or damaged hardware, evidence of overheating, leaks, or evidence of corrosion.
   b. Inspect electrical wiring and connectors for security, damage, or evidence of corrosion.
Engine Fuel Feed System - continued

c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.
e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
f. Repair per DMWR 55-6620-326 when authorized by the Contracting Officer.

APU FUEL FEED SYSTEM

NOTE

The item numbers in Figure 10 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS for APU Fuel Feed System.

INSPECTION REQUIREMENTS

APU Fuel Feed System

1. APU Fuel Boost Pump
   a. Inspect boost pump for security, missing or damaged hardware, evidence of overheating, evidence of corrosion, or evidence of leaks.
   b. Inspect APU boost pump fuel hose assembly for security, damage, evidence of corrosion, or evidence of leaks.
   c. Inspect electrical wiring and connectors for security, damage, or evidence of corrosion.
APU Fuel Feed System - continued

d. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component for inspection and repair procedures.
f. Refer to WP 0077 00 for corrosion removal and treatment.
g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
h. Repair per DMWR 55-2910-200 when authorized by the Contracting Officer.

2. APU Quick Disconnect, sta 600
   a. Inspect quick disconnect for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. APU Manual Shutoff Valve, sta 540
   a. Inspect valve for security, damage, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. APU Fuel Lines
   a. Inspect fuel lines inside fuselage for security, missing or damaged hardware, evidence of corrosion, or evidence of leaks.
   b. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. APU Fuel Solenoid Valve
   a. Inspect valve for security, missing or damaged hardware, evidence of overheating, evidence of corrosion, or evidence of leaks.
   b. Inspect solenoid valve fuel hose assembly for security, damage, evidence of corrosion, or evidence of leaks.
   c. Inspect wiring and electrical connectors for security, damage, or evidence of corrosion.
   d. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
COCKPIT FLIGHT CONTROLS

INITIAL SETUP

Test Equipment:  
As Required

Tools and Special Tools:  
As Required

Material/Parts:  
As Required

Personnel Required:  
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1500-322-24
TM 55-1500-323-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:  
As Required

Special Environmental Condition:  
As Required

SCOPE

The pilot and copilot each have a set of flight controls. They are interconnected under the cockpit floor so that if one set is moved the other set moves in the same direction. Each set of controls contains a pitch and roll control stick (cyclic), a thrust control, yaw control pedals, and associated mechanical linkage.

INSPECTION REQUIREMENTS

![Figure 1. Cockpit Flight Controls](MS022541)
NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Control Assembly, Cyclic (Pilot and Copilot)
   a. Inspect the grip for cracks, nicks, looseness, or evidence of corrosion.
   b. Inspect the switches for proper detent and serviceability.
   c. Inspect electrical wire for excessive wear and connectors for damage.
   d. Inspect the tube for dents, scratches, or evidence of corrosion.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   f. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links, inspection and repair procedures.
   g. Refer to WP 0077 00 for corrosion removal and treatment.
   h. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Boots, Dust and Moisture, (Pilot and Copilot)
   a. Inspect for holes, cuts, and frayed or damaged Velcro strip.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Thrust Control Assembly (Pilot and Copilot)
   a. Inspect the grip for cracks, nicks, looseness, or evidence of corrosion.
   b. Inspect the switches for proper detent and serviceability.
   c. Inspect electrical wire for excessive wear and connectors for damage.
   d. Inspect the tube for dents, scratches, or evidence of corrosion.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   f. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links, inspection and repair procedures.
   g. Refer to WP 0077 00 for corrosion removal and treatment.
   h. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Boot Assembly, Control, (Pilot and Copilot)
   a. Inspect for holes, cuts and frayed or damaged Velcro strip.
   b. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Connecting Link Assembly, (CSI - WP 0160 00)
   a. Inspect rods for cracks, nicks, scratches, gouges, chafed areas, dents, out-of-roundness, or evidence of corrosion.
   b. Inspect rod ends for looseness.
   c. Inspect bearings for radial and axial play.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
INSPECTION REQUIREMENTS - continued

e. Refer to WP 0077 00 for corrosion removal and treatment.

f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Connecting Link Assembly

a. Inspect rods for cracks, nicks, scratches, gouges, chafed areas, dents, out-of-roundness, or evidence of corrosion.

b. Inspect rod ends for looseness.

c. Inspect bearings for radial and axial play.

d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.

e. Refer to WP 0077 00 for corrosion removal and treatment.

f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Transfer Controls Assembly

a. Inspect assembly for cracks, nicks, scratches, gouges, chafed areas, dents, out-of-roundness, or evidence of corrosion.

b. Inspect bearings for radial and axial play.

c. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.

d. Refer to WP 0077 00 for corrosion removal and treatment.

e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Control Assembly, (Pilot and Copilot, Control Box)

a. Inspect supports for scratches, nicks, cracks, chafed areas, holes, gouges, or evidence of corrosion.

b. Inspect links for loose swaged inserts, dents, thread damage, out-of-roundness, scratches, or evidence of corrosion.

c. Inspect bearings for radial and axial play

d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.

e. Refer to WP 0077 00 for corrosion removal and treatment.

f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

9. Cyclic Stick Pitch Position Indicator

a. Inspect for kinks, deformation of tubing, chafing marks, freedom of operation, or evidence of corrosion.

b. Inspect sight glass and gage for serviceability.

c. Refer to WP 0077 00 for corrosion removal and treatment.

d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CLOSET FLIGHT CONTROLS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1500-322-24
TM 55-1500-323-24
TM 55-1520-240-23 Series
DMWR 55-1680-341
DMWR 55-1680-350
DMWR 55-1680-351
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The integrated lower control actuators (ILCA), differential airspeed hold actuator (DASH), and two pallet assemblies are in the closet area. The pallet assemblies contain spring assemblies, magnetic brakes, cockpit control drive actuators (CCDA) with integral magnetic brakes, viscous dampers, and control position transducers. The spring assemblies and magnetic brakes provide artificial feel to the cockpit controls. Connecting links in the upper closet with Improved Heat Resistance of Flight Control System Bellcranks and Rods, have a special coating that increases their resistance to heat and fire. The dash actuator installed on the pitch control system consists of two electromechanical linear actuators mounted on an aluminum tube. Both actuators receive identical control signals from the Advanced Flight Control System (AFCS), which extends or retracts the actuators to position the helicopter as required by the control stick movements and to maintain the desired airspeed.
NOTE

The item numbers in Figure 1, sheets 1 through 4, correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Closet Flight Controls (Sheet 1 of 4)

1. Connection Link, Rigid (CSI - WP 0160 00)
   a. Inspect rod for cracks, dents, nicks, scratches, scores, out-of-roundness, or evidence of corrosion.
   b. Inspect rod ends for nicks, scratches, and loose fittings. Inspect bearing for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Actuator, Electromechanical (Dash Actuator) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, evidence of overheating, or evidence of corrosion.
   b. Inspect rod end bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1680-351 when authorized by the Contracting Officer.
INSPECTION REQUIREMENTS – continued

3. Link Assembly, Auxiliary (CSI - WP 0160 00)
   a. Inspect for nicks, scratches, scores, dents, chafed areas, or evidence of corrosion.
   b. Inspect bearing for radial and axial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Viscous Damper, Yaw (CSI - WP 0160 00)
   a. Inspect for leaks, cracks, dents, scratches, nicks, or evidence of corrosion.
   b. Inspect damper lever bearings for radial and axial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS – continued

5. Pallet Assembly, Support (CSI - WP 0160 00)
   a. Inspect for delaminations, cracks, dents, loose or missing inserts, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Potentiometer (T55-L-712 Engine)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, evidence of overheating, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Support Assembly (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.
   b. Inspect bushings for wear.
   c. Inspect for loose, missing, or damaged attaching or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Idler Assembly, Thrust and Support (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

9. Transducer (T55-GA-714A Engine)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, evidence of overheating, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

10. Viscous Damper, Thrust (CSI - WP 0160 00)
   a. Inspect for leaks, cracks, dents, scratches, nicks, or evidence of corrosion.
   b. Inspect damper lever bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

11. Actuator, Electromechanical (Thrust CCDA Actuator) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, dents, chafed areas, evidence of overheating, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1680-350 when authorized by the Contracting Officer.

12. Magnetic Brake, Yaw (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, dents, chafed areas, evidence of overheating, or evidence of corrosion.
   b. Inspect lever for looseness and security.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   g. Repair per DMWR 55-1680-341 when authorized by the Contracting Officer.

13. Transducer, Linear (Yaw) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, dents, chafed areas, evidence of overheating, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

14. Idler Assembly, Yaw (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.
INSPECTION REQUIREMENTS – continued

b. Inspect bearings for axial and radial play.
c. Inspect for loose, missing, or damaged attaching hardware.
d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
e. Refer to WP 0077 00 for corrosion removal and treatment.
f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

15. Housing Assembly, Spring (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

16. Actuator, Electromechanical (Pitch CCDA Actuator) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, dents, chafed areas, evidence of overheating, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS – continued

d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
f. Refer to WP 0077 00 for corrosion removal and treatment.
g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
i. Repair per DMWR 55-1680-350 when authorized by the Contracting Officer.

17. Pallet Assembly, Support (CSI - WP 0160 00)
a. Inspect for delaminations, cracks, dents, loose or missing inserts, or evidence of corrosion.
b. Inspect for loose, missing, or damaged attaching hardware.
c. Refer to WP 0077 00 for corrosion removal and treatment.
d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

18. Viscous Damper, Roll (CSI - WP 0160 00)
a. Inspect for leaks, cracks, dents, scratches, nicks, or evidence of corrosion.
b. Inspect damper lever bearings for axial and radial play.
c. Inspect for loose, missing, or damaged attaching hardware.
d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
e. Refer to WP 0077 00 for corrosion removal and treatment.
f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

19. Viscous Damper, Pitch (CSI - WP 0160 00)
a. Inspect for leaks, cracks, dents, scratches, nicks, or evidence of corrosion.
b. Inspect damper lever bearings for axial and radial play.
c. Inspect for loose, missing, or damaged attaching hardware.
d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
e. Refer to WP 0077 00 for corrosion removal and treatment.
f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

20. Housing Assembly, Spring (CSI - WP 0160 00)
a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.
b. Inspect bearings for axial and radial play.
c. Inspect for loose, missing, or damaged attaching hardware.
d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
e. Refer to WP 0077 00 for corrosion removal and treatment.
f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

21. Brake, Electromechanical (CSI - WP 0160 00)
a. Inspect for cracks, nicks, scratches, scores, dents, chafed areas, evidence of overheating, or evidence of corrosion.
b. Inspect lever for looseness and security.
c. Inspect for loose, missing, or damaged attaching hardware.
INSPECTION REQUIREMENTS – continued

d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.

e. Refer to WP 0077 00 for corrosion removal and treatment.

f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

g. Repair per DMWR 55-1680-341 when authorized by the Contracting Officer.

22. Support Assembly (CSI - WP 0160 00)

a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.

b. Inspect bushings for wear.

c. Inspect for loose, missing, or damaged attaching hardware.

d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.

e. Refer to WP 0077 00 for corrosion removal and treatment.

f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

23. Idler Assembly, Roll (CSI - WP 0160 00)

a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.

b. Inspect bearings for axial and radial play.

c. Inspect for loose, missing, or damaged attaching hardware.

d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.

e. Refer to WP 0077 00 for corrosion removal and treatment.

f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

24. Transducer, Linear (Roll) (CSI - WP 0160 00)

a. Inspect for cracks, nicks, scratches, scores, chafed areas, evidence of overheating, or evidence of corrosion.

b. Inspect bearings for axial and radial play.

c. Inspect for loose, missing, or damaged attaching hardware.

d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.

e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.

f. Refer to WP 0077 00 for corrosion removal and treatment.

g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

25. Transducer, Linear (Pitch) (CSI - WP 0160 00)

a. Inspect for cracks, nicks, scratches, scores, chafed areas, evidence of overheating, or evidence of corrosion.

b. Inspect bearings for axial and radial play.

c. Inspect for loose, missing, or damaged attaching hardware.

d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.

e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.

f. Refer to WP 0077 00 for corrosion removal and treatment.

g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS – continued

26. Idler Assembly, Pitch (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

27. Connecting Link (CSI - WP 0160 00)
   a. Inspect rod for cracks, dents, nicks, scratches, scores, out-of-roundness, or evidence of corrosion.
   b. Inspect rod ends for nicks, scratches, and loose fittings. Inspect bearing for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS – continued

28. Idler Assembly, Pitch (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.
   b. Inspect bearings for axial and radial play and bushings for wear.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

29. Idler Assembly (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.
   b. Inspect bearings for axial and radial play and bushings for wear.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

30. Link Assembly (CSI - WP 0160 00)
   a. Inspect for nicks, scratches, scores, dents, chafed areas, or evidence of corrosion.
   b. Inspect bushings for wear and bearing for radial and axial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

31. Bellcrank (CSI - WP 0160 00)
   a. Inspect for nicks, scratches, scores, dents, chafed areas, or evidence of corrosion.
   b. Inspect bearing for radial and axial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1500-322-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The first stage controls are above the closet controls between sta 95 and sta 120. The second stage controls are aft of the forward transmission mounting structure. The first and second stage controls are connected by four connecting links. The first and second stage controls consist of bellcranks and linkages, which mix inputs from the thrust, pitch, roll, and yaw control motions into two motions. These two motions are transmitted directly to the forward and aft controls.

INSPECTION REQUIREMENTS

Figure 1. Mixing Flight Controls
INSPECTION REQUIREMENTS - continued

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Connecting Link, Rigid (CSI - WP 0160 00)
   a. Inspect rod for cracks, dents, nicks, scratches, scores, out-of-roundness, or evidence of corrosion.
   b. Inspect rod ends for nicks, scratches, and loose fittings. Inspect bearing for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Mixing Controls, Second Stage (CSI - WP 0160 00)
   a. Inspect bellcranks for cracks, nicks, scratches, scores, or evidence of corrosion.
   b. Inspect bushings for wear and bearings for radial and axial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Mixing Controls, First Stage (CSI - WP 0160 00)
   a. Inspect bellcranks for cracks, nicks, scratches, scores, or evidence of corrosion.
   b. Inspect bushings for wear and bearings for radial and axial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT  
CH-47D HELICOPTER  
FORWARD UPPER FLIGHT CONTROLS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DMWR 55-1615-316
DMWR 55-1680-289
TM 1-1500-204-23 Series
TM 55-1500-322-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The forward upper flight controls are forward of the second stage controls on either side of the forward transmission. Links and bellcranks direct control motion to control valves located in two dual servo cylinders. The servo cylinders are connected to the forward transmission and the swashplate. A longitudinal cyclic trim (LCT) actuator, yoke, and fixed link are part of the forward flight controls, and are located on the aft side and below the forward swashplate.
INSPECTION REQUIREMENTS

Figure 1. Forward Upper Flight Controls

0055 00-2
NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Connecting Link, Rigid (CSI - WP 0160 00)
   a. Inspect rod for cracks, dents, nicks, scratches, scores, out-of-roundness, or evidence of corrosion.
   b. Inspect rod ends for nicks, scratches, and loose fittings. Inspect bearing for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Bellcrank Assembly (CSI - WP 0160 00)
   a. Inspect for nicks, scratches, scores, dents, chafe areas, or evidence of corrosion.
   b. Inspect bushings for wear and bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Support Assembly, Pylon (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Actuator, Electromechanical (Fwd LCT Actuator) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, evidence of overheating, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1680-289 when authorized by the Contracting Officer.
INSPECTION REQUIREMENTS - continued

5. Yoke Assembly, (Fwd LCT Yolk) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, or evidence of corrosion.
   b. Inspect bushings for wear and bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Link Assembly, Swashplate (Fwd LCT Connecting Link) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, evidence of overheating, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1615-316 when authorized by the Contracting Officer.

END OF WORK PACKAGE
# DEPOT MAINTENANCE WORK REQUIREMENT
## CH-47D HELICOPTER
### TUNNEL FLIGHT CONTROLS

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## SCOPE

The tunnel controls are a series of connection links, idlers, and control arms mounted on top of the cabin section. The tunnel controls transmit second stage control motion to the aft flight controls.
Figure 1. Tunnel Flight Controls
INSPECTION REQUIREMENTS - continued

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Link Assembly (Stainless Steel) (CSI - WP 0160 00)
   a. Inspect for nicks, dents, cracks, scratches, scores, loose or oversize rivets on rods, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect the electrical lead ground wires for fraying, looseness, or evidence of corrosion.
   d. Inspect bearings for axial and radial play.
   e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Beam Assembly, Walking (Arm, Control) (CSI - WP 0160 00)
   a. Inspect for nicks, dents, cracks, scratches, scores, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect bearings for axial and radial play.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Idler Assembly (CSI - WP 0160 00)
   a. Inspect for nicks, dents, cracks, scratches, scores, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect bearings for axial and radial play.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT FUSELAGE AND AFT UPPER FLIGHT CONTROLS

INITIAL SETUP

Test Equipment: As Required
Tools and Special Tools: As Required
Material/Parts: As Required
Personnel Required: Examiner (PSA)

References:
DMWR 55-1615-316
DMWR 55-1680-289
TM 1-1500-204-23 Series
TM 55-1500-322-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions: As Required

Special Environmental Condition: As Required

SCOPE

The aft controls are in the aft pylon. Connecting links and bellcranks transmit tunnel motion to control valves located in two dual servo-cylinders. The servo-cylinders are connected to the structure and the controllable swashplate. A longitudinal cyclic trim (LCT) actuator, yoke, and forward fixed link are part of the aft flight controls and are located on the forward side and below the aft swashplate.
INSPECTION REQUIREMENTS

NOTE

The item numbers in Figure 1, sheets 1 and 2, correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Aft Fuselage and Aft Upper Flight Controls (Sheet 1 of 2)

1. Connecting Link Rigid (CSI - WP 0160 00)
   a. Inspect rod for cracks, dents, nicks, scratches, scores, out-of-roundness, or evidence of corrosion.
   b. Inspect rod end for nicks, scratches, and loose fittings. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

2. Bellcrank Assembly *(CSI - WP 0160 00)*
   a. Inspect for cracks, nicks, scratches, scores, or evidence of corrosion.
   b. Inspect bushings for wear and bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Bellcrank Assembly *(CSI - WP 0160 00)*
   a. Inspect for cracks, nicks, scratches, scores, or evidence of corrosion.
   b. Inspect bushings for wear and bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS - continued

4. Connecting Link Assembly (CSI - WP 0160 00)
   a. Inspect for cracks, dents, nicks, scratches, scores, out-of-roundness, or evidence of corrosion.
   b. Inspect rod ends for nicks, scratches, and loose fittings. Inspect bearing for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Yoke Assembly (Aft LCT Yolk) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, or evidence of corrosion.
   b. Inspect bushings for wear and bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Link Assembly, Swashplate (Aft LCT Connecting Link) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, chafed areas, evidence of overheating, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1615-316 when authorized by the Contracting Officer.

7. Actuator, Electromechanical Linear (Aft LCT Actuator) (CSI - WP 0160 00)
   a. Inspect for cracks, nicks, scratches, scores, evidence of overheating, or evidence of corrosion.
   b. Inspect bearings for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0003 00, Table 6, for control rods, tube assemblies, and connecting links inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-1680-289 when authorized by the Contracting Officer.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
ADVANCED FLIGHT CONTROL SYSTEM

INITIAL SETUP

| Test Equipment: | References:                     |
|                | As Required                     |
|                | TM 1-1500-204-23 Series        |
|                | TM 55-1520-240-23 Series       |
|                | WP 0003 00                     |
|                | WP 0044 00                     |
| Tools and Special Tools: | WP 0053 00 |
|                | WP 0055 00                     |
|                | WP 0057 00                     |
| Material/Parts: | WP 0077 00                     |
|                | As Required                     |
| Personnel Required: | Equipment Conditions:         |
| Examiner (PSA) | As Required                     |
|                | Special Environmental Condition: |
|                | As Required                     |

SCOPE

The Advanced Flight Control System (AFCS) stabilizes the helicopter about all axis and enhances control response. It automatically maintains desired airspeed, altitude, bank angle, and heading. An automatic turn feature, coupled to the pilot or copilot horizontal situation indicator (HSI) is also included in the AFCS.

The AFCS consists of the following components:
1. A cockpit control panel.
2. Two AFCS computers in the avionics compartment.
3. Three integrated lower control actuators (ILCA).
4. A differential airspeed hold (DASH) actuator in the flight controls closet.
5. Two longitudinal cyclic trim (LCT) actuators; one in the forward upper controls and the other in the aft upper controls.
6. Roll and yaw magnetic brakes, a longitudinal cockpit control driver actuator (CCDA), and a thrust CCDA. All are located in the flight control closet.
7. Three control position transducers.

Attitude changes sensed by the attitude gyros, a yaw rate gyro in each AFCS computer, and the directional gyro are processed by the AFCS computers and applied to the ILCA’s. The ILCA’s extend or retract and move the upper flight controls. This control input is not apparent to the pilot because AFCS control inputs do not move the cockpit controls. The pitch, roll, and yaw axis all operate in fundamentally the same manner. Should a hard over occur, the pilot can easily override the AFCS. Pitch attitude stability, airspeed hold, and a positive stick gradient from hover to maximum forward velocity are provided through the DASH actuator. The DASH actuator extends or retracts to maintain airspeed for a given stick position.

Built In Test Equipment (BITE) is installed in each AFCS computer. This equipment is intended for ground troubleshooting purposes only. An interlock circuit through the engine condition control box prevents BITE use anytime either engine condition lever (ECL) is out of STOP.
INSPECTION REQUIREMENTS

Figure 1. Advanced Flight Control System
INSPECTION REQUIREMENTS – continued

NOTE
The items in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. AFCS Panel
   a. Inspect for cracks, dents, scratches, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria, and repair procedures.

2. AFCS Computers
   a. Inspect for cracks, dents, scratches, arcing, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria, and repair procedures.

3. Integrated Lower Control Actuator, Pitch
   Refer to WP 0044 00 for accept/reject criteria and repair procedures.

4. Integrated Lower Control Actuator, Yaw
   Refer to WP 0044 00 for accept/reject criteria and repair procedures.

5. Integrated Lower Control Actuator, Thrust
   Refer to WP 0044 00 for accept/reject criteria and repair procedures.

6. Differential Airspeed Hold (DASH), Actuator
   Refer to WP 0053 00 for accept/reject criteria and repair procedures.

7. Integrated Lower Control Actuator, Roll
   Refer to WP 0044 00 for accept/reject criteria and repair procedures.

8. Longitudinal Cyclic Trim (LCT) Actuator, AFT
   Refer to WP 0057 00 for accept/reject criteria and repair procedures.

9. Longitudinal Cyclic Trim (LCT) Actuator, FWD
   Refer to WP 0055 00 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
WINDSHIELD SYSTEM

INITIAL SETUP

Test Equipment: As Required
Tools and Special Tools: As Required
Material/Parts: As Required
Personnel Required: Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1500-323-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00
WP 0091 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The windshield system consists of the three windshields, three switches on the overhead anti-ice panel, and three relays and control boxes behind the nose dynamic absorber. Each windshield is made of laminated layers with an imbedded temperature sensor. The inner surface of the outside layer is a transparent heating element. When the overhead anti-ice switches are operated, current passes through the transparent element, heating the windshield. The windshield anti-icing system operates independently on the three cockpit windshields. The pilot and copilot’s windshields have anti-icing and anti-fogging systems. The center windshield has an anti-fogging system only. Electrical circuits for the three windshields are identical, except that the cut-in temperature for the center windshield is lower than the outer windshields.
NOTE

The item numbers in Figure 1, sheets 1 through 3 correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Windshield System (Sheet 1 of 3)
INSPECTION REQUIREMENTS - continued

1. Copilot’s Windshield
   a. Inspect windshield for security, cracks (no cracks allowed), scratches, pitting, gouges, and discoloration.
   b. Inspect wiring to the windshield terminal for security, arcing, breaks, or evidence of corrosion.
   c. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to WP 0091 00 for windshield repair procedures.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Center Windshield
   a. Inspect windshield for security, cracks (no cracks allowed), scratches, pitting, gouges, and discoloration.
   b. Inspect wiring to the windshield terminal for security, arcing, breaks, or evidence of corrosion.
   c. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to WP 0091 00 for windshield repair procedures.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Pilot’s Windshield
   a. Inspect windshield for security, cracks (no cracks allowed), scratches, pitting, gouges, and discoloration.
   b. Inspect wiring to the windshield terminal for security, arcing, breaks, or evidence of corrosion.
   c. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to WP 0091 00 for windshield repair procedures.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Figure 1. Windshield System (Sheet 2 of 3)
INSPECTION REQUIREMENTS - continued

4. Copilot’s Anti-Icing Relay
   a. Inspect for security, cracks, arcing, discoloration, or evidence of corrosion.
   b. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Pilot’s Anti-Icing Relay
   a. Inspect for security, cracks, arcing, discoloration, or evidence of corrosion.
   b. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Copilot’s Windshield Anti-Icing Control Box
   a. Inspect for security, cracks, arcing, discoloration, or evidence of corrosion.
   b. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Pilot’s Windshield Anti-Icing Control Box
   a. Inspect for security, cracks, arcing, discoloration, or evidence of corrosion.
   b. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Center Windshield Anti-Icing Control Box
   a. Inspect for security, cracks, arcing, discoloration, or evidence of corrosion.
   b. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

9. Center Anti-Icing Relay
   a. Inspect for security, cracks, arcing, discoloration, or evidence of corrosion.
   b. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
Figure 1. Windshield System (Sheet 3 of 3)
INSPECTION REQUIREMENTS - continued

10. Windshield Wiper Arms
   a. Inspect for cracks, bends, security, or evidence of corrosion.
   b. Inspect wiper arm for sufficient pressure against windshield.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

11. Windshield Wiper Blades
   a. Inspect for cracks, tears, security, condition of rubber wiper, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

12. Mechanical Actuators (Converters), LH and RH
   a. Inspect for security, cracks, loose, missing, or damaged attaching hardware, or evidence of corrosion.
   b. Inspect for proper operation.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

13. Flexible Shaft Assembly
   a. Inspect for security, cracks, kinks, unraveling of casing on shaft, or evidence of corrosion.
   b. Inspect for proper operation.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

14. Windshield Wiper Motor
   a. Inspect for security, cracks, arcing, discoloration, or evidence of corrosion.
   b. Inspect for proper operation.
   c. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FIRE DETECTION SYSTEM

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1500-323-24
TM 55-1520-240-23 series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The fire detection system consists of a fire detection loop routed around each engine, a control unit for each of the two loops, and a test switch and indicator lights in the cockpit. Each fire detection loop consists of three sensing elements joined by connectors. Each element consists of a thin metallic tube with a wire running through the center, insulated from the tubing by a salt imbedded in a ceramic matrix. The resistance of the insulating salt drops and the salt becomes conductive at about 575 degrees F (302 degrees C). The tubing is connected to ground. The central wire is connected to the control unit. The three elements have a combined length of about 19 feet. The two control units are mounted in the cabin at sta 482 left and right. Each unit contains an AC powered magnetic amplifier and DC test circuit. Each unit is connected to its respective fire detection loop. The units are sealed, and maintenance is limited to replacement. A fire indicating light for each engine is located in the respective fire extinguisher handle on the cockpit center instrument panel. A test switch between the fire pull handles allows the light and electrical circuits to be checked.
NOTE

The item numbers in Figures 1 through 3 correspond to the respective item numbers in the INSPECTION REQUIREMENTS following the illustrations.

Figure 1. Fire Detection Controls
Figure 2. Fire Detection Sensing Elements, 712 Engine
Figure 3. Fire Detection Sensing Elements, 714 Engine
NOTE

Refer to TM 55-1500-323-24 for repair or replacement of aircraft electrical and electronic wiring.

1. Fire Detection Controls, LH and RH
   a. Inspect for security, missing or damaged hardware, cracks (no cracks allowed), arcing, or evidence of corrosion.
   b. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria.

2. Element Connectors
   a. Inspect for security, missing or damaged hardware, cracks (no cracks allowed), arcing, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria.

3. Sensing Elements
   a. Inspect for security, kinked sections, missing or damaged hardware, breaks (no breaks allowed), arcing, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FIRE EXTINGUISHING SYSTEM

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DMWR 55-1680-246
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The fire extinguishing system includes two fire extinguishing agent containers, four discharge nozzles (one to each engine from each bottle), controls and switches in the cockpit, and associated tubing, wiring, and circuit breakers. Two containers filled with fire extinguishing agent are mounted in the base of the aft pylon, between the engines. In case of an engine fire, extinguishing agent in the containers can be discharged independently to the affected engine from the cockpit. Each container is a metal sphere that holds a three-pound charge of non-toxic extinguishing agent. The agent is pre-charged with nitrogen at 600 psi, and monitored by a gage on the bottle. Separate lengths of tubing lead from the bottle to each engine, ending in a pair of discharge nozzles in each engine compartment. The two containers share the nozzles at each engine. The discharge paths are kept separate by a double check valve and tee where the tubing from each container joins. Two pull handles control discharge of extinguishing agent to the engines, one for each engine, and a toggle switch on the center instrument panel. Pulling a handle shuts off fuel to that engine and arms the circuit to the containers.
INSPECTION REQUIREMENTS

Figure 1. Fire Extinguisher Containers
INSPECTION REQUIREMENTS – continued

**WARNING**

**EXPLOSIVE**

When not mounted in helicopter, fire extinguishers (bottles) can become dangerous missiles if discharged. Do not detonate, discharge, or abuse fire extinguishers. Injury to personnel can result. Remove cartridges (squibs) when extinguishers are removed for storage.

**NOTE**

The item numbers in Figure 1 correspond to the respective items in the following INSPECTION REQUIREMENTS.

1. Fire Extinguisher, No. 1 and No. 2
   a. Inspect extinguisher for security, damage, nicks, cracks (no cracks allowed), chafing, scoring, scratches, dents or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Inspect gage for security, breaks, damage, and ensure pressure reading is within limits.
   d. Weigh extinguisher without the caps or protective plugs and compare weight-to-weight marked on decal.
   e. Check helicopter DA Form 2408-18 for servicing dates of extinguisher.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair procedures.
   h. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   i. Repair as per DMWR 55-1680-246 when authorized by the Contracting Officer.
INAPECTIOH REQUIREMENTS – continued

2. Cartridge, Engine Fire Extinguisher (Squib)

WARNING

EXPLOSIVE

Cartridge is an explosive device and is dangerous to personnel. Be sure the electrical terminal is shunted to the ground terminal before the cartridge is removed. Place the cartridge in a protective container.

a. Inspect cartridge for general condition or evidence of corrosion.
b. Store IAW local procedures for explosive devices.
c. Check the helicopter DA Form 2408-18 for cartridge retirement date.
d. Refer to TM 55-1520-240-23 for accept/reject criteria.
NOTE

The item number in Figure 2 corresponds to the following INSPECTION REQUIREMENT.

3. Tubing
   a. Inspect for cracks (no cracks allowed), nicks, scratches, dents, or evidence of corrosion.
   b. Inspect fittings for thread damage, general condition, or evidence of corrosion.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to WP 0003 00 Table 2 for tubing inspection and repair procedures.

END OF WORK PACKAGE

0061 00-5/(6 blank)
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
ENVIRONMENTAL CONTROL SYSTEM

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 55-1500-323-24
TM 55-1520-240-23 Series
DMWR 1-1660-206
DMWR 55-1680-225
WP 0003 00
WP 0077 00
WP 0092 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The environmental system provides heat and ventilation for the helicopter. The system consists of a heater, fan, exhaust, ignition unit, control switches, temperature controller, thermostat, cockpit and cabin ducting, and fuel delivery components.

The heater is located right hand forward of cabin, sta 95 to sta 120. It is capable of 200,000-BTU/HR output. The fuel control unit draws fuel from the right side fuel system and controls flow to the heater. The fan draws air from outside and forces it through the heater. Some air is mixed with fuel for the heater and some is heated and sent through a duct network. The fan can provide fresh air for ventilation. The heater system is protected from overheating by three thermostatic switches. A differential air pressure switch shuts down the heater when there is not enough air for safe operation. The thermostat located on the left hand side of the cabin, sta 335, maintains a steady temperature by causing the heater control relay located at sta 95 to open and close as the temperature fluctuates. Heat and ventilation push-pull controls are located in the cockpit.
NOTE

The item numbers in Figure 1, sheets 1 and 2 correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Environmental Control System (Sheet 1 of 2)
INSPECTION REQUIREMENTS - continued

1. Heater Control Relay and Thermostat
   a. Inspect for cracks (no cracks allowed), dents, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Air Inlet Duct
   a. Inspect heater intake screen and duct for cracks (no cracks allowed), dents, tears, or evidence of corrosion.
   b. Inspection for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to WP 0092 00 for spot welded parts repair procedures.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Heater Fuel Control
   a. Inspect for cracks (no cracks allowed), dents, scratches, leaks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   g. Repair per DMWR 55-1680-225 when approved by the Contracting Officer.

4. Exhaust Pipe and Shroud
   a. Inspect exhaust pipe and shroud (shroud removed) for evidence of overheating, cracks (no cracks allowed), tears, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Heater Ignition Unit
   a. Inspect for cracks (no cracks allowed), dents, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   f. Repair per DMWR 1-1660-206 when authorized by the Contracting Officer.
6. Thermostatic Switches
   a. Inspect for cracks (no cracks allowed), dents, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Heater Unit
   a. Inspect heater drain for proper installation and obstructions.
   b. Inspect heater and ducting for cracks (no cracks allowed), dents, evidence of overheating, tears, or evidence of corrosion.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Remove, clean, and inspect spark plug.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to WP 0092 00 for spot welded parts repair procedures.
   g. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Air Pressure Switch
   a. Inspect for cracks (no cracks allowed), dents, scratches, leaks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria repair procedures.

9. Heater Fan
   a. Inspect for cracks (no cracks allowed), dents, binding, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
10. Air Control Push-Pull Controls
   a. Inspect for cracks (no cracks allowed), dents, binding, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS – continued

11. Cabin Thermostat
   a. Inspect for cracks (no cracks allowed), dents, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CARGO HANDLING/RESCUE WINCH SYSTEM

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DMWR 55-1680-133
TM 1-1500-204-23 Series
TM 1-1520-240-10
TM 55-1500-323-24
TM 55-1520-240-23 series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The cargo handling system consists of a hydraulically operated winch and cable (150 feet, ¼-inch steel), a cable cutter, tackle blocks, and a remote-control grip and safety harness. Stowage bags in the heater compartment are provided for the cable cutter and tackle blocks when not in use. System power and control is provided through various hydraulic valves, electrical switches and receptacles. The heart of the cargo handling system is the winch, mounted to the floor of the heater compartment at the right forward corner of the cabin. It is powered by hydraulic pressure from the utility hydraulic system. By changing cable routing, the winch can be used to perform several different functions. Refer to TM 1-1520-240-10 for information on configuring aircraft for the following functions:

1. Loading cargo into the cabin through the open cargo door
2. Carrying or bringing on-board cargo through the open rescue hatch while in the air
3. Personnel rescue operations
4. Parachute static line retrieval
Figure 1. Cargo Handling/Rescue Winch System
INSPECTION REQUIREMENTS – continued

NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following INSPECTION REQUIREMENTS.

1. Cable
   a. Inspect the cable for bends, kinks, fraying, crushed or broken strands, or evidence of corrosion.
   b. Inspect the cable for 20 feet of red paint on both ends.
   c. Inspect the cable ball for security, damage, or evidence of corrosion.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.

2. Motor
   a. Inspect the motor for evidence of leaks, security, damage, discoloration, or evidence of corrosion.
   b. Inspect motor for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Table 3, for hose inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Winch
   a. Inspect the winch for security, damage, cracks, dents, evidence of overheating, or evidence of corrosion.
   b. Inspect winch for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.
   f. Repair per DMWR 55-1680-133 when authorized by the Contracting Officer.

4. Auxiliary Control Panel, sta 95
   a. Inspect the cable cutter and hoist control receptacles for cracks, scratches, gouges, identification markings, burned areas, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Hoist Operators Panel, sta 320
   a. Inspect the cable cutter and hoist control receptacles for cracks, scratches, gouges, identification markings, burned areas, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS – continued

6. Hoist Control Receptacle, sta 502
   a. Inspect the cable cutter and hoist control receptacles for cracks, scratches, gouges, identification markings, burned areas, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

7. Cable Cutter Receptacle, sta 340 Ceiling
   a. Inspect the cable cutter and hoist control receptacles for cracks, scratches, gouges, identification markings, burned areas, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Stowage Container (Bags)
   a. Inspect stowage container for proper installation, missing or damaged hardware, security, holes, tears, or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AUXILIARY POWER UNIT (APU)

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DMWR 1-6115-511
DMWR 55-1650-398
DMWR 55-2835-205
DMWR 55-6115-496
TM 1-1500-204-23 Series
TM 1-1520-240-10
TM 55-1500-322-24
TM 55-1500-323-24
TM 55-1520-240-23 Series
TM 55-2835-205-23
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The auxiliary power unit (APU) is a gas turbine engine that provides hydraulic and electrical power for engine starting and ground checks. The complete APU system includes the APU, electronic sequence unit (ESU), switches and relays, start module, and start accumulator. Fuel supply components include a fuel valve, boost pump, and manual shutoff valve.

A hydraulic motor-pump is mounted on the front of the APU. To start the APU, the motor-pump is driven by pressurized hydraulic fluid supplied by the start accumulator. An AC generator is driven by the APU to supply power to the electrical system during ground operation. The ESU is a microprocessor with built-in test equipment (BITE) that monitors the APU operation. The ESU can stop the APU and show a fault display that gives reason for shutdown.
AUXILIARY POWER UNIT (APU) INSPECTION REQUIREMENTS

Figure 1. Auxiliary Power Unit
AUXILIARY POWER UNIT (APU) INSPECTION REQUIREMENTS – continued

NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following APU INSPECTION REQUIREMENTS.

1. Link Assembly (Lateral Aft)
   a. Inspect rod for cracks, dents, nicks, scratches, scores, out-of-roundness, or evidence of corrosion.
   b. Inspect rod ends for nicks, scratches, and loose fittings. Inspect bearing for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00 Table 6 for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

2. Clevis Assembly
   a. Inspect for cracks, nicks, scratches, or evidence of corrosion.
   b. Inspect bushing for wear.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00 Table 6 for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

3. Auxiliary Power Unit
   a. Inspect screen for loose, missing, or cracked lacing hooks, dents, debris, and breaks in screen wire.
   b. Inspect engine for cracks, dents, chafed areas, frays, burns, or evidence of corrosion.
   c. Inspect for loose, missing, damaged, and improper hardware.
   d. Refer to WP 0003 00 Tables 2 and 3 for tubing and hose inspection and repair procedures.
   e. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component inspection and repair procedures.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
   g. Refer to TM 55-2835-205-23 for accept/reject criteria and repair procedures.
   h. Repair per DMWR 55-2835-205 when authorized by the Contracting Officer.

4. Link Assembly (Vertical Aft)
   a. Inspect rod for cracks, dents, nicks, scratches, scores, out-of-roundness, or evidence of corrosion.
   b. Inspect rod ends for nicks, scratches, and loose fittings. Inspect bearing for axial and radial play.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00 Table 6 for control rods, tube assemblies, and connecting links inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

5. Link Assembly
   a. Inspect for cracks, nicks, scratches, scores, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
AUXILIARY POWER UNIT (APU) INSPECTION REQUIREMENTS – continued

c. Refer to WP 0003 00 Table 6 for control rods, tube assemblies, and connecting links inspection and repair procedures.
d. Refer to WP 0077 00 for corrosion removal and treatment.
e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. APU Generator
   Refer to WP 0050 00 for inspection criteria.

7. Trunnion Support
   a. Inspect for cracks, nicks, scratches, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Hose Assemblies
   a. Inspect for cracks, nicks, dents, scratches, leaks, or evidence of corrosion.
   b. Inspect for missing, loose, or damaged attaching hardware.
   c. Refer to WP 0003 00 Table 3 for hose inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

9. APU Motor Pump
   Refer to WP 0045 00 for inspection criteria.
NOTE

The item number in Figure 2 corresponds to the respective item number in the following ESU INSPECTION REQUIREMENTS.

1. Electronic Sensing Unit
   a. Inspect for cracks, gouges, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect BITE indicators for broken glass.
   c. Inspect missing, loose, or damaged attaching hardware.
   d. Refer to WP 0003 00 Tables 4 and 5 for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

END OF WORK PACKAGE
## INITIAL SETUP

**Test Equipment:**
As Required

**Tools and Special Tools:**
As Required

**Material/Parts:**
As Required

**Personnel Required:**
Examiner (PSA)

## References:
- TM 1-1500-204-23 Series
- TM 55-1500-323-24
- TM 55-1520-240-23 Series
- WP 0003 00
- WP 0077 00

## Equipment Conditions:
As Required

## Special Environmental Condition:
As Required

## SCOPE

The external cargo hook system consists of three separate cargo hooks mounted on the underside of the helicopter. The system allows a single load to be suspended at up to three points or three separate loads to be carried at the same time.

The center cargo hook is suspended from a beam under the cabin floor at sta 331. The hook is attached to a beam with a bolt that allows the hook to swing side to side. The beam is carried in bearings attached to structure at the sides of the rescue hatch. It can pivot forward and aft from the attaching points. When not in use, the hook is stowed between the cabin floor and the rescue hatch door. In use, the hatch door is opened and the hook is unstrapped to hang down through the open hatch. The hook lifting capacity is 26,000 pounds.

The forward and aft hooks are suspended from fittings attached to the floor beams at sta 249 and sta 409. Each fitting is a universal type that allows the hook to swing forward and aft and from side to side. The lifting capacity of each hook is 17,000 pounds. When used together, the two hooks can lift a combined load of 25,000 pounds.

All three hooks can be released in any one of three modes – normal, emergency, or manual.
NOTE

The item numbers in Figure 1, sheets 1 through 3 correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. External Cargo Hook System (Sheet 1 of 3)
INSPECTION REQUIREMENTS - continued

1. Emergency Hook Release Relay Box, sta 270, Left Side
   a. Inspect for cracks, dents, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.

2. Dual Hook Relay Box, sta 270, Right Side
   a. Inspect for cracks, dents, scratches, evidence of overheating or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.

3. Hoist Operator Panel
   Refer to WP 0063 00 for inspection criteria.

4. Emergency Release Assembly
   a. Inspect for cracks, dents, scratches, bent handle, binding, or evidence of corrosion.
   b. Inspect cable assemblies for general condition or evidence of corrosion.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.

5. Center Cargo Hook
   a. Inspect for cracks, dents, scratches, leaks, evidence of arcing, proper operation, or evidence of corrosion.
   b. Inspect electrical switches for general condition, evidence of overheating, or evidence of corrosion.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Inspect actuator gage for damage and proper charge.
   e. Refer to WP 0003 00, Tables 2 and 3, for tubing and hose inspection and repair procedures.
   f. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   g. Refer to WP 0077 00 for corrosion removal and treatment.
   h. Refer to TM 55-1520-240-23 for accept/reject criteria.
INSPECTION REQUIREMENTS - continued

6. Forward and Aft Cargo Hooks
   a. Inspect for cracks, dents, scratches, evidence of arcing, proper operation, or evidence of corrosion.
   b. Inspect electrical switches for general condition, evidence of overheating, or evidence of corrosion.
   c. Inspect for loose, missing, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria.
INSPECTION REQUIREMENTS - continued

Figure 1. External Cargo Hook System (Sheet 3 of 3)

7. Cargo Hook Loading Pole
   a. Inspect for cracks, dents, scratches, evidence of arcing, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair
      procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
EMERGENCY EQUIPMENT

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
DA Form 2408-18
DD Form 1574
TM 1-1500-204-23 Series
TM 55-1500-323-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0050 00
WP 0077 00
WP 0081 00
WP 0082 00
WP 0087 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The emergency equipment consists of first aid kits, an emergency axe, portable fire extinguishers, and an emergency exit lighting system. There are seven first aid kits, one in the passageway and six in the cabin. The axe, located at sta 200, right side, is for emergency escape. There are three portable fire extinguishers; one on the cockpit floor, right of pilot’s seat; one at forward end of the cabin, and one at the ramp area. The emergency lighting system consists of three lights at the exits. These lights can be turned on by a switch in the cockpit and are portable with rechargeable battery; an inertia switch will cause the lights to come on if a hard landing in excess of 3g’s occurs.
NOTE

The item numbers in Figure 1, sheets 1 and 2 correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Emergency Equipment (Sheet 1 of 2)

1. First Aid Kit
   a. Inspect kit for tears, cleanliness, leaks (indicates broken contents), contents, and proper operation of zipper.
   b. Refer to TM 1-1500-204-23 for accept/reject criteria and repair procedures.
   c. Insure DA Form 2408-18 and DD Form 1574 reflect next inspection due date.

2. Support, Pan
   a. Inspect pan for cracks, loose Velcro tape, missing or damaged attaching hardware, or evidence of corrosion.
   b. Inspect supports for cracks or evidence of corrosion.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to WP 0081 00 and/or WP 0082 00 for pan accept/reject criteria and repair procedures.
   e. Refer to WP 0087 00 for support accept/reject criteria and repair procedures.
   f. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
3. Emergency Lights  
   a. Inspect for cracks, dents, scratches, broken glass, proper operation, or evidence of corrosion.  
   b. Refer to WP 0050 00 for Electrical System inspection procedures.  
   c. Refer to WP 0077 00 for corrosion removal and treatment.  
   d. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

4. Emergency Light Support Pan  
   a. Inspect for cracks, loose Velcro tape, missing or damaged attaching hardware, or evidence of corrosion.  
   b. Refer to WP 0077 00 for corrosion removal and treatment.  
   c. Refer to WP 0081 00 and/or WP 0082 00 for pan accept/reject criteria and repair procedures.  
   d. Refer to WP 0087 00 for support accept/reject criteria and repair procedures.  
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
INSPECTION REQUIREMENTS – continued

5. Inertia Switch
   a. Inspect for cracks, scratches, gouges, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

6. Emergency Axe
   a. Inspect for damage or evidence of corrosion.
   b. Refer to WP 0077 00 for corrosion removal and treatment.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria.

7. Axe Case Assembly
   a. Inspect for cracks, strap condition, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to WP 0081 00 and/or WP 0082 00 for pan accept/reject criteria and repair procedures.
   e. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.

8. Portable Fire Extinguisher
   a. Inspect for broken seal, general condition, legibility of data plate, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to TM 1-1500-204-23 for accept/reject criteria.
   d. Insure DA Form 2408-18 and DD Form 1574 reflect next inspection due date.

9. Extinguisher Bracket
   a. Inspect for cracks, proper operation, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0077 00 for corrosion removal and treatment.
   d. Refer to TM 55-1520-240-23 for accept/reject criteria.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
INTERCOMMUNICATION SYSTEM

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SCOPE
The intercommunication system is a multi-station intercommunication and radio control system for control of voice radio communication. It also monitors the output of navigation radio receivers and warning tones from IFF and radar warning sets. The basic components of the interphone system are six control panels. There is one panel each for the pilot, copilot, and troop commander located in the lower console, the two gunner stations located in the roof, sta 168 right and left, and flight engineer located left aft side. A foot switch is provided for the pilot, copilot, and right and left gunner positions. In addition, there is an interphone station for the hoist operator and two external interphone receptacles located right side, sta 110 and sta 489. The cables that connect to these are normally stowed in the aircraft. The 28-volt DC essential bus thru the INTPH circuit breakers on No. 1 and No. 2 power distribution panels supplies power for the system. Each gunner’s foot switch is built into a mat. When pressed, it parallels the operation of the press-to-talk switch. The pilot and copilot have a foot switch on the floor. The switch is used for transmit/receive control of the interphone and radio systems.
NOTE
The item numbers in Figure 1, sheets 1 and 2 correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Intercommunication System (Sheet 1 of 2)
INSPECTION REQUIREMENTS - continued

1. Copilot Control Panel
   a. Inspect for cracks (no cracks allowed), evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

2. Pilot Control Panel
   a. Inspect for cracks (no cracks allowed), evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. Troop Commander Control Panel
   a. Inspect for cracks (no cracks allowed), evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. Gunners Right Hand Control Panel
   a. Inspect for cracks (no cracks allowed), evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. Gunners Left Hand Control Panel
   a. Inspect for cracks (no cracks allowed), evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

6. Flight Engineer Control Panel
   a. Inspect for cracks (no cracks allowed), evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

7. Troop Commander Station
   a. Inspect for cracks (no cracks allowed), evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

8. Hoist Operator Control Panel
   Refer to WP 0063 00 for inspection criteria.

Figure 1. Intercommunication System (Sheet 2 of 2)
9. Junction Box
   a. Inspect for cracks (no cracks allowed), dents, nicks, scratches, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged hardware.
   c. Inspect support bracket for damage. Refer to WP 0087 00 for repair procedures.
   d. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   e. Refer to TM 11 1520-240-23 for removal, installation, or replacement.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

10. Audio Threshold Device
    a. Inspect for cracks (no cracks allowed), evidence of overheating, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged hardware.
    c. Inspect support bracket for damage. Refer to WP 0087 00 for repair procedures.
    d. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
    e. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
    f. Refer to WP 0077 00 for corrosion removal and treatment.

11. Pilot and Copilot Foot Switches
    a. Inspect for cracks (no cracks allowed), proper operation, or evidence of corrosion.
    b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
    c. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

12. Gunners Foot Switch (LH and RH)
    a. Inspect for cracks, proper operation, or evidence of corrosion.
    b. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
    c. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
    d. Refer to WP 0077 00 for corrosion removal and treatment.

13. Exterior Connectors, sta 110 and sta 489
    a. Inspect for cracks, evidence of overheating, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged hardware.
    c. Inspect support bracket for damage. Refer to WP 0087 00 for repair procedures.
    d. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
    e. Refer to TM 11-1520-240-23 for removal, installation, or replacement.
    f. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT  
CH-47D HELICOPTER  
COMMUNICATIONS SYSTEM  

INITIAL SETUP

Test Equipment:  
As Required

Tools and Special Tools:  
As Required

Material/Parts:  
As Required

Personnel Required:  
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 11-1520-240-23
TM 55-1500-323-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0067 00
WP 0071 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The communication system includes high-frequency (HF) liaison, ultrahigh-frequency (UHF) command, very high frequency (VHF) radio, identification friend or foe (IFF), and intercommunication with all crew stations. The following components make up the communications system. Figure 1 depicts systems and locations on the aircraft.

NOTE

Configuration of the communications system depends upon the MWO status of the aircraft. For example:

Provisions for AN/ARC-186 (FM position) were replaced by provisions for AN/ARC-201. Refer to MWO 55-1520-240-50-28.

Provisions for RT-1167 and RT-1518 were replaced with RT-1518C/ARC-164 because of CECOM modernization program for HAVEQUIP II.

RT-1354/ARC replaced with RT-1354B/ARC. Refer to MWO 1-1520-240-50-52 and MWO 11-5821-318-30-1.

AN/ARC-199 removed by provisions for AN/ARC-220. Refer to MWO 1-1520-240-50-74. Helicopter is configured with either the AN/ARC-199, or AN/ARC-220 HF Radio.

Insure a complete and accurate inventory is conducted upon receipt of the aircraft by the overhaul facility. Also, insure a complete review of MWO status to define the aircraft configuration. Insure that all TSEC equipment is retained by the owning unit.

Communications equipment will be checked during induction test flight. If test flight is not conducted, operational checks of all communications systems will be performed during induction. If equipment is found to be inoperable, request disposition from the Contracting Officer.
Figure 1. Communications System (Sheet 1 of 2)
Figure 1. Communications System (Sheet 2 of 2)

NOTE

The items in Figure 1, sheets 1 and 2 correspond to the respective item numbers in the following listing.

1. Intercommunication System – See Work Package WP 0067 00 for breakdown, inspection, and repair procedures.
COMMUNICATIONS SYSTEM - continued

2. VHF AM/FM System, AN/ARC-186
   Receiver-Transmitter, RT-1354/ARC-186 or RT-1354A/ARC-186  2 ea
   Switch, Radio Frequency, 310C30100  1 ea
   Control Light Source, ON241740-L  1 ea
   Speech Security Equipment, TSEC/KY-58  1 ea
   TSEC/KY-58 Interface Assembly, Z-AHQ  1 ea
   TSEC/KY-58 Mount, MT-3082/ARC  1 ea
   Antenna, S65-8282-30  2 ea
   Antenna, AS-1922A/ARC  1 ea

3. HF Radio Set AN/ARC-199
   Control Display Unit, C-11245/U  1 ea
   Remote Control Unit, ON501520-2  1 ea
   Control Amplifier, DSK-9-05010-501  1 ea
   Antenna, AS-3938/ARC or DSK-9-04415  1 ea
   Receiver-Transmitter, RT-1432/U  1 ea
   Amplifier-Coupler, AM-7201/U  1 ea
   HF RT Mount, 200-3202-00  1 ea
   Cryptographic Speech, TSEC/KY-75  1 ea
   TSEC/KY-75 Tray Assembly, DSK-9-04209-501  1 ea
   Amplifier, Audio, DSK-9-04348-501  1 ea
   Coupler, Antenna, CU-2305/ARC-199  1 ea
   Cable Radio Frequency, CSK-9-04204-501  1 ea
   Remote Control Unit, ON501500-2  1 ea
   Panel Assembly, KY-75, DSK-9-04433-501  1 ea

4. IFF Transponder APX-100
   Receiver-Transmitter, RT-1558A/APX-100  1 ea
   Transponder Computer, Kit-1C/TSEC  1 ea
   Antenna, AT-884/APX-44  1 ea
   Antenna, AT-740/A  1 ea

5. UHF Command System, AN/ARC-164
   Receiver-Transmitter, RT-1518 (preferred) or RT-1167/ARC-164  1 ea
   Antenna, AT-256/ARC  1 ea
   Filter, High Pass, HPF40-01T  1 ea

6. Sincgars VHF-FM Radio, AN/ARC-201
   Receiver-Transmitter, RT-1476/ARC-201  1 ea
   Amplifier, Radio Frequency, AM-7189A/ARC  1 ea
   Mounting Base, Electrical, DSK-9-03602-502  1 ea
   Battery Box, CY-8515/ARC-201  1 ea
   Filter, Low Pass, AV802  1 ea
   Antenna, AS-3939/ARC  1 ea
COMMUNICATIONS SYSTEM - continued

7. HF Liaison System, AN/ARC-220 with KY-100 Secure Voice
   - Receiver-Transmitter, RT-1749/URC 1 ea
   - Mounting Base, 200-3202-00 1 ea
   - Control, Radio Set, C-12436/URC 1 ea
   - Control, Remote, TSEC, ON616650 1 ea
   - Processor, TSEC/KY-100, ON616604 1 ea
   - Battery Box, CY-8515/ARC-201 1 ea
   - Battery, Non-recharge, MN1400 5 ea
   - Power Amp Coupler, AM-7531/URC, (751-8935-001) 1 ea
   - Coupler Mount, 200-3438-00, (047-6697-02) 1 ea
   - HF Antenna, AV647 1 ea

INSPECTION REQUIREMENTS

VHF AM/FM SYSTEM, AN/ARC-186

NOTE

The items in Figure 2, sheets 1 through 6, correspond to the respective item numbers in the VHF AM/FM SYSTEM, AN/ARC 186 INSPECTION REQUIREMENTS following each illustration.
VHF AM/FM SYSTEM, AN/ARC-186 INSPECTION REQUIREMENTS

1. Receiver-Transmitter, RT-1354/ARC-186 or RT-1354A/ARC-186
   a. Inspect aircraft records for previous receive-transmit discrepancies.
   b. Inspect RT for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   c. Inspect RT for broken, missing, loose, or unserviceable knobs, switches, or attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   e. Refer to TM 11-1520-240-23 for RT removal and installation.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

2. Switch, Radio Frequency, 310C30100
   a. Inspect switch for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect switch for broken, missing, loose, or unserviceable connectors and attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for switch removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
3. Control, Light Source, ON241740-L  
   Equipment to remain with owning unit.
4. TSEC/KY-58, Speech Security Equipment
   Equipment to remain with owning unit.

5. TSEC/KY-58, Interface Assembly, Z-AHQ
   Equipment to remain with owning unit.
VHF AM/FM SYSTEM, AN/ARC-186 INSPECTION REQUIREMENTS - continued

6. TSEC/KY-58, Mount, MT-3082/ARC
   a. Inspect mount for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect mount for cracked, loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Damage to mount of 15% or less of cross-sectional area at point of damage is considered minor. Replace if damage exceeds this limit.
   e. Refer to TM 11-1520-240-23 for mount removal and installation.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

7. Antenna, S65-8282-30
   Refer to WP 0071 00 for inspection and repair procedures.
8. Antenna, AS-1922A/ARC
   Refer to WP 0071 00 for inspection and repair procedures.
NOTE

The items in Figure 3, sheets 1 through 6, correspond to the respective item numbers in the HF RADIO SET, AN/ARC 199 INSPECTION REQUIREMENTS following each illustration.
HF RADIO SET, AN/ARC-199 INSPECTION REQUIREMENTS

1. Amplifier-Coupler, AM-7201/U
   Equipment to remain with owning unit.

2. Mounting Tray, 200-3438-00
   a. Inspect mounting tray for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect mounting tray for cracked, loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Damage to mount of 15% or less of cross-sectional area at point of damage is considered minor. Replace if damage exceeds this limit.
   e. Refer to TM 11-1520-240-23 for mounting tray removal and installation.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

3. HF RT Mount, 200-3202-00
   a. Inspect mount for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect mount for cracked, loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Damage to mount of 15% or less of cross-sectional area at point of damage is considered minor. Replace if damage exceeds this limit.
   e. Refer to TM 11-1520-240-23 for mount removal and installation.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

4. Receiver-Transmitter, RT-1432/U
   Equipment to remain with owning unit.

5. TSEC/KY-75 Tray Assembly, DSK-9-04209-501
   a. Inspect tray assembly for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect tray assembly for cracked, loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Damage to tray assembly of 15% or less of cross-sectional area at point of damage is considered minor. Replace if damage exceeds this limit.
   e. Refer to TM 11-1520-240-23 for tray assembly removal and installation.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

6. Cryptographic Speech, TSEC/KY-75
   Equipment to remain with owning unit.
Figure 3. HF Radio Set, AN/ARC-199 (Sheet 2 of 6)

7. Amplifier Assembly, DSK-9-04348-501
   a. Inspect amplifier assembly for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect amplifier assembly for broken, missing, loose, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for amplifier assembly removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
8. Control Display Unit, C-11245/U  
   Equipment to remain with owning unit.

9. Remote Control Unit, ON501520-2  
   Equipment to remain with owning unit.
10. Control Amplifier, DSK-9-05010-501
   a. Inspect control amplifier for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect control amplifier for broken, missing, loose, or unserviceable knobs, switches, and damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for control amplifier removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

11. Cable, Radio Frequency, CSK-9-04204-501
    Equipment to remain with owning unit.

12. Coupler, Antenna, CU-2305/ARC-199
    Equipment to remain with owning unit.
13. Remote Control Unit, KY-75, ON501500-2
   Equipment to remain with owning unit.

14. Panel Assembly, KY-75
   Inspect panel for cracks, dents, nicks, corrosion, or broken, missing, loose, or damaged attaching hardware.
15. HF Antenna Installation, AS-3938/ARC

Refer to WP 0071 00 for inspection and repair procedures.
NOTE

The items in Figure 4, sheets 1 through 4, correspond to the respective item numbers in the IFF TRANSPONDER, APX-100 INSPECTION REQUIREMENTS following each illustration.

Figure 4. IFF Transponder, APX-100 (Sheet 1 of 4)

IFF TRANSPONDER, APX-100 INSPECTION REQUIREMENTS

1. Receiver-Transmitter, RT-1558A/APX-100
   a. Inspect aircraft records for previous receive-transmit discrepancies.
   b. Inspect RT for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   c. Inspect RT for broken, missing, loose, or unserviceable knobs, switches, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   e. Refer to TM 11-1520-240-23 for RT removal and installation.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
2. Transponder Computer, Kit-1C/TSEC
   Equipment to remain with owning unit.
3. Antenna, AT-884/APX-44
   Refer to WP 0071 00 for inspection and repair procedures.
4. Antenna, AT-740/A
   Refer to WP 0071 00 for inspection and repair procedures.
NOTE

The items in Figure 5, sheets 1 through 5, correspond to the respective item numbers in the UHF COMMAND SYSTEM, AN/ARC-164 INSPECTION REQUIREMENTS following each illustration.

1. Receiver-Transmitter, RT-1518 (preferred) or RT-1167/ARC-164
   a. Inspect aircraft records for previous receive-transmit discrepancies.
   b. Inspect RT for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   c. Inspect RT for broken, missing, loose, or unserviceable knobs, switches, or damaged attaching hardware.
   d. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   e. Refer to TM 11-1520-240-23 for RT removal and installation.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
Figure 5. UHF Command System, AN/ARC-164 (Sheet 2 of 3)

2. Antenna, AT-256/ARC (M5815/1-01)
   Refer to Work Package WP 0071 00 for inspection and repair procedures.
3. Filter, High Pass, HPF40-01T
   a. Inspect filter for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect filter for broken, missing, loose, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for filter removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
NOTE

The items in Figure 6, sheets 1 through 5, correspond to the respective item numbers in the SINCgars VHF FM RADIO, AN/ARC-201 INSPECTION REQUIREMENTS following each illustration.

Figure 6. Sincgars VHF-FM Radio, AN/ARC-201 (Sheet 1 of 5)

1. Receiver-Transmitter, RT-1476/ARC-201
   Equipment to remain with owning unit.
2. Mounting Base, Electrical, DSK-9-03602-502
   a. Inspect mounting base for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect mounting base for cracked, loose, missing, or damaged attaching hardware.
   c. Damage to mounting base of 15% or less of cross-sectional area at point of damage is considered minor.
      Replace if damage exceeds this limit.
   d. Refer to TM 11-1520-240-23 for mounting base removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. Amplifier, Radio Frequency, AM-7189A/ARC
   Equipment to remain with owning unit.
4. Battery Box, CY-8515/ARC-201
   Equipment to remain with owning unit.
5. Filter, Low Pass, AV802
   a. Inspect filter for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect filter for broken, missing, loose, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for all electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for filter removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
6. Antenna, AS-3939/ARC
Refer to WP 0071 00 for inspection and repair procedures.
NOTE

The items in Figure 7, sheets 1 through 5, correspond to the respective item numbers in the HF LIASON SYSTEM, AN/ARC-220 WITH KY-100 SECURE VOICE, INSPECTION REQUIREMENTS following each illustration.

Figure 7. HF Liaison System, AN/ARC-220 With KY-100 Secure Voice (Sheet 1 of 5)
HF LIAISON SYSTEM, AN/ARC-220 WITH KY-100 SECURE VOICE INSPECTION REQUIREMENTS

1. Receiver-Transmitter, RT-1749/URC
   Equipment to remain with owning unit

2. Mounting Base, 200-3202-00
   a. Inspect mounting base for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect mounting base for cracked, loose, missing, or damaged attaching hardware.
   c. Damage to mounting base of 15% or less of cross-sectional area at point of damage is considered minor.
      Replace if damage exceeds this limit.
   d. Refer to TM 11-1520-240-23 for mounting base removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment

3. Control, Radio Set, C-12436/URC
   Equipment to remain with owning unit.

4. Control, Remote, TSEC, ON616650
   Equipment to remain with owning unit.
5. Processor, TSEC/KY-100, ON616604
   Equipment to remain with owning unit.

6. Battery Box, CY-8515/ARC-201
   Equipment to remain with owning unit.

6a. Battery, Non-recharge, MN1400
    Equipment to remain with owning unit.
7. Power Amp Coupler, AM-7531/URC (751-8935-001)
   Equipment to remain with owning unit.

8. Coupler Mount, 200-3438-00 (047-6697-02)
   a. Inspect mount for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect mount for cracked, loose, missing, or damaged attaching hardware.
   c. Damage to mount of 15% or less of cross-sectional area at point of damage is considered minor. Replace if damage exceeds this limit.
   d. Refer to TM 11-1520-240-23 for mount removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment
9. HF Antenna, AV647
   Refer to WP 0071 00 for inspection and repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
NAVIGATION SYSTEMS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 11-1520-240-23
TM 55-1500-323-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The navigation system includes facilities that provide heading and bearing information, absolute altitude, and that permit use of VHF-omni directional ranges, runway localizers, low frequency radio direction finders, and FM homing. These functions are provided by:

a. Direction Finder Set, AN/ARN-89B
b. Radio Receiver Set, AN/ARN-123 (VOR/ILS)
c. Altimeter System, AN/APN-209A (V)
d. Gyro Magnetic Compass System, AN/ASN-43
e. Vertical Gyro Displacement System
f. Horizontal Situation Indicator (HSI)
g. Navigation Set, Doppler, AN/ASN-128A
h. Navigation Set, Doppler GPS, AN/ASN-128B
i. Airborne Navigation Set, Global Positioning System (GPS), AN/ASN-149 (V) 1
Figure 1. Direction Finder Set, AN/ARN-89B

NOTE

The items in Figure 1 correspond to the respective item numbers in the following DIRECTION FINDER SET, AN/ARN-89B INSPECTION REQUIREMENTS.

1. ADF Receiver, R-1496A/ARN-89
   a. Inspect the receiver for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

2. Control ADF Set, C-7392A/ARN-89
   a. Inspect control for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
DIRECTION FINDER SET, AN/ARN-89B INSPECTION REQUIREMENTS – continued

3. Impedance Matching Amplifier, AM-4859A/ARN-89
   a. Inspect the amplifier for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

CIVIL VOR/ILS, AN/ARN-123 INSPECTION REQUIREMENTS

![Figure 2. Civil VOR/ILS, AN/ARN-123](figure2_image)

NOTE

The items in Figure 2 correspond to the respective item numbers in the following CIVIL VOR/ILS, AN/ARN-123 INSPECTION REQUIREMENTS.

1. Receiver, R-2023/ARN-123(V) and Mount, MT-4834/ARN-123(V)
   a. Inspect the receiver for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect mount for cracks or loose, missing, or damaged attaching hardware.
   c. Damage to mount of 15% or less of cross-sectional area at point of damage is considered minor. If damage exceeds this limit, replace the mount bracket.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to TM 11-1520-240-23 for removal and installation.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
CIVIL VOR/ILS, AN/ARN-123 INSPECTION REQUIREMENTS - continued

2. Control, C-10048/ARN-123(V)
   a. Inspect control for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

RADAR ALTIMETER, AN/APN-209 INSPECTION REQUIREMENTS

The items in Figure 3 correspond to the respective item numbers in the following RADAR ALTIMETER, AN/APN-209 INSPECTION REQUIREMENTS.

1. Pilot’s Indicator/Receiver/Transmitter, RT-1115( ) APN-209
   a. Inspect pilot’s indicator for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
RADAR ALTIMETER, AN/APN-209 INSPECTION REQUIREMENTS - continued

2. Copilot’s Indicator, ID-1917/APN-209(V)
   a. Inspect copilot’s indicator for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

GYROMAGNETIC COMPASS SET, AN/ASN-43 INSPECTION REQUIREMENTS

Figure 4. Gyromagnetic Compass Set, AN/ASN-43
NOTE

The items in Figure 4 correspond to the respective item numbers in the following GYROMAGNETIC COMPASS SET, AN/ASN-43 INSPECTION REQUIREMENTS.

1. Directional Gyro, CN-998/ASN-43
   a. Inspect the gyro for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

2. Compass Control, C-8021A/ASN-75 (Overhead Console)
   a. Inspect control for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. Magnetic Flux Compensator, CN-405/ASN
   a. Inspect the compensator for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. Induction Compass Transmitter, T-611/ASN (Flux Valve)
   a. Inspect the transmitter for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. Mounting Bracket
   a. Inspect mount bracket for cracks (no cracks allowed), loose, missing, or damaged attaching hardware, or evidence of corrosion.
   b. Damage to mount bracket of 15 percent or less of cross-sectional area at point of damage is considered minor. If damage exceeds this limit, replace the mount bracket.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
NOTE

The items in Figure 5 correspond to the respective item numbers in the following VERTICAL GYRO INDICATOR (VGI) FACILITY INSPECTION REQUIREMENTS.

1. Displacement Gyro, CN-811( )/ASN
   a. Inspect the gyro for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

2. Gyro Transfer Relay, 414E3330
   a. Inspect the gyro transfer relay for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
VERTICAL GYRO INDICATOR (VGI) FACILITY INSPECTION REQUIREMENTS - continued

3. Attitude Indicator, ARU-12/A
   a. Inspect indicator for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. If damage is noted, refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

HORIZONTAL SITUATION INDICATOR (HSI) SYSTEM INSPECTION REQUIREMENTS

Figure 6. Horizontal Situation Indicator (HSI) System

NOTE

The items in Figure 6 correspond to the respective item numbers in the following HORIZONTAL SITUATION INDICATOR (HSI) SYSTEM INSPECTION REQUIREMENTS.

1. Horizontal Situation Indicator, ID-2103/A, Pilot/Copilot
   a. Inspect indicator for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
HORIZONTAL SITUATION INDICATOR (HSI) SYSTEM INSPECTION REQUIREMENTS - continued

2. Mode Select Panel, 145E3134, or Modified Mode Selector Panel for GPS, Pilot/Copilot
   a. Inspect panel for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

DOPPLER NAVIGATION SET, AN/ASN-128A OR -128B INSPECTION REQUIREMENTS

![Diagram of Doppler Navigation Set]

Figure 7. Doppler Navigation Set, AN/ASN-128A or -128B

NOTE

The items in Figure 7 correspond to the respective item numbers in the following DOPPLER NAVIGATION SET, AN/ASN-128A OR -128B INSPECTION REQUIREMENTS

1. Signal Data Converter, CV-3338( )/ASN-128A or CV-3338A/ASN-128B
   a. Inspect the converter for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
DOPPLER NAVIGATION SET, AN/ASN-128A OR -128B INSPECTION REQUIREMENTS - continued

2. Computer Display Unit, CP-1252 ( )/ASN-128A or CP-1252C/ASN-128B
   a. Inspect the display unit for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. GPS Data Loader Receptacle, 162571-01-01
   a. Inspect the data loader receptacle for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

GLOBAL POSITIONING SYSTEM (GPS), AN/ASN-149 INSPECTION REQUIREMENTS
NOTE

The items in Figure 8 correspond to the respective item numbers in the following GLOBAL POSITIONING SYSTEM (GPS), AN/ASN-149 INSPECTION REQUIREMENTS

1. GPS Receiver, R-2400( )/ASN-149 and Mount, DSK 9-04694-501
   a. Inspect the receiver for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect mount for cracks or loose, missing, or damaged attaching hardware.
   c. Damage to mount of 15% or less of cross-sectional area at point of damage is considered minor. If damage exceeds this limit, replace the mount.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   e. Refer to TM 11-1520-240-23 for removal and installation.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

2. Control-Indicator, C-11702/UR
   a. Inspect the indicator for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. GPS Data Loader Receptacle, 162571-01-01
   a. Inspect the data loader receptacle for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair procedures.
   d. Refer to TM 11-1520-240-23 for removal and installation.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AIRCRAFT SURVIVABILITY EQUIPMENT

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 11-1520-240-23
TM 55-1500-323-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The aircraft survivability equipment provides radar signal detection and airborne anti-aircraft missile detection. These two systems are the Radar Signal Detecting Set, AN/APR-39A(V)1, or Radar Signal Detecting Set, AN/APR-39(V), and the Countermeasures Set AN/ALQ-156.
NOTE

The item numbers in Figure 1, sheets 1 and 2, correspond to the respective item numbers in the INSPECTION REQUIREMENTS following each illustration.

Figure 1. Aircraft Survivability Systems (Sheet 1 of 2)

1. Forward Receiver, R-1838/APR-39 or R-2218/APR-39A(V), and Mount
   a. Receiver, R-1838/APR-39 or R-2218/APR-39A(V) – Equipment to remain with owning unit
   b. Inspect the mount for cracks or loose, missing, or damaged attaching hardware or evidence of corrosion.
   c. Refer to WP 0088 00 for mount repair procedures.
   d. Damage to mount of 15% or less of cross-sectional area at point of damage is considered minor. If damage exceeds this limit, replace.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   f. Refer to WP 0077 00 for corrosion removal and treatment.

2. Aft Pylon Radar Receiver, R-1838/APR-39(V) or R-2218/APR-39A(V), and Mounting Plate
   a. Receiver, R-1838/APR-39(V) or R-2218/APR-39A(V) – Equipment to remain with owning unit
   b. Inspect the mount for cracks, loose, missing, or damaged attaching hardware or evidence of corrosion.
   c. Damage to mounts of 15% or less of cross-sectional area at point of damage is considered minor. If damage exceeds this limit, replace.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

3. Detection Set Indicator IP-1150/APR-39 or IP-1150A/APR-39(V)
   Equipment to remain with owning unit.

4. Detecting Set Control C-9326/APR-39 or C-11308/APR-39A(V)
   Equipment to remain with owning unit.

5. Comparator, CM-440/APR-39(V)
   Equipment to remain with owning unit.

6. Bandpass Filter, SM-C-991653, and Mount
   a. Filter, SM-C-991653 – Equipment to remain with owning unit.
   b. Inspect the mount for cracks, loose, missing, or damaged attaching hardware or evidence of corrosion.
   c. Damage to mounts of 15% or less of cross-sectional area at point of damage is considered minor. If damage exceeds this limit, replace the mount.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

7. Digital Processor, CP-1597/APR-39A(V)
   Equipment to remain with owning unit.

8. Control, Indicator C-1030/ALQ-156
   Equipment to remain with owning unit.

9. Countermeasure Set, AN/ALQ-156, Receiver-Transmitter, RT-1220/ALQ-156, and Mount 24323
   a. Countermeasure Set, AN/ALQ-156, Receiver-Transmitter, RT-1220/ALQ-156- Equipment to remain with owning unit.
   b. Inspect the mount for cracks, loose, missing, or damaged attaching hardware or evidence of corrosion.
   c. Damage to mounts of 15% or less of cross-sectional area at point of damage is considered minor. If damage exceeds this limit, replace.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
10. Flare Dispenser Firing Switches
   a. Inspect switches for security, damage, proper operation or evidence of corrosion.
   b. Refer to TM 55-1500-323-24 for accept/reject criteria and repair procedures.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

11. Flare Dispenser Timer
   Equipment to remain with owning unit.

12. Flare Dispenser Status Panel
   a. Inspect the panel for cracks (no cracks allowed), dents, nicks, evidence of overheating, or evidence of corrosion.
   b. Inspect switches and lights for security, damage, and proper operation.
   c. Refer to TM 55-1520-240-23 for accept/reject criteria and repair procedures.
   d. Inspect the mount for cracks, loose, missing, or damaged attaching hardware or evidence of corrosion.
   e. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   f. Refer to WP 0077 00 for corrosion removal and treatment.
INSPECTION REQUIREMENTS - continued

13. Flare Dispenser M-130 with Mounts
   a. Flare Dispenser M-130 - Equipment to remain with owning unit.
   b. Inspect the mounts for cracks, loose, missing, or damaged attaching hardware or evidence of corrosion.
   c. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   d. Refer to WP 0077 00 for corrosion removal and treatment.

14. Flare Dispenser Safety Relay 147K1
   a. Inspect relay for cracks (no cracks allowed), security, loose terminals, burns, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 55-1500-323-24 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00, Tables 4 and 5, for electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

15. Dispenser Control Panel, M-130
   Equipment to remain with owning unit.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
Examiner (PSA)

References:
TM 1-1500-204-23 Series
TM 11-1520-240-23
TM 55-1500-323-24
TM 55-1520-240-23 Series
WP 0003 00
WP 0077 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The helicopter is equipped with communications, navigation, and aircraft survivability antennas. Selected antennas are hardened for electromagnetic environment (EME) protection by pin-filtered adapters. The selected components are the Doppler antenna and radar altimeter antenna. Mounting surfaces of components to airframe have been chemically coated to provide low resistance to airframe ground.

Communication Antennas
  VHF/FM
  VHF/AM
  UHF/AM
  HF

Navigation Antennas
  Doppler
  GPS
  ADF
  VOR/LOC
  Glide Slope
  Marker Beacon
  Radar Altimeter
  IFF
  VHF/FM Homing

Aircraft Survivability Antennas
  Radar Detector Antenna
  Countermeasures Antenna
COMMUNICATIONS EQUIPMENT ANTENNAS INSPECTION REQUIREMENTS

Figure 1. Communications Equipment Antenna Locations

NOTE

The item numbers in Figure 1 correspond to the respective item numbers in the following COMMUNICATIONS EQUIPMENT ANTENNAS INSPECTION REQUIREMENTS.

1. VHF AM/FM Antenna (Top)
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
COMMUNICATIONS EQUIPMENT ANTENNAS INSPECTION REQUIREMENTS - continued

2. HF ARC-220 Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. HF ARC-199 Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. VHF AM/FM Antenna (Bottom)
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. UHF Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
Figure 2. Navigation Equipment Antenna Locations

NOTE

The item numbers in Figure 2 correspond to the respective item numbers in the following NAVIGATION EQUIPMENT ANTENNAS INSPECTION REQUIREMENTS.

1. GPS Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.
NAVIGATION EQUIPMENT ANTENNAS INSPECTION REQUIREMENTS - continued

2. Glideslope Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

3. VOR/LOC Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

4. Doppler Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

5. ADF Sense Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

6. ADF Loop Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

7. IFF Antenna (AFT)
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   a. Inspect for loose, missing, or damaged attaching hardware.
   b. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   c. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   d. Refer to WP 0077 00 for corrosion removal and treatment.
NAVIGATION EQUIPMENT ANTENNAS INSPECTION REQUIREMENTS - continued

8. Marker Beacon Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

9. FM Homing Antenna
   a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
   b. Inspect for loose, missing, or damaged attaching hardware.
   c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
   d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
   e. Refer to WP 0077 00 for corrosion removal and treatment.

10. Radar Altimeter Antenna
    a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
    d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
    e. Refer to WP 0077 00 for corrosion removal and treatment.

11. IFF Antenna (FWD)
    a. Inspect each antenna for cracks (no cracks allowed), dents, nicks, or evidence of corrosion.
    b. Inspect for loose, missing, or damaged attaching hardware.
    c. Refer to TM 11-1520-240-23 for accept/reject criteria and repair procedures.
    d. Refer to WP 0003 00 Tables 4 and 5 for all electrical wiring and electrical component inspection and repair.
    e. Refer to WP 0077 00 for corrosion removal and treatment.
NOTE

The item numbers in Figure 3 correspond to the respective item numbers in the following AIRCRAFT SURVIVABILITY EQUIPMENT ANTENNAS INSPECTION REQUIREMENTS.

1. Radar Detection Antennas (FWD)
   Equipment to remain with owning unit.

2. Radar Detection Antennas (AFT)
   Equipment to remain with owning unit.

3. Radar Detection Antenna (FWD Bottom)
   Equipment to remain with owning unit.

4. Countermeasures Antennas
   Equipment to remain with owning unit.

END OF WORK PACKAGE
CHAPTER 3

DEPOT MAINTENANCE INSTRUCTIONS
INTRODUCTION

Scope

Chapter 3 of this DMWR provides general and specific repair procedures. General repairs are normally referred to in TM 1-1500-204-23. Specific work package(s) (WP) are provided when a repair or replacement procedure is beyond the scope of a general WP or is unique to a particular component. Each WP is presented as a separate procedure. Utilize the pre-shop analysis inspection findings (Chapter 2) to determine which items require repair or replacement. There are no limitations to the number of repairs made in a given region, provided they do not overlap and are able to meet the requirements of that individual WP. Restrictions that may apply to the number of repairs and/or distance between repairs are stated in TM 1-1500-204-23 series, TM 55-1520-240-23 series, and in some cases, in the WP. If the repair or replacement is not specifically referred to in TM 1-1500-204-23 series, TM 55-1520-240-23 series, applicable MWO(s), ECP(s), DMWR(s), or other aircraft applicable publications, then repair or replacement may not be performed without engineering approval. The TM 55-1520-240-23 series manuals may be used as a reference for disassembly, assembly, rigging, and TM 55-1520-240-T series for electrical schematics to assist in repair procedures. In the event of a disagreement between this DMWR and other documentation, request engineering clarification. For engineering clarification and approval procedures, refer to WP 0003 00, “Maintenance Engineering Call (MEC)”.

CORROSION CONTROL, WATER INTEGRITY/WEATHER SEALING

Without proper protection, metals used in the helicopter structures are subject to corrosion. During manufacture, primers, sealants, and coatings are applied to the entire helicopter to shield against moisture, salts, chemicals, harmful vapors, and the electrolytic action caused by dissimilar metals in direct contact with each other. Sealants are used to prevent rain or splashed water from leaking through skin and window joints. When making repairs, the corrosion protection and water integrity of the entire structure must be carefully preserved. If parts are being repaired or replaced, sealant and coatings that were broken or removed in cleanup must be reapplied. Likewise, when new joints, fasteners, and overlaps are added, as would be done in making a skin patch, the specified corrosion protection and sealant must be carefully and thoroughly applied. Corrosion removal must be complete. Failure to remove corrosion completely will allow corrosion to continue. Detailed instructions are contained in WP 0077 00. Additional corrosion removal and treatment instructions may be found in TM 1-1500-344-23. Refer to WP 0080 00 for water integrity/weather sealing procedures.

INVESTIGATING DAMAGE

Thoroughly investigate and inspect any damage in the proposed repair area, regardless of how minor the damage may appear, especially if the damage resulted from impact. Carefully examine, not only local damage, but also surrounding structure for the presence of secondary damage. Severe force or sudden shock may be transmitted throughout the structure causing cracks, elongated fastener holes, misalignment, or other damage. Contact Examiner (PSA) for clarification of any damage not documented.

ATTACHING HARDWARE AND HOLES

Attaching Hardware Preparation

Attaching hardware such as nuts, bushings, spacers, washers, screws, self-tapping screws, self-locking nuts, clamps, etc., do not need to be painted in detail except when dissimilar metals are being joined. Dissimilar parts being joined, shall receive a wet or dry coat of primer at installation, or a coating of material conforming to MIL-C-16173, Grade 1.
ATTACHING HARDWARE AND HOLES - continued

Hole Preparation

All holes drilled or reworked must conform to the limits established IAW TM 1-1500-204-23. All holes drilled or reworked in aluminum alloys to receive bolts, bushings, screws, rivets or studs shall be treated per WP 0077 00. All holes drilled or reworked in steel components shall be treated per WP 0077 00.

GENERAL QUALITY REQUIREMENTS FOR RIVETED REPAIRS

Generally, the design of riveted joints is based on the theory that the total joint strength is the sum of the individual strengths of a group of rivets. If one rivet fails, the others of the group must carry the load; if they are unable to carry this added load, progressive joint failure will occur. Stress concentrations usually cause one rivet to fail first. Careful analysis of the failed rivet in a joint will indicate that it has been overloaded, with the possibility that adjacent rivets may have failed. Rivets are subject to three types of failures: shear, bearing, and head.

Shear Failure

Shear failure is the most common rivet failure. It is a failure of the rivet shank due to forces acting along the plane of two adjacent sheets, causing a slipping action that may be severe enough to break the rivet shank. If the shank becomes loaded beyond the yield point of the material, and remains overloaded, a permanent shift is established in the sheets and the rivet shank may become joggled.

Bearing Failure

Bearing failure occurs in sheet metal at the edge of the rivet hole if the rivet is excessively strong in shear. The application of large rivets in thin sheets brings about such a failure. In that case, the sheet is locally crushed or buckled, and the buckling destroys the rigidity of the joint. Vibrations set up by flight operations may cause the buckled portion to flutter and break off at the rivet head. If buckling occurs at the end of the sheet, a tear out may result. In either case, repair is necessary.

Head Failure

Head failure may result from complex loading at a joint, causing stress at the rivet head. The head may fail by shearing through the area corresponding to the rivet shank or, in thicker sheets, fail through a prying action that causes failure of the head itself. Any visible head distortion is cause for corrective action.

Rivet Inspection Procedures

Inspection consists of examining both the shop and manufactured heads and the surrounding skin and structural parts for damage. Refer to TM 1-1500-204-23 for inspection procedures.

REPAIR MATERIAL AND HARDWARE

Repair Material

The material used in all repairs shall be same as the original structure. If the repair cannot be made from the same material as the original part, select a substitute material per applicable aircraft manual. Substitution of material can create a corrosion hazard. If the substitution material is different than the original part (as when a 7075-T6 aluminum extrusion is reinforced with a 4130 steel strap), failure to insulate the metals from direct contact with each other will cause electrolytic corrosion. Insulation of dissimilar metals is extremely important; refer to WP 0078 00.
REPAIR MATERIAL AND HARDWARE – continued

Repair Hardware

TM 1-1500-204-23 provides general information on the selection and use of hardware. This information will be used as a guide rather than for specific applications. This DMWR provides specific instructions for the use and application of hardware. There is no document published that provides data on substitution of hardware. Substitution of hardware is authorized only by engineering approval. There is no general interchangeability of items listed in AN, MS, and NAS standards since each item listed is engineered to a specific standard.

1. Bolts in lieu of Hi-Lok and Hi-shear fasteners are not authorized without engineering approval. Where bolts have been used for field level repairs, they shall be replaced with the correct hardware.

2. Hardware requirements are listed in each WP, where applicable.

GENERAL REPAIR INSTRUCTIONS

Thickness of Repair Material

Ensure that the thickness of a splice or patch is at least equal to, or one gauge greater than the original material. Avoid abrupt changes in cross-sectional area to eliminate dangerous stress concentrations by tapering splices and making small skin patches round or elliptical shaped instead of rectangular.

Splicing

In structural members subjected to compression or bending, place splice on outside of repaired member to obtain higher bending strength. Use next higher gage material when possible.

Corners

Avoid all sharp corners by allowing generous corner radii.

Buckling

Replace or reinforce any member that has buckled with a member of equal strength. A buckled member shall not be depended upon to carry its original load.

Cracks

Treat all cracks as more than minor damage. All cracks shall be repaired.

REINFORCED PLASTIC REPAIRS

Equipment and Supplies

1. Glass fabric used for reinforced plastic repairs shall conform to specification SAE-AMS-C-9084, Class 2, and the resin systems shall conform to specification MIL-R-9300.

2. The reinforced plastic repairs in this DMWR are not intended for rotor blade repair.

3. Equipment and material used in the repair of reinforced plastic should duplicate, or be as close as possible to, those materials used in the manufacture of the original part.
REINFORCED PLASTIC REPAIRS - continued

4. Observe all CAUTIONS and WARNINGS on containers when using consumables. When applicable, wear necessary protective equipment during handling and use. If a consumable is flammable or explosive, make certain that the consumable and its vapors are kept away from heat, spark, or flame. Make certain the helicopter is properly grounded and firefighting equipment is available. For additional information on toxicity, flashpoints, and flammability of chemicals, refer to the applicable product Material Safety Data Sheet (MSDS).

5. Waxes and other similar release agents cannot be adequately removed from repair surfaces. Poor bond and paint adhesion will result. Use film type agents only. Use release materials such as polyvinyl alcohol (PVA) film. Refer to TM 1-1500-204-23.

6. Assemble all equipment and repair materials before initiating repair. Use forms to repair large rounded areas. Vacuum bags or clamping plates should be used to provide pressure during cure. Heat lamps or heat guns should be used, when possible, to accelerate the curing or drying process.

Hazards

1. Plastic dust is a health hazard that requires proper protective equipment. The dust is very abrasive and may damage other equipment and/or contaminate parts. Have an exhaust system available for removing plastic dust resulting from cutting and sanding operations.

2. Use properly grounded and explosion-proof electrical equipment in work areas when using flammable materials.

3. Wear protective cotton or plastic gloves when handling materials. Wash hands before eating or smoking.

4. Post NO SMOKING signs in work areas and keep materials away from sparks or flames.

5. Operations of this nature must be conducted in an area that meets OSHA standards.

Types of Damage

1. Surface scratches are considered to be minor damage and do not require repair unless they penetrate into the fabric.

2. Type I damage penetrates one surface and is no more than 6 inches long.

3. Type II damage penetrates entirely through the part and is no more than 6 inches long.

NOTE

Strux is used as a filler or core in reinforced plastic fairings, doors, and hatches. The principal kinds of damage to Strux are cracks, gouges, holes, fractures, and damage that will require patching or replacement of the component. Strux sections require repair procedures similar to that of honeycomb sandwich sections and reinforced plastic. Foam, Type II, Grade 6 (Last-A-Foam, Item 104, WP 0157 00) shall be used to repair Strux.

6. Damage to Strux may be repaired if the repair will not adversely affect critical dimensions, fit, contour, general appearance, maximum weight allowance, and ultimate usage and strength of the component.
FASTENER LOCATIONS

Transfer of Holes

1. Accomplish transfer of holes from a drilled part to another part by placing the second part over the first part, using established holes as a guide. An alternate method is to scribe hole location from drilled part onto the part to be drilled and spot with a center punch.

2. In areas involving complete new sections first drill 0.098 inch pilot holes in member nearest operation. Locate and attach second member to first by two C clamps or spring fasteners; size drill through both members, separate sheets, and remove burrs from holes.

3. Drill flimsy members, such as light stringers, from skin surfaces after first marking fastener line along their length in pencil. When skin, predrilled with pilot holes, is placed over stringer, flex stringer to bring pencil line center with skin holes.

Hole Sizes

For metal and composite applications, refer to TM 1-1500-204-23 series.

EXTRUSIONS AND SHEET STOCK SUBSTITUTES

Extrusions

Extrusions are die-formed shapes made to specific cross-sectional dimensions and supplied in standard lengths. Because extrusions are used extensively throughout the helicopter, it is necessary that the proper replacement extrusion be used. If such replacement is not available, an approved substitute section may be available for selected extrusions. The substitute may be machined from a formed sheet or bar stock. The recommended sheet stock thickness and/or minimum bend radius is basic and should be used as a guide only.

Sheet Stock Substitutes

When making a sheet stock substitution for extrusions, refer to TM 1-1500-204-23 series.

STRIPPING AND REPAINTING

All helicopter stripping and repainting shall be performed IAW TM 55-1500-345-23. For special under floor corrosion treatment, prevention, and painting, refer to WP 0077 00, WP 0149 00, and WP 0161 00.

GENERAL TOOLING REQUIREMENTS

Jigs, holding fixtures, or tools must be used to guarantee structural alignment when major structural repair is being performed and the possibility exists that the airframe may shift. Every precaution must be taken to preclude movement or change in the dimensions from that of original manufacture.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENTS  
CH-47D HELICOPTER  
AIRCRAFT ALIGNMENT VERIFICATION

INITIAL SETUP

**Test Equipment:**
As Required

**Tools and Special Tools:**
As Required

**Material/Parts:**
As Required

**Personnel Required:**
As Required

References:
WP 0148 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

Refer to WP 0148 00 for alignment procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
ADHESIVE BONDING

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Trip Balance, NSN 6670-00-401-7195
Heat Lamp
C-Clamps
Roller
Earthenware Container
Clamps

Material/Parts:
Abrasive Paper (Item 6 thru 17, WP 0157 00)
Acetone, Technical (Item 20, WP 0157 00)
Cheesecloth (Item 60, WP 0157 00)
Cloths (Item 73, WP 0157 00)
Polyethylene Cup (Item 98, WP 0157 00)
Gloves (Item 108, WP 0157 00)
Aliphatic Naphtha (Item 122, WP 0157 00)
Paint Remover (Item 126, WP 0157 00)
Soap (Item 165, WP 0157 00)
Tape, Masking (Item 175, WP 0157 00)
Teflon Sheet, (Item 182, WP 0157 00)
Temperature Indicating Strips (Item 187, WP 0157 00)
Tongue Depressor (Item 190, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package contains procedures for the mixing and application of bonding agents. These procedures should be used only when referenced in applicable technical data. For non-critical applications the procedures may be used without specific reference. To obtain optimum benefit from the information and tables, select the proper adhesive as follows:

1. Determine the type of the material to be bonded. Refer to Cross Reference Trade Name, Table 1.

2. Determine the appropriate adhesive system by matching materials in Figure 1. An adhesive system may include more than one type of adhesive, since several adhesives may be identical in physical properties and use.

3. Determine which adhesive system is most suitable. Refer to Adhesive System Criteria, Table 2.

4. Select the adhesive. Refer to Acceptable Adhesive, Table 3.
APPLICATION OF ADHESIVE SYSTEMS

This information is applicable to all adhesives and must be strictly adhered to.

NOTE

High temperatures and humidity shorten adhesive pot life. Low temperatures lengthen adhesive pot life. Urethanes crystallize below 40 degrees F (4 degrees C). Crystals must be warmed to 150 degrees F (66 degrees C) before mixing with other components.

1. If the adhesive or individual components of adhesive have been stored under refrigeration, allow adhesive or components to reach 70 degrees F (21 degrees C), prior to blending or use.

2. No addition or omission of ingredients, or deviation from mixing or blending procedures is permitted.

3. Thinning of adhesives is not permitted unless specifically allowed in the procedure.

4. All multiple-part adhesives must be blended by weight, within 2 1/2 percent. Use trip balance.

5. All multiple-part adhesives must be blended in clean, metal, glass, polyethylene, or teflon containers only.

PREPARATION OF BONDING SURFACES

WARNING

ACETONE, TECHNICAL

NAPHTHA, ALIPHATIC

Unless otherwise specified, all bonding surfaces except thermoplastic, phenolic, and melamine, must be thoroughly cleaned using clean cloths (Item 73, WP 0157 00) moistened with acetone, technical (Item 20, WP 0157 00). Thermoplastic, phenolic, and melamine must be lightly sanded to remove the glass and then cleaned with aliphatic naphtha (Item 122, WP 0157 00).
### Table 1. Cross Reference Trade Name

<table>
<thead>
<tr>
<th>TRADE NAME</th>
<th>TYPE OF MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellophane</td>
<td>Cellulose Film</td>
</tr>
<tr>
<td>Conolite</td>
<td>Polyester Resins and Laminates</td>
</tr>
<tr>
<td>Cymel</td>
<td>Melamine Molding</td>
</tr>
<tr>
<td>Dacron</td>
<td>Polyester Fiber</td>
</tr>
<tr>
<td>Dylene</td>
<td>Polystyrene</td>
</tr>
<tr>
<td>Estane</td>
<td>Urethane Elastomer</td>
</tr>
<tr>
<td>Kralastic</td>
<td>Acrylonitrile-Butadiene Styrene (ABS)</td>
</tr>
<tr>
<td>Kydex</td>
<td>Acrylic-Polyvinyl Chloride Alloy</td>
</tr>
<tr>
<td>Lexan</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Lucite</td>
<td>Acrylic Sheet</td>
</tr>
<tr>
<td>Lusterlite</td>
<td>Pearlescent Acrylic Sheet</td>
</tr>
<tr>
<td>Marbond</td>
<td>Styrene</td>
</tr>
<tr>
<td>Mylar</td>
<td>Polyester Film</td>
</tr>
<tr>
<td>Nylasint</td>
<td>Sintered Nylon</td>
</tr>
<tr>
<td>Orion</td>
<td>Acrylic Fiber</td>
</tr>
<tr>
<td>Plexiglas</td>
<td>Acrylic Sheet</td>
</tr>
<tr>
<td>Seilon S-3</td>
<td>A-B-S Polymer Blend</td>
</tr>
<tr>
<td>Silastic</td>
<td>Silicone Rubber</td>
</tr>
<tr>
<td>Teflon</td>
<td>Fluorocarbon</td>
</tr>
<tr>
<td>Videne</td>
<td>Polyester Film</td>
</tr>
<tr>
<td>Zytel</td>
<td>Nylon Resin</td>
</tr>
</tbody>
</table>
Figure 1. Adhesive System Selection
Table 2. Adhesive System Criteria

<table>
<thead>
<tr>
<th>ADHESIVE SYSTEM NO.</th>
<th>NO. OF COMP.</th>
<th>PHYSICAL PROPERTIES</th>
<th>POT LIFE AT 70 degrees F (21.1 degrees C)</th>
<th>FLASH POINT</th>
<th>SHELF LIFE</th>
<th>STORAGE TEMP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Tough, flexible contact adhesive with good peel strength. Good resistance to fuel, oil, and water.</td>
<td>N/A</td>
<td>30 degrees F (-1 degrees C)</td>
<td>9 months</td>
<td>Below 80 degrees F (27 degrees C)</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>A flexible water resistant contact cement. Poor resistance to fuel and oil.</td>
<td>N/A</td>
<td>54 degrees F (12 degrees C)</td>
<td>9 months</td>
<td>40 degrees to 80 degrees F (4 degrees to 27 degrees C)</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Deleted – Use System 14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>Cures to a tough flexible rubber; resistant to fuel and oil.</td>
<td>2 hours</td>
<td>50 degrees F (10 degrees C) for primer</td>
<td>12 months for adhesive. 90 days for primer</td>
<td>Below 80 degrees F (27 degrees C)</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>A rigid epoxy adhesive, high in tensile and shear strength. Resistant to fuel and oil; fair resistance to water.</td>
<td>2 hours</td>
<td>Part AB: 395 degrees F (202 degrees C) Part CD: 468 degrees F (242 degrees C)</td>
<td>2 years</td>
<td>Below 80 degrees F (27 degrees C)</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>Cures to a flexible rubber; resistant to fuel and oil.</td>
<td>30 minutes</td>
<td>50 degrees F (10 degrees C) for primer</td>
<td>8 months for adhesive. 12 months for primer</td>
<td>Below 80 degrees F (27 degrees C)</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Deleted – Use System 6</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8</td>
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<td>Deleted – Use System 6</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td></td>
<td>Deleted – Use System 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>A tough flexible adhesive, resistant to water, fuel and oil; poor resistance to salt spray.</td>
<td>30 minutes</td>
<td>150 degrees F (66 degrees C)</td>
<td>6 months</td>
<td>Below 80 degrees F (27 degrees C)</td>
</tr>
</tbody>
</table>
### Table 2. Adhesive System Criteria - continued

<table>
<thead>
<tr>
<th>ADHESIVE SYSTEM NO.</th>
<th>NO. OF COMP.</th>
<th>PHYSICAL PROPERTIES</th>
<th>POT LIFE AT 70 degrees F (21.1 degrees C)</th>
<th>FLASH POINT</th>
<th>SHELF LIFE</th>
<th>STORAGE TEMP.</th>
</tr>
</thead>
</table>
| 11  SEE NOTE BELOW  | 2            | Cures to a tough, flexible rubber with good peel strength. Resistant to fuel, water, and salt spray. | 1/2 hr for B-1/2  
1 hr for B-1  
2 hr for B-2  
4 hr for B-4  
8 hr for B-8 | 80 degrees F (27 degrees C) | 6 months | 40 degrees to 80 degrees F (4 degrees to 27 degrees C) |
| 12                  | 2            | A rigid adhesive high in shear and tensile strength. | 20 to 30 minutes | 395 degrees F (202 degrees C) | 2 years | Below 80 degrees F (27 degrees C) |
| 13                  | 3            | A rigid adhesive that will not craze acrylcs. | 10 minutes | - | 1 year | Below 75 degrees F (24 degrees C) |
| 14                  | 2            | A two-component room temperature curing urethane adhesive. | 30 to 70 minutes | - | 6 months | Below 100 degrees F (37.8 degrees C) (unopened containers only) |

### NOTE

The acceptable adhesives under this system are available in a choice of pot lives. For example, B-1/2 indicates a pot life of 30 minutes, B-1 a pot life of 1 hour, etc. The letters and numbers B-1/2, B-1, etc. will be found as part of the manufacturer’s designation for these adhesives in Table 3.

### Table 3. Acceptable Adhesive

<table>
<thead>
<tr>
<th>ADHESIVE SYSTEM NO.</th>
<th>WP 0157 00 ITEM NO.</th>
<th>MANUFACTURER’S DESIGNATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>58 57</td>
<td>Pro-Seal 590M M6249</td>
</tr>
<tr>
<td>2</td>
<td>56 38</td>
<td>EC 1128 Tereco No. 68</td>
</tr>
<tr>
<td>3</td>
<td>Deleted - Use System 14</td>
<td></td>
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</tbody>
</table>
Table 3. Acceptable Adhesive - continued

<table>
<thead>
<tr>
<th>ADHESIVE SYSTEM NO.</th>
<th>ITEM NO.</th>
<th>MANUFACTURER'S DESIGNATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>35</td>
<td>PR 1710</td>
</tr>
<tr>
<td></td>
<td>143</td>
<td>PR 1711 Primer</td>
</tr>
<tr>
<td>5</td>
<td>28</td>
<td>Component A: EC-2216 Part A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Component B: EC-2216 Part B</td>
</tr>
<tr>
<td>6</td>
<td>37</td>
<td>RTV 102</td>
</tr>
<tr>
<td></td>
<td>144</td>
<td>SS4004 Primer</td>
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<tr>
<td>7</td>
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<td>Use System 6</td>
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<tr>
<td>8</td>
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<td>9</td>
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<td>Use System 5</td>
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<tr>
<td>10</td>
<td>34</td>
<td>Pro-Seal 501</td>
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<tr>
<td>11</td>
<td>33</td>
<td>Pro-Seal 719B</td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>PR 9021</td>
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<tr>
<td>12</td>
<td>31</td>
<td>Epocast 50-A</td>
</tr>
<tr>
<td></td>
<td>111</td>
<td>Hardener, Epocast 9816</td>
</tr>
<tr>
<td>13</td>
<td>59</td>
<td>Component A: PS18 Part A</td>
</tr>
<tr>
<td></td>
<td>54</td>
<td>Component B: PS18 Part B</td>
</tr>
<tr>
<td></td>
<td>146</td>
<td>Component C: PS18 Part C</td>
</tr>
<tr>
<td>14</td>
<td>25</td>
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</tr>
</tbody>
</table>

APPLICATION OF ADHESIVE SYSTEM NO. 1

**WARNING**

1. Refer to Table 3 for list of acceptable adhesives. Clean the mating surfaces using acetone, technical (Item 20, WP 0157 00). Refer to preparation of bonding surfaces. Wear gloves (Item 108, WP 0157 00).

2. Stir adhesive thoroughly in its own container using a tongue depressor (Item 190, WP 0157 00). If adhesive is to be sprayed, thin with acetone, technical (Item 20, WP 0157 00). Use only enough thinner to permit spraying.

3. Brush or spray one coat of the adhesive on each mating surface.

4. Apply two coats of adhesive to porous surfaces such as cloth or wood. Allow first coat to dry completely before applying second coat.
APPLICATION OF ADHESIVE SYSTEM NO. 1 – continued

NOTE
Assembled parts may be handled immediately. Adhesive must cure 7 days at 70 degrees F (21 degrees C) or 6 hours at 200 degrees F (93 degrees C) to reach maximum strength.

5. Allow adhesive to dry completely. Join surfaces. Apply pressure to assure contact.

APPLICATION OF ADHESIVE SYSTEM NO. 2

WARNING
NAPHTHA, ALIPHATIC

ADHESIVE

1. Refer to Table 3 for list of acceptable adhesives. Clean mating surfaces using naphtha, aliphatic (Item 122, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

NOTE
Adhesive settles during use.

2. Stir adhesive thoroughly in its container. Use tongue depressor (Item 190, WP 0157 00).

WARNING
ADHESIVE
NAPHTHA, ALIPHATIC

3. Stir adhesive several times during use.

4. Apply uniform coat of adhesive to mating surfaces.

5. Allow adhesive to dry until tacky. Touch lightly with knuckle. If adhesive does not stick to skin, parts may be joined.

6. When bonding a large area, let adhesive dry until no longer tacky. Activate adhesive. Wipe one surface using cheesecloth (Item 60, WP 0157 00) damp with naphtha, aliphatic (Item 122, WP 0157 00). Wear gloves (Item 108, WP 0157 00).
APPLICATION OF ADHESIVE SYSTEM NO. 2 - continued

NOTE
Assembled parts may be handled immediately.

7. Press parts together. Apply enough pressure to assure complete contact without trapped air.

APPLICATION OF ADHESIVE SYSTEM NO. 4

WARNING

ACETONE, TECHNICAL
PRIMER
ADHESIVE

1. Refer to Table 3 for list of acceptable adhesives. Clean mating surfaces using acetone, technical (Item 20, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

2. Brush uniform coat of primer (Item 144, WP 0157 00) on all mating surfaces except rubber. Allow 60 minutes for primer to dry.

NOTE
Pot life of blended adhesive is 24 hours.

3. Weigh 20 parts of adhesive and 1 part of accelerator. Use scales. Blend in polyethylene cup (Item 98, WP 0157 00). Use tongue depressor (Item 190, WP 0157 00).

4. Bond rubber to surfaces other than rubber as follows:

NOTE

Best results are obtained when coat is 0.002 to 0.003 inches thick.

a. Brush uniform coat of blended adhesive on rubber. Allow 60 minutes to dry.

b. Brush coat of adhesive on primed surface other than rubber. Allow to dry until tacky.

c. Join coated surfaces. Apply enough pressure to assure complete contact.

NOTE
Complete cure is achieved after 7 days at 70 degrees F (21 degrees C), or in 16 hours at 200 degrees F (93 degrees C).

d. Cure adhesive, under pressure, for 16 hours at 70 degrees F (21 degrees C) before handling.
APPLICATION OF ADHESIVE SYSTEM NO. 4 - continued

5. Bond rubber to rubber as follows:
   a. Brush uniform coat of blended adhesive on both mating surfaces. Allow 60 minutes to dry.
   b. Brush second coat on one surface. Allow to dry until tacky.
   c. Join coated surfaces. Use sufficient pressure to assure complete contact.

   NOTE
   Complete cure is achieved after 7 days at 70 degrees F (21 degrees C), or in 16 hours at 70 degrees F (21 degrees C), followed by 1 hour at 200 degrees F (93 degrees C).
   d. Cure adhesive, under pressure, for 16 hours at 70 degrees F (21 degrees C) before handling.

APPLICATION OF ADHESIVE NO. 5

WARNING

ACETONE, TECHNICAL

ADHESIVE

1. Refer to Table 3 for list of acceptable adhesives. Clean all mating surfaces with acetone, technical (Item 20, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

2. Blend adhesive as follows:
   a. Mix by weight, 100 parts of part B with 140 parts of part A. Use scales.
   b. Stir mixture in polyethylene cup (Item 98, WP 0157 00). Use tongue depressor (Item 190, WP 0157 00).

3. Apply thin, uniform coat of blended adhesive to mating surfaces.

4. Join parts. Apply enough pressure to assure complete contact.

5. Remove excess adhesive. Use acetone, technical (Item 20, WP 0157 00).

   NOTE
   Heat lamp and temperature indicating strips (Item 187, WP 0157 00) are required for steps a thru d.

6. Cure adhesive. Use one of these cycles:
   a. 6 minutes at 200 degrees F (93 degrees C)
   b. 2 hours at 170 degrees F (77 degrees C)
   c. 8 hours at 120 degrees F (49 degrees C)
   d. 11 hours at 104 degrees F (40 degrees C)
   e. 24 hours at 70 degrees F (21 degrees C)

0074 00-10
APPLICATION OF ADHESIVE SYSTEM NO. 6

1. Refer to Table 3 for list of acceptable adhesives. Clean mating surfaces, using acetone, technical (Item 20, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

2. Brush two coats of primer on all surfaces except rubber. Allow 45 minutes for drying after each coat.


NOTE

A bond line 0.015-inch thick will give best results.

4. Apply enough pressure to assure complete contact. Do not cause excessive squeeze out.

NOTE

Complete bond strength is achieved in 3 days.

5. Cure adhesive 24 hours at 75 degrees F (24 degrees C).
APPLICATION OF ADHESIVE SYSTEM NO. 10

1. Refer to Table 3 for list of acceptable adhesives. Clean mating surfaces using acetone, technical (Item 20, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

2. Mix each component thoroughly in its own container.

3. Weigh 30 parts of accelerator and 100 parts of base. Use trip balance. Blend in polyethylene cup (Item 98, WP 0157 00). Use tongue depressor (Item 190, WP 0157 00).

4. Apply uniform coat of blended adhesive to both surfaces.

5. Join parts. Apply enough pressure to assure complete contact.

6. Remove squeeze out. Use acetone, technical (Item 20, WP 0157 00).

NOTE

Full cure is attained after 48 hours.

7. Cure adhesive 12 hours at 70 degrees F (21 degrees C).

APPLICATION OF ADHESIVE SYSTEM NO. 11

1. Refer to Table 3 for list of acceptable adhesives. Clean mating surfaces using acetone, technical (Item 20, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

2. Blend base with activator. Follow instructions on container.
APPLICATION OF ADHESIVE SYSTEM NO. 11 - continued

3. Apply thin uniform coat of adhesive to both mating surfaces.

4. Assemble parts immediately. Apply enough pressure to assure complete contact.

**NOTE**

Cure times are for holding only. Full cure is achieved in 7 days or more.

5. Cure adhesive at 70 degrees F (21 degrees C) as follows:
   a. Class B1/2 – 16 hours.
   b. Class B1 – 36 hours.
   c. Class B2 – 48 hours.
   d. Class B4 – 60 hours.

APPLICATION OF ADHESIVE SYSTEM NO. 12

**WARNING**

ADHESIVE

NAPHTHA, ALIPHATIC

1. Refer to Table 3 for list of acceptable adhesives. Clean all mating surfaces using naphtha, aliphatic (Item 122, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

2. Weigh 9 parts of curing agent and 100 parts of adhesive. Use trip balance. Mix well in polyethylene cup (Item 98, WP 0157 00). Use tongue depressor (Item 190, WP 0157 00). Wear gloves (Item 108, WP 0157 00) through step 5.

3. Brush coat of adhesive on each ply of repair part.

4. Assemble plies on teflon sheet (Item 182, WP 0157 00).

5. Brush final coat of adhesive on assembled plies.

6. Position plies on repair area with teflon sheet (Item 182, WP 0157 00) facing outward.

7. Remove air bubbles from repair. Use rollers.

8. Apply slight pressure to repaired areas. Use wooden blocks and C-clamps.

**NOTE**

Heat lamp and temperature indicating strips (Item 187, WP 0157 00) are required for step 9 if the 1-hour at 160 degrees F (71 degrees C) is used.

9. Cure repaired area 4 hours at 70 degrees F (21 degrees C) or 1 hour at 160 degrees F (71 degrees C).

10. Remove blocks, clamps, and teflon sheet (Item 182, WP 0157 00).
APPLICATION OF ADHESIVE SYSTEM NO. 13

WARNING

ADHESIVE

NAPHTHA, ALIPHATIC

1. Refer to Table 3 for list of acceptable adhesives.

2. Roughen mating surfaces. Use abrasive paper (Item 8, WP 0157 00).

3. Clean mating surfaces using naphtha, aliphatic (Item 122, WP 0157 00). Allow to dry completely. Wear gloves (Item 108, WP 0157 00).

4. Mask areas around repair area. Use masking tape (Item 175, WP 0157 00).

5. Pour 4 ounces of cement resin in clean earthenware container.

6. Add one 2.4-gram capsule of catalyst to resin. Stir until capsule is dissolved. Use tongue depressor (Item 190, WP 0157 00).

NOTE

Mixture can be kept usable for 24 hours by refrigerating at 40 degrees F (4 C) or lower.

7. Pour 5cc of promoter into clean polyethylene cup (Item 98, WP 0157 00).

NOTE

Pot life of adhesive mix with promoter added is 10 minutes.

8. Add promoter to cement resin/catalyst mixture. Stir well.

9. Brush thin uniform coat of cement on both mating surfaces.

10. Join coated surfaces immediately. Hold together gently 20 seconds before applying pressure.

11. Apply pressure equally. Use clamps.

12. Scrape excess cement onto masked area.

13. After 12 hours, remove clamps.

14. Cure 2 hours at 70 degrees F (21 degrees C).

15. Allow assembly to set 4 hours at 168 degrees F (64 degrees C). Use heat lamp and temperature indicating strips (Item 187, WP 0157 00).
APPLICATION OF ADHESIVE SYSTEM NO. 14

WARNING

ACETONE, TECHNICAL

PAINT REMOVER

ADHESIVE

1. Clean primed mating surfaces using cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

2. If surface primer is flaking or deteriorated, remove as required. Use paint remover (Item 126, WP 0157 00). Remove primer only from bonding area. Wear gloves (Item 108, WP 0157 00).

3. Clean surface where primer was removed. Use cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

NOTE

Fabric from new roll requires no cleaning.


NOTE

Complete mixing is required to obtain maximum adhesive performance.

5. Refer to Table 3 for list of acceptable adhesives. Mix adhesive as follows:
   a. Weigh 100 parts of base and 109 parts of accelerator. Use trip balance.
   b. Mix completely in polyethylene cup (Item 98, WP 0157 00). Use tongue depressor (Item 190, WP 0157 00).

6. Apply uniform coat of adhesive to both mating surfaces.

7. Join parts. Apply enough pressure to assure complete contact.

8. Remove squeeze out. Use cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00). Cure adhesive 48 hours at 70 degrees F (21 degrees C).

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
GENERAL SURFACE CLEANING

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 1-1500-344-23
TM 55-1520-240-23 Series
WP 0076 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

Proper and frequent cleaning is the most important part of a corrosion control program. Frequency of cleaning and related treatment will depend on type of aircraft and local conditions. Aircraft shall be washed and cleaned every 30 days, unless aircraft are stationed within two miles of salt water. Extended or low level operations over salt water require daily fresh water rinsing. External corrosion prone areas will require more frequent cleaning. Perform aircraft cleaning in accordance with TM 1-1500-204-23, and TM 55-1520-240-23 manuals.

In accordance with TM 1-1500-344-23, the preferred cleaning solution is listed in appendix A, Table A.1, as MIL-PRF-85570, Type II. For stubborn or exceptionally oily areas, MIL-PRF-680, Type II or III is an approved substitution. For aircraft surface cleaning, AMCOM has approved products, which comply with MIL-PRF-87937, Type II and MIL-PRF-85570, Type II specifications. Check qualified products list (QPL), QPL-85570 and QPL-87937 for list of approved products. Any deviations from established cleaning procedures or substitution of cleaning materials must be approved by AMCOM.

Refer to WP 0076 00 for Paint Removal.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
PAINT REMOVAL (STRIPPING) USING PLASTIC MEDIA BLASTING (PMB)

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Abrasive, Plastic, (Item 18, WP 0157 00)
Cleaning Compound, Aircraft Surface,
(ITEM 66, WP 0157 00)
Tape Pressure Sensitive, (ITEM 113, WP 0157 00)
N-Hexane, (ITEM 124, WP 0157 00)
Cleaning Compound Solvent, (ITEM 130, WP 0157 00)
Plastic Sheet, (ITEM 132, WP 0157 00)
Tape, Blast, (ITEM 172, WP 0157 00)
Tape, Gray Duct, (ITEM 174, WP 0157 00)
Tape, Masking, (ITEM 175, WP 0157 00)

Personnel Required:
As Required

References:
29CFR1910.9
AR 11-27
NFPA 13, Vol. 1
OSHA 1910.159
TM 1-1500-344-23
TM 55-1500-345-23
TM 55-1520-240-23 Series
T.O. 1-1-1
WP 0157 00
Refer to “Applicable Documents” in this WP

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

All helicopter paint removal (stripping) shall be done per TM 55-1500-345-23. The specific method for stripping existing paint to bare metal is determined by the accessibility of the area, the degree or type of corrosion, and degree of flaking or peeling of paint. Stripping may be accomplished by chemical remover, mechanical means, or a combination of both.

One mechanical means is abrasive blasting, which consists of bombarding a surface with an abrasive at high velocity. The abrasive may be glass beads, steel grit, or organic materials, and is carried to the surface by air at high velocity. Another mechanical means is the Boeing FLASHJET Process. This process is proprietary to The Boeing Company and uses a xenon flashtube and carbon dioxide pellet stream to remove the paint.

GENERAL SPECIFICATIONS FOR REMOVAL OF ORGANIC COATINGS FROM ARMY AIRCRAFT USING PLASTIC MEDIA BLASTING (PMB)

1. Application
   a. This work package outlines the requirements and procedures for removing organic coatings (paint, primers, or lacquers) from Army aircraft structural components using plastic media blasting techniques.
   b. PMB procedures cited apply to open blasting only.
   c. Plastic media blasting shall be used on metal and the following composite surfaces only:
      (1) fiberglass (honeycomb and laminated)
2. Limitations - The plastic media blasting procedures cited herein for the removal of organic coatings from structure are satisfactory, except for the following materials:
   a. Engineering plastics with design requirements that specify they must remain transparent or translucent.
   b. Substrates from which airborne concentrations are extremely limited for worker health reasons. (Example: cadmium, in most localities).

3. Classification - The plastic media used shall conform to Military Specifications MIL-P-85891 as follows:
   a. Type V, Acrylic (Thermoplastic) - Refer to paragraph 1.2.1 of MIL-P-85891
   b. Color No. 5, white to light gray - Refer to MIL-P-85891
   c. Part Number – The part numbering system shall be in accordance with paragraph 6.7 of MIL-P-85891.

4. Applicable Documents - The following specifications and standards form a part of this work package to the extent specified herein. Unless otherwise specified, the issue of these documents shall be those listed in the Department of Defense Index of Specifications and Standards (DODISS) and those cited in this work package.
   a. Federal Specifications
      (1) QQ-A-250/4 - Aluminum alloy, 2024, plate and sheet
      (2) QQ-A-250/2 - Aluminum alloy, 7075, plate and sheet
   b. Military Specifications
      (1) MIL-C-5541 - Chemical Conversion Coatings on Aluminum and Aluminum Alloys
      (2) MIL-P-23377 - Primer Coating, Epoxy Polyamide, Chemical and Solvent Resistant
      (3) MIL-C-38334 – Corrosion Removal Compound Pre-Paint for Aircraft Aluminum Surfaces
      (4) MIL-C-43616 – Aircraft Surface Cleaning Compound
      (5) MIL-C-81706 – Chemical Conversion Materials for Coating Aluminum and Aluminum Alloys
      (6) MIL-PRF-87937 – Coating Polyurethane, Aircraft and Support Equipment
      (7) MIL-P-85891 – Plastic Media, for Removal of Organic Coatings
      (8) MIL-PRF-85285 – Cleaning Compound, Aircraft Exterior Surfaces, Water Dilutable
   c. Standard – Military Adopted
      (1) SAE AMS-S-13165 – Shot Peening of Metal Parts
   d. Other Government Documents
      (1) TM 1-1500-344-23 – Weapons System Cleaning, Corrosion Prevention and Control
      (2) TM 55-1500-345-23 – Painting and Marking of Army Aircraft
e. Other Publications
   (2) Compressed Gas Association Commodity Specification G-7.1-1966
   (3) National Electric Code for Class II, Division I Locations

MATERIAL REQUIREMENTS

1. The plastic media shall be manufactured from acrylic plastic in accordance with the requirements stated for Type V plastic media in MIL-P-85891.

2. The particle shape of the media shall be irregular with sharp, angular edges and corners, and should have a hardness of 46 to 54 BARCOL.

3. The particular size of the media shall normally be 20 to 30 mesh with the same particle size distribution shown in Table 1. If the minimum stripping rate of 0.50 foot per minute cannot be met, the addition of 16 to 20 mesh media is authorized, as long as a maximum arc height of less than 10 mils, as shown in Table 2, is maintained.

<table>
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<tr>
<th>U.S. Standard</th>
<th>12/16 Maximum %</th>
<th>16/20 Maximum %</th>
<th>20/30 Maximum %</th>
<th>30/40 Maximum %</th>
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Table 2. Maximum Arc Height Limits

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<th>U.S. STANDARD SCREEN SIZE</th>
<th>MAXIMUM ARC HEIGHT (mils)</th>
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<tr>
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<td>&lt;12.0</td>
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<tr>
<td>30/40</td>
<td>&lt; 7.0</td>
</tr>
</tbody>
</table>

NOTE

U.S. standard screens can be purchased from Allied Fischer Scientific or equivalent.
MATERIAL REQUIREMENTS – continued

4. Chemical and Physical: The chemical and physical properties of Type V acrylic product shall be IAW Table 1 of MIL-P-85891.

5. Source of Plastic Stock: An infrared spectrogram of the plastic media shall be identical to that depicted in Figure 5, MIL-P-58591, when analyzed in accordance with paragraph 4.5.2 of MIL-P-85891.

6. Media Contamination:
   a. Media having a high density particle contamination level of 250-300 parts per million (ppm) can cause structural fatigue, and is not permitted for airframe substrate PMB.
   b. New and existing media is to be tested as a first article and as required thereafter per paragraph entitled “Media Contamination Test Procedures” of this work package.

EQUIPMENT REQUIREMENTS

1. PMB equipment used to remove organic coatings from aircraft surfaces shall be a direct pressure feed abrasive blasting unit capable of propelling a controlled and continuous stream of plastic media. This equipment also requires indicator and regulation devices.

2. Siphon fed abrasive blasting equipment shall not be used for plastic media blasting.

3. PMB equipment shall have a classification system (i.e., cyclone separator, vibratory screening system, dust bags, or water filter removing particles such as paint chips, dust, sand, metallic particles, etc. produced by the blasting operation).

4. PMB equipment shall be capable of maintaining acceptable levels of size and cleanliness IAW Table 1, MIL-P-85891, and paragraph entitled “Sampling of Plastic Media Before Blasting Operations” of this work package.

5. PMB equipment shall be designed with a recovery system consisting of the following:
   a. Cyclone Separator: Separates light dust from plastic media.
   b. Rotary Airlock: Passes heavier plastic media through rotary vanes into the magnetic separator.
   c. Magnetic Separator: Separates and removes ferrous material impurities from the plastic media.
   d. Screen Separator: Vibrating screen separates small undersize media from heavier media by passing the smaller size media through a screen into a waste container. Heavier media falls into storage hoppers for reuse. A double chamber pressure pot shall be utilized to maintain a continuous media stream.
   e. Operator Equipment: Operator safety equipment is required and shall include intercommunication devices, respiratory equipment, blast hood, and hearing protection. The operator equipment consists of the following:
      (1) Breathing Air: The system shall include, as a minimum, all breathing air purification equipment necessary to provide Class D breathing air as described in the Compressed Gas Association Commodity Specification G-7.1-1966. If a compressor is used to supply the air, it shall either be a breathing air compressor or a compressor equipped with both a carbon monoxide and high temperature alarm.
      (2) A breathing air filter shall be provided to remove particulars, moisture, and oil vapor, Chemco Industries, Model CPF-80 or equivalent.
      (3) A carbon monoxide monitor shall be provided, Dynamation, Inc. Model ABL-50 or equivalent.
      (4) Voice Communication: Radio headset.
      (5) Hearing Protection: As required for operator safety.
      (6) Blast Suit: “Apollo” helmet with leather front, suit, and gloves, Clemco Industries or equivalent.
EQUIPMENT REQUIREMENTS - continued

6. Equipment Maintenance:
   a. PMB equipment shall be operated and maintained in accordance with the equipment manufacturers instruction manual.
   b. The blasting nozzle and plastic media transport hoses shall be visually inspected for excessive wear. Replace these items as required.

FACILITY REQUIREMENTS


   WARNING

   EXPLOSIVE HAZARD:

   Plastic media dust accumulation in a confined area may produce explosive conditions.
   a. Ventilation: A minimum cross-draft ventilation rate of 75 cubic feet per minute per square foot of open face area shall be provided.
   b. Dust Collector: The dust collector system shall be capable of removing 99.7 percent of the particles 0.3 micron, or greater, in size from the re-circulation system.
   c. Dust Monitor: The dust monitor equipment shall be capable of continuously monitoring explosive conditions of air in the PMB facility.
   d. Lighting: A minimum of 55 foot candles (55 lumens/sq. ft.) of illumination at the working surface is required. Portable lighting shall be provided as required to prevent shadows on the side and bottom of the work piece. All lighting shall meet requirements of the National Electric Code for Class II, Division 1 locations (dust ignition proof). Refer to Army Regulation 11-27.
   e. Compressed Air: Compressed air shall have a maximum relative humidity of 60 percent at 70 degrees F (21 degrees C). Air shall be filtered to remove moisture, oil, and solid particles.

   NOTE

   Moisture or oil in compressed air will cause the plastic media to clump, thus clogging the metering valve and producing erratic performance.

2. Safety Requirements:
   a. A flashing safety warning light shall operate during PMB operations and shall be located outside all PMB room doors.
   b. All doors shall be designed to open outward.
   c. All electric equipment, i.e., motors, lighting, and outlets, shall meet all requirements of the National Electrical Code Class II.
   d. Utilities associated with installation shall meet the requirements identified in Article 512 of the National Code Electrical Code.
   e. Static straps/grounding cords and grounding points are required in the PMB facility per individual aircraft technical manuals.
FACILITY REQUIREMENTS - continued

**CAUTION**

Sensitive electronic and avionics equipment must be properly grounded to preclude electro-static discharge damage.

f. A closed-head, wet/dry automatic sprinkler system that complies with OSHA 1910.159 and NFPA 13, Vol. 1 is required in each room and enclosure.

g. Operators shall periodically sweep the PMB room walls to prevent dust accumulation.

h. Integrated emergency lighting is required in the facility to illuminate exits in case of a power failure.

i. Illuminated exit signs are required inside the facility.

j. A digital dust concentration system for the PMB room is required. The airflow should be continuously monitored to ensure that the airborne concentration does not exceed 15 percent of the maximum explosive dust level inside the PMB room. Refer to Section 6.6 of MIL-P-85891.

k. The PMB operators shall have protection from noise levels exceeding 85 decibels measured on the “A” weighting scale. Refer to TB MED 501.

l. The Noise level outside the PMB room shall not exceed 85 decibels measured on the “A” weighting scale at a radius of 10 feet from the PMB equipment and enclosure. Readings shall be taken from a height of five feet above the floor (ear level). Refer to 29CFR 1910.95.

TRAINING REQUIREMENTS

1. Personnel performing and supervising the PMB removal of organic coatings (lacquers, primers, and top coats) from aircraft and component parts shall complete a three-phase training program leading to certification.

2. AMCOM Readiness Directorate, New Equipment Training Division, identifies training sources. Contact the Contracting Officer for information pursuant to training.

3. Phase I shall consist of lectures and demonstrations with sufficient examinations given to access the candidate’s comprehension of the subject matter. Training shall include, but not be limited to, the following topics:
   a. General knowledge of the abrasive stripping theory.
   b. General knowledge of the facility and media cleanliness requirements, and an understanding of their importance.
   c. Thorough understanding of the contents of this work package as they relate to PMB parameters and applicable substrates.
   d. Specific knowledge of the aircraft surfaces, parts, and coating systems to be removed.
   e. Specific knowledge of masking techniques and materials required to prevent plastic media intrusions into the aircraft interior.
   f. Specific knowledge of pre-operation cleaning and inspection requirements.
   g. Knowledge of personal protective equipment use and maintenance.

4. Phase II shall consist of actual PMB equipment use on test panels and scrap aircraft parts to remove their organic coatings. Phases I and II will be approximately eight hours.

5. Phase III shall consist of practical exercises for at least 32 hours. During the exercises, the new operator(s) will be supervised by certified personnel. Exercises will be conducted using production aircraft and/or components/parts.
MECHANICAL REMOVAL OF ORGANIC COATINGS

1. Sampling of Plastic Media Before Blasting Operations
   a. Media having a high-density particle contamination level of 250-300 parts per million (ppm) can cause structural fatigue, and is not permitted for airframe substrate PMB.
   b. New and existing media is to be tested as a first article and as required thereafter per paragraph entitled “Media Contamination Test Procedures” in order to assure that maximum levels of contamination are not exceeded. Media found to have an unacceptable level of contamination shall be purged from the system and replaced with new media.

MECHANICAL REMOVAL OF ORGANIC COATINGS - continued

CAUTION

PMB with heavily contaminated media may permanently damage aircraft substrate surfaces.

2. Preparation of Aircraft for PMB - Cleaning and Masking
   a. Remove, open, or protect all cowlings, doors, power train components (engines, transmissions, gearboxes, etc.), avionic components, fuel and oil lines, and fuel cells per aircraft specific requirements.
   b. Clean aircraft surfaces/components per the requirements of TM 1-1500-344-23.
   c. Mask aircraft door openings using blast tape, (Item 172, WP 0157 00); seal door areas using Gray Duct Tape, (Item 174 WP 0157 00) and plastic sheet (Item 132, WP 0157 00).
   d. Mask aircraft cowling openings with the same tapes and techniques cited above and reinstall the cowlings.
   e. Seal cabin door seams and any other gaps with a bead of hot glue (Item 113, WP 0157 00). This material is used to seal seam covers and access panel gaps less than 3/16 inch.

WARNING

HOT PARTS:

Molten plastic can severely burn exposed skin. Operators must wear gloves while hot gluing.

f. Cover all transparent plastic and glass surfaces. Fabricate form-fitting shields for canopies and blisters from 0.125 inch black rubber floor matting (NSN 7220-01-057-1897). Use blast tape (Item 172, WP 0157 00) to mask transparency edges.

CAUTION

Transparent surfaces may be permanently damaged during PMB operations, if not properly masked or covered as specified.

g. Mask or plug all remaining holes and gaps on the aircraft/component to prevent intrusion of plastic media into its interior areas. Also mask bearings, drive shafts, scuppers (drains), and all moving surfaces, actuators, and linkages. Mask all cadmium plated or conversion coated/anodized hardware that will not be replaced in subsequent operations.

0076 00-7
h. Mask or protect parts so that oil passages or other openings will not be obstructed by media, media will not be entrapped inside of the part, and finished or close tolerance surfaces will not be damaged.

i. When stripping cockpit or cabin interior panels, additional masking is required to exclude media from smaller compartments and electrical items, such as wiring and connectors.

NOTE

Masking material may include cork, wood, foam, hot melt adhesive sticks, etc.

3. Mapping

a. The mapping technique (unique for each Army aircraft model) provides a certified PMB operator with information allowing him to know what pressures, stand-off distances, and angle of attack to use in removing the coatings from the painted aircraft panels having different skin thickness, thus imparting a minimum stress and damage to the aircraft skins during the PMB operations.

b. The mapping procedure is as follows:

   1. Develop a color chart based on the information in TM 55-1520-240-23, this DMWR, and the manufacturer's blueprints.

   2. Use the referenced technical data to locate the aircraft panels, determine their respective skin thicknesses, and the material composition of each panel (e.g., aluminum, fiberglass).

   3. For the skin thickness of each panel and category, refer to Table 3, and assign a specific color.

   4. Outline each panel with spray paint using the same color assigned to the panels on the map. Repeat this procedure until all aircraft panels are outlined with their assigned colors.

4. Aircraft Coating Removal Procedures

a. Position the cleaned and masked aircraft/components at the PMB site.

b. Dress PMB operators in the appropriate protective gear.

c. Using a hypodermic needle gage, verify the indicated pressure readings at the nozzle (taken at a 45 degree angle away from the flow of the media) meets the requirements of Table 3.

NOTE

The flow rate will be verified whenever media is changed or new media is added.

d. Ground all equipment and aircraft components.

e. Remove the organic coatings from the aircraft surface using plastic media, Type V, and the operating parameters specified in Table 3. Begin the PMB stripping operation under the belly of the aircraft by removing the coating from panels with the lowest thickness values and continue to the next group of panels with increasing thickness. Continue this procedure with the remaining fuselage surfaces (top and sides) and the aft pylon. When the aircraft has been previously painted with Chemical Agent Resistant Coating (CARC) and is intended to continue with CARC, remove only the topcoat, leaving as much of the MIL-P-23377 primer as possible. The same applies to aircraft primed with TT-P-1757 when that aircraft is intended to continue with TT-P-1757.
NOTE
A minimum removal rate of 0.50 ft/min shall be maintained.

f. The certified operator(s) should keep the nozzle moving at all times and maintain the stand-off distances, pressures, and impingement angles (angle of attack) specified in Table 3. This technique will enable the operator to remove one layer of organic coating at a time and will decrease the dwell time spent in any one area. Dwell time should not exceed Table 3 specifications.

NOTE
Since PMB operations are physically tiring, the operators should be relieved at least every three hours by another certified operator. These rotations are necessary to maintain PMB operator efficiency.

g. PMB stripping of KEVLAR panels will result in fibrillation (fuzzing) of the composite material. Fibrillation of KEVLAR is known to cause a degradation of mechanical properties. On nonstructural KEVLAR panels the KEVLAR fuzz can be removed. To effect repair, a thin coating of resin is reapplied to the substrate composite and allowed to cure. Any remaining fibers are then wet sanded until removed using very fine grit sandpaper. Care should be exercised not to cause additional fibrillation through sanding. Once the resin surface has been readied for primer, a yellow epoxy-polyamide (MIL-P-23377) primer is applied, see NOTE below. The yellow color will be used as an indicator for future PMB stripping of the composite panel. Care should be exercised not to blast off the yellow primer with plastic media during subsequent paint removal cycles. When stripping KEVLAR panels, speed of coating removal should take secondary precedence for the PMB operator over substrate protection.

NOTE
The yellow primer is not always present with the original paint from the manufacturer. The first time each CH-47D has the coatings removed from the KEVLAR panels, it will be particularly difficult for the PMB operator to detect when all coatings are removed. The operator should take extra care not to dwell on the bare KEVLAR, as this will lead to rapid destruction of the composite.
### Table 3. Type V, Plastic Media Blasting (PMB) Parameters

<table>
<thead>
<tr>
<th>METAL Material Thickness (inch)</th>
<th>Supported/Unsupported (Note A)</th>
<th>Air Pressure (psi) (Note B)</th>
<th>Media Flow Rate (lbs/hour) (Note C)</th>
<th>Standoff Distance (inch)</th>
<th>Impingement Angle (degree)</th>
<th>Clad/Nonclad</th>
<th>Dwell Time (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.016 - 0.031</td>
<td>Supported</td>
<td>30 - 32</td>
<td>450 - 480</td>
<td>18 - 24</td>
<td>15 - 30</td>
<td>Either</td>
<td>&lt;=1</td>
</tr>
<tr>
<td></td>
<td>Unsupported</td>
<td>30 - 32</td>
<td>450 - 480</td>
<td>18 - 24</td>
<td>&lt;= 15</td>
<td>Either</td>
<td>&lt;=1</td>
</tr>
<tr>
<td>0.032 - 0.063</td>
<td>Supported</td>
<td>30 - 32</td>
<td>450 - 480</td>
<td>18 - 24</td>
<td>15 - 30</td>
<td>Either</td>
<td>&lt;=1</td>
</tr>
<tr>
<td></td>
<td>Unsupported</td>
<td>30 - 32</td>
<td>450 - 480</td>
<td>18 - 24</td>
<td>&lt;= 15</td>
<td>Either</td>
<td>&lt;=1</td>
</tr>
<tr>
<td>0.064 and greater</td>
<td>Supported</td>
<td>30 - 32</td>
<td>450 - 480</td>
<td>18 - 24</td>
<td>60 - 80</td>
<td>Alclad</td>
<td>&lt;=1</td>
</tr>
<tr>
<td></td>
<td>Unsupported</td>
<td>30 - 32</td>
<td>450 - 480</td>
<td>18 - 24</td>
<td>45 - 60</td>
<td>Either</td>
<td>&lt;=1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPOSITE Material Thickness (inch)</th>
<th>Supported/Unsupported (Note A)</th>
<th>Air Pressure (psi) (Note B)</th>
<th>Media Flow Rate (lbs/hour) (Note C)</th>
<th>Standoff Distance (inch)</th>
<th>Impingement Angle (degree)</th>
<th>Clad/Nonclad</th>
<th>Dwell Time (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>Either</td>
<td>18 - 20</td>
<td>450 - 480</td>
<td>24 - 30</td>
<td>&lt;= 15</td>
<td>N/A</td>
<td>0</td>
</tr>
</tbody>
</table>

### NOTES

A. Unsupported - no backing structure to surface being treated.
B. Taken at a 45 degree angle away from linear flow of the media.
C. All parameters based on a nozzle diameter of 0.50 inches.

### CAUTION

Certified PMB operators shall never direct a nozzle at other personnel. If more than one operator is engaged in the blasting operation at the same time, each operator shall be located on opposite sides and/or ends of the aircraft or equipment, to ensure a safe separation distance. Moreover, operator(s) shall be equipped with intercommunication devices to enable them to communicate with each other during the PMB operations.

5. Clean-Up after PMB Operations

   a. When the necessary organic coatings are removed by PMB, thoroughly vacuum all surfaces of the aircraft, equipment, or component with a heavy duty, pneumatic type wet/dry vacuum cleaner to remove all plastic media dust and residual media.

   b. Remove all masking materials.

   c. Inspect previously masked interior areas and crevices for dust or media particle presence and vacuum as required.

6. Component Part Clean-up After PMB

   a. The part shall be free of dust, powder, or smut.

   b. Remove all blasting media dust by blowing with dry compressed air (30 psig maximum).
MECHANICAL REMOVAL OF ORGANIC COATINGS - continued

NOTE

Make certain there are no oil passages, or other openings blocked, and that there is no media trapped inside the part. When necessary, use a flashlight, mirror, magnifying glass, and boroscope to assure that all media has been removed.

Some parts might require cleaning with dry cleaning solvent (Item 69, WP 0157 00) to remove fine dust left on the part. Blow the part dry with dry, filtered compressed air.

c. Flush all oil passages with pressurized dry cleaning solvent (Item 69, WP 0157 00), and assure passageways are not blocked. After this test, remove the excess solvent by blowing with filtered, dry compressed air.

d. The part shall meet all drawing requirements for dimensional tolerances and for surface roughness.

e. Substrate coatings (anodize, conversion coating, alclad) shall show no evidence of damage.

PREPARATION OF AIRCRAFT FOR REPAINTING


QUALITY ASSURANCE (QA) REQUIREMENTS

1. QA shall monitor the PMB process, and examine the end items, to insure that procedures are being followed.

2. QA shall verify and maintain records documenting that only certified operators perform the PMB process.

3. QA shall verify that only an approved and properly maintained blast facility is used.

4. QA shall verify that only certified plastic media is used.

5. PMB stripping of the fuselage should be permanently recorded in the aircraft logbook.

DISPOSAL GUIDELINES FOR USED PLASTIC MEDIA

1. MIL-P-85891, Type V acrylic resin is classified as a non-hazardous material, and its use, transportation, and storage are not subject to environmental restrictions. As such, its resin or dust may be recycled or disposed of in a sanitary landfill in accordance with federal, state, and local regulations.

2. However, when acrylic plastic abrasive is used to remove aircraft coatings containing heavy metal pigments of arsenic, barium, cadmium, chromium, lead, mercury, selenium, or silver, the dust may be classified as hazardous waste, which may be determined by an EPA toxicity test. If the waste is found to be hazardous, its disposal should be in accordance with EPA (Federal), state, and local regulations where the plastic media operation takes place.
MEDIA CONTAMINATION TEST PROCEDURES

This procedure is for use in installation laboratories.

1. Equipment/Materials Required:
   a. One 500 Milliter Separatory Funnel
   b. Rod Stand, for separatory funnel
   c. Holding Rings, for funnels
   d. Cleaning Compound Solvent, 3M PIN PF-5060, CAGE 28112 (Building 223-6F-04)
   e. N-Hexane, reagent grade, NSN 6810-01-063-4534
   f. One Glass Funnel, 3-inch nominal diameter
   g. One Glass Powder Funnel (large stem), 4-inch nominal diameter
   h. Whatman number 42 (or equal) filter paper, 12.5 cm, to fit above funnel
   i. Scale, 1000 grams capacity, 0.1 gram sensitivity
   j. Analytical balance, 100 grams capacity, 0.001 gram sensitivity
   k. Costly dual range balances are available which offer bulk weighing and precision weighing in a single instrument. These may be substituted for the above two units, but have limited capacity.
   l. 500-600 mi tall form Pyrex beaker
   m. 250 mi Pyrex beaker
   n. 500 mi graduated glass cylinder
   o. Two jug-type glass storage bottles, 1-gal, with screw caps
   p. Hydrometer, 1.60-1.80 specific gravity
   q. Pyrex watch glass, 75-90mm diameter
   r. Nalgene polyethylene wash bottles, 250 mi.
   s. Spatula, stainless steel
   t. Glass stirring rods, 10-inch
   u. Neoprene gloves, size as required
   v. Specimen forceps

2. Sampling Procedure: Collect approximately two liters of media.
   a. Used Media: The best representative sample is obtained by collecting media directly from the blast nozzle; but if this is not feasible, collect the sample from media hoppers (located after separation equipment in recovery reclamation system).
   b. New Media: The best representative sample is obtained by agitating the shipping container to thoroughly mix media prior to sampling. Given the size and weight of shipping containers, this could be difficult. So, new media may be sampled from the shipping container without agitation if necessary.
MEDIA CONTAMINATION TEST PROCEDURES - continued

3. Contamination Test Procedure:
   a. Ensure all glassware is clean and dry.

   ![WARNING]

   Use solvents with caution. Keep away from heat and open flame. Keep container closed. Use only with adequate ventilation. Avoid prolonged or repeated contact with skin. Avoid swallowing.

   b. Prepare a mixture of five percent by volume hexane and 95 percent by volume perfluorohexane. In order to facilitate mixing, add hexane to the mixing vessel first, and then add the cleaning compound solvent (Item 130, WP 0157 00). The function of the perfluorohexane is to separate any dense particles from the plastic media. The specific gravity of the perfluorohexane is high enough to float the light plastic media while permitting any dense particles to settle. The purpose of the hexane is to resolve a problem with particles adhering to the sides of the separatory funnel in the following procedure. Care must be taken not to exceed the five percent content of hexane because it reduces the specific gravity and affects the flotation property of the mixture. The specific gravity of the mixture should read approximately 1.66 as determined with a hydrometer, but should never be below 1.60. A quantity of the mixture may be prepared in advance and stored until needed; however, storage should be in an appropriate small-neck storage bottle with a tight-fitting cap.

   c. Add approximately 300-350 ml (bulk dry volume) of sample media to 500 ml beaker. Weigh beaker and media to the nearest tenth gram (0.1 gm) and record (Weight #1) gross weight. Pour media into 500 ml separatory funnel (stopcock closed) and ensure there is no spillage. Obtain tare weight of 500 ml beaker and record (Weight #2) to the nearest tenth gram (0.1 gm).

   d. Add the fluid to separatory funnel leaving some air space in the funnel for ease of agitation. Swirl the mixture. A swirling motion is more appropriate than shaking to reduce entrainment of air and suspension of particles. Media samples may contain some dust sized particles, which may be suspended in the fluid after agitation. Tapping the side of the funnel should dislodge any particles adhering to the sides. Place the separatory funnel on the rod stand using holding ring. Allow 10 minutes for the suspended dust to settle or rise. Higher density particles will accumulate in the bottom of the separatory funnel on top of the stopcock.

   e. Fold the filter paper in a standard filter fold and place it in a three-inch glass filter funnel. Position the filtering funnel in a holding ring on the rod stand beneath the separatory funnel and place a beaker beneath the filtering funnel. Higher density particles will be settled out in the bottom of separatory funnel (on top of stopcock). Use short duration opening of stopcock in order to drain higher density particles into filter funnel. Tapping the side of the separatory funnel may help to remove the high density particles. Do not allow fluid level to get too low, which might allow some floating media to be deposited with the high density contaminants. Additional fluid may be added to the separatory funnel. Take care not to agitate mixture. If agitation occurs, allow 10 minutes for suspended dust particles to float/settle prior to continuation of decantation. To separate all of the high density particles, the process has to be repeated until no particles will separate out of the plastic media. One attempt will not extract them all.
MEDIA CONTAMINATION TEST PROCEDURES - continued

f. Place the filter and filtrate in a vented, dust free location (preferably a laboratory hood) to dry for one hour. Measure the weight of the filter paper and filtrate to 0.001 gm precision. Allow the filter paper to dry an additional 30 minutes and reweigh. If there is a change greater than 0.001 gm, continue to dry the sample, checking the weight every 30 minutes until the weight between intervals does not change. Obtain the tare weight of a watch glass. Carefully remove the filtrate from the filter paper onto the watch glass by tapping. Unfold the filter paper and remove the remaining particles with a hard instrument, such as a metal spatula. Do not use a brush. Fine particles or dust may have impregnated the filter paper. This residue is not a major concern and may be disregarded because fine particles (less than 80 mesh, U.S. Standard Sieve) are not damaging to aircraft materials or structure. Depending upon the balance used, weigh or calculate the weight of the dense particles to 0.001 gm precision and record as Weight #3.

g. The mixed test fluid should be retained for reuse. Filter the used fluid mixture through a funnel with clean filter paper. Store in a separate, small-neck, tightly closed and properly labeled container. Recheck specific gravity with a hydrometer to assure it is in the proper range prior to reuse.

h. Calculations: Gross weight of media and 500 ml beaker (Weight #1) minus tare weight of 500 ml beaker (Weight #2) equals net weight of media.

\[ \text{Weight} \#1 - \text{Weight} \#2 = \text{Media Weight} \]

\[ \text{Weight} \#3 = \text{Dense Particles Weight} \]

The Dense Particles Weight divided by the Media Weight equals the weight fraction of dense particles in the sample. Multiply the weight fraction by 100 to find the weight percent of dense particles in the sample.

\[ \left( \frac{\text{Dense Particles Weight}}{\text{Media Weight}} \right) \times 100 = \text{Percent Media Weight} \]

i. The contamination level (percentage) is a measure of all possible heavy contaminants listed earlier in this section. The high density contamination level (percentage) is a measure of silicates and metal particles. The high density contaminants (sand and glass in particular) tend to cause the most fatigue life degradation. The level of high density particles shall not exceed 0.02 percent as calculated above when the media is used to strip aerospace equipment.

DETERMINING RESIDUAL STRESSES TO METALLIC SUBSTRATES

1. This test is used to assess the implied residual stress due to plastic media blasting.

2. Test Method:

a. Shear a minimum of ten Almen strips (0.75" x 3.00") designed per AMS-S-13165 from 0.032 inch 2024-T3 bare aluminum sheet (Fed Spec QQ-A-250/4). Orient the 3.00-inch dimension of the Almen strip in the rolling direction.

b. Subject the base aluminum Almen strips to 30 seconds of continuous exposure from the plastic media and blast at a 30 psi nozzle pressure and a 30 degree angle of attack using a 3/8 inch nozzle diameter and a minimum mass flow rate of 300 lbs/hr. Also use an 18 inch stand-off distance.

c. Measure the average of ten Almen arc heights to the nearest 0.1 mil with a dial indicator. The average value is not to exceed the arc heights for the different mesh sizes shown below for any plastic abrasive used. Mesh size classification for the varying size of plastic abrasive is defined in MIL-P-85891 (AS) and is shown below:
DETERMINING RESIDUAL STRESSES TO METALLIC SUBSTRATES - continued

Table 4. Maximum Arc Height Limits

<table>
<thead>
<tr>
<th>U.S. STANDARD SCREEN SIZE</th>
<th>MAXIMUM ARC HEIGHT (MILS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/16</td>
<td>&lt;15.0</td>
</tr>
<tr>
<td>16/20</td>
<td>&lt;12.0</td>
</tr>
<tr>
<td>20/30</td>
<td>&lt;10.0</td>
</tr>
<tr>
<td>30/40</td>
<td>&lt; 7.0</td>
</tr>
</tbody>
</table>

NOTE

U.S. standard screens can be purchased from Allied Fischer Scientific or equivalent.

Table 5. Particle Size Distribution

<table>
<thead>
<tr>
<th>U.S. Standard</th>
<th>12/16</th>
<th>16/20</th>
<th>20/30</th>
<th>30/40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesh Size</td>
<td>Retain</td>
<td>Pass</td>
<td>Retain</td>
<td>Pass</td>
</tr>
<tr>
<td>10</td>
<td>0.1</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>5.0</td>
<td>--</td>
<td>0.1</td>
<td>--</td>
</tr>
<tr>
<td>16</td>
<td>--</td>
<td>20.0</td>
<td>15.0</td>
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<td>20</td>
<td>--</td>
<td>5.0</td>
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<td>20.0</td>
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<td>60</td>
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<td>--</td>
</tr>
<tr>
<td>100</td>
<td>--</td>
<td>1.0</td>
<td>--</td>
<td>1.0</td>
</tr>
</tbody>
</table>

DETERMINING MINIMUM STRIPING RATE OF PLASTIC MEDIA

1. Preparation of Test Panels - Prepare test panels of 2024-T3 bare aluminum (6" x 12") for plastic media stripping as follows:
   a. Alkaline clean using detergent material conforming to MIL-C-38334.
   b. Deoxidize test panels using material conforming to MIL-C-38334.
   c. Within four hours, chemically conversion treat the test panels using MIL-C-81706 materials applied IAW MIL-C-5541.
   d. Apply epoxy primer (MIL-P-23377 Type II) to the chemically converted surface of the test panels to a dry film thickness of 0.0006 to 0.0009 inch. Allow primer to dry for at least 30 minutes.
   e. Apply polyurethane topcoat (MIL-C-83286, FED STD 595, Color No. 36495) to primed surfaces of the test panels to a dry film thickness of 0.0017 to 0.0023 inch.
   f. Cure painted test panels for seven days in a controlled environment maintained at 72 degrees F and 50 percent relative humidity or conduct an accelerated cure of the test panels by curing in an oven maintained at 210 degrees F plus 25 degrees F for a 96-hour period.
DETERMINING MINIMUM STRIPING RATE OF PLASTIC MEDIA – continued

2. Monitoring Painted Test Panel Thickness:
   a. Monitor primer and topcoat thickness of each test panel to ensure paint thickness tolerance. Film thickness measurements should be directly measured to the substrate surfaces at six locations for each panel.
   b. Film thickness measurements should be made IAW ASTM Standards B499 and 8244 using a coating thickness gap to a resolution of 0.01 mils.

3. Determine Stripping Rates
   a. Blast at least five painted test panels using a 3/8-inch diameter nozzle, a mass flow rate of 300 lbs/hr, 18-inch stand-off distance, and a 30 degree angle of attack, and 30 psi nozzle pressure.
   b. Record the paint stripping times to the nearest 0.1 seconds and average the results for five painted test panels and, express the results in square feet per minute.

<table>
<thead>
<tr>
<th>U.S. STANDARD MESH SIZE</th>
<th>MINIMUM MEAN STRIP RATE (FT/MIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/16</td>
<td>0.35</td>
</tr>
<tr>
<td>16/20</td>
<td>0.30</td>
</tr>
<tr>
<td>20/30</td>
<td>0.20</td>
</tr>
<tr>
<td>30/40</td>
<td>0.10</td>
</tr>
</tbody>
</table>

DETERMINING PLASTIC PARTICLE BREAKDOWN

Minimum breakdown rates for plastic abrasives are needed for both economic reasons and to minimize dust in the work environment. The following procedure will be used to determine plastic particle breakdown.

1. Blast a 10 pound U.S. Standard 20/30 mesh sample (conforming to particle size distribution in MIL-P-85891 (AS) against an aluminum plate, 15" x 15" x 0.25" conforming to QQ-A-250112, T6 temper, until all of the charge abrasive medium is consumed.

2. Blasting should be conducted in a pressure pot blast cabinet with the media reclamation system turned off or disabled. Blasting parameters are 1/4 inch nozzle at 60 psi nozzle pressure, 90 degree angle of attack to the plate with a 10-inch stand-off distance, and a minimum mass flow rate of 60 lbs/hr of media.
DETERMINING PLASTIC PARTICLE BREAKDOWN - continued

After each blast cycle, collect the media and recharge the system. Repeat this procedure until five complete blast cycles are completed. The particle size distribution of the collected abrasives after five blast cycles shall be measured in accordance with MIL-P-85891 (AS). Particle size distribution of the blasting media shall exceed the following:

Table 7. Particle Size Distribution After Five Blast Cycles

<table>
<thead>
<tr>
<th>U.S. STANDARD MESH SIZE</th>
<th>MINIMUM PERCENT RETAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>60</td>
<td>60</td>
</tr>
</tbody>
</table>

**NOTE**

Starting material is 20/30 mesh abrasive.

END OF WORK PACKAGE
INITIAL SETUP

**Test Equipment:**
As Required

**Tools and Special Tools:**
- Trip Balance, NSN 6670-00-401-7195
- Heat Lamp
- C-Clamps
- Roller
- Earthenware Container
- Clamps

**Material/Parts:**
- Abrasive, cloth (Item 1, WP 0157 00)
- Abrasive, mat (Item 2, WP 0157 00)
- Alcohol, isopropyl (Item 42, WP 0157 00)
- Applicator, cotton-tipped (Item 44, WP 0157 00)
- Beads, glass, vacu-blast (Item 47, WP 0157 00)
- Brush, acid (Item 48, WP 0157 00)
- Brush, tooth (Item 51, WP 0157 00)
- Brush, typewriter (Item 52, WP 0157 00)
- Cheesecloth (Item 60, WP 0157 00)
- Corrosion-resistant Coating, Chemical (Item 96, WP 0157 00)
- Chromic Acid Pickle Solution (Item 62, WP 0157 00)
- Cleaner, pipe (Item 63, WP 0157 00)
- Cleaning Compound, Solvent (Item 69, WP 0157 00)
- Cloth, cleaning (Item 73, WP 0157 00)
- Cloth, cleaning and polishing (Item 74, WP 0157 00)
- Cloth, cleaning, low-lint (Item 75, WP 0157 00)
- Compound, cleaning (Item 66, WP 0157 00)
- Compound, coating (Item 82, WP 0157 00)

**Material/Parts: - continued**
- Corrosion preventive compound (Item 87, WP 0157 00)
- Corrosion preventive compound (Item 90, WP 0157 00)
- Corrosion preventive compound (Item 94, WP 0157 00)
- Compound, corrosion removing and treatment (Item 97, WP 0157 00)
- Eraser, block (Item 101, WP 0157 00)
- Eraser, typewriter (Item 102, WP 0157 00)
- Plastic coating compound (Item 131, WP 0157 00)
- Primer coating (Item 137, WP 0157 00)
- Pumice (Item 147, WP 0157 00)
- Sealing compound (Item 164, WP 0157 00)
- Sealing compound (Item 162, WP 0157 00)
- Steel wool (Item 170, WP 0157 00)
- Wheel Abrasive (Item 195, WP 0157 00)

**Personnel Required:**
As Required

**References:**
- TM 1-1500-204-23 Series
- TM 1-1500-344-23
- TM 11-1520-240-23
- TM 55-1500-323-24
- TM 55-1500-345-23
- TM 55-1520-240-23 Series
- WP 0075 00
- WP 0157 00

**Equipment Conditions:**
As Required

**Special Environmental Condition:**
As Required

SCOPE

This work package provides procedures for the removal and treatment of corrosion on the following material/areas:

1. Corrosion on Aluminum or Magnesium
2. Corrosion on Steel
3. Corrosion on Avionics Mounting Racks, Frames, Shock Mounts, and Avionics Component Covers
4. Corrosion on Internal Avionics Components
SCOPE – continued

5. Corrosion on Electrical Switches
6. Corrosion on Electrical Relay and Circuit Breakers
7. Corrosion on Electrical Connectors
8. Corrosion on Coaxial Connectors
9. Corrosion on Grounding/Bonding Connectors
10. Corrosion on Antennas
11. Corrosion on Pitot-Static Tubes

CORROSION ON ALUMINUM OR MAGNESIUM

1. Remove paint from corroded area.

   NOTE
   Make sure paint is removed from area; refer to TM 55-1500-345-23.

2. Remove corrosion as follows:

   WARNING
   EYE INJURY

   a. Remove small areas of corrosion using 320-400 grit abrasive cloth (Item 1, WP 0157 00) or abrasive mat (Item 2, WP 0157 00).
   b. Remove heavy deposits of corrosion using glass bead vacu-blast (Item 47, WP 0157 00) or abrasive wheel (Item 195, WP 0157 00).

3. Treat aluminum or magnesium surfaces as follows:
   a. Feather undamaged paint surrounding repaired area.
   b. Clean area to be treated per WP 0075 00.
   c. Check for cleanliness and water break-free condition. Refer to Figure 1.
CORROSION ON ALUMINUM OR MAGNESIUM - continued

Figure 1. Water Breaks

WARNING

4. While surface is still wet, apply chemical conversion coating material as follows:
   a. For aluminum, apply corrosion resistant coating (Item 96, WP 0157 00) to surface area.
      (1) Allow coating to remain on surface for five minutes.
      (2) Rinse area thoroughly using fresh water.

   NOTE
   Thorough rinsing is important. If conversion coating material becomes entrapped or allowed to remain on the surface, chemical reaction will continue and will result in further corrosion.

   b. For magnesium, apply chromic acid pickle solution (Item 62, WP 0157 00) to surface area.
      (1) Allow coating to remain on surface until surface color becomes greenish-brown.
      (2) Rinse thoroughly with fresh water.

   NOTE
   Thorough rinsing is important. If conversion coating material becomes entrapped or allowed to remain on the surface, chemical reaction will continue and will result in further corrosion.

5. Allow a minimum of 30 minutes for surface to dry.
CORROSION ON STEEL

1. Remove paint from corroded area.

2. Remove corrosion as follows:
   a. Remove light corrosion using steel wool (Item 170, WP 0157 00) or 320-400 grit abrasive cloth (Item 1, WP 0157 00).
   b. Remove difficult or heavy corrosion as follows:
      (1) Apply corrosion removing and treatment compound (Item 97, WP 0157 00) to corroded area using cheesecloth (Item 60, WP 0157 00).
      (2) Rub heavily corroded area with steel wool (Item 170, WP 0157 00) while compound is on the area.

   **CAUTION**
   Do not allow compound to remain on the part or area for more than 15 minutes.

   (3) Remove compound by sponging off with damp cheesecloth (Item 60, WP 0157 00) frequently rinsed in clean water.
   (4) Inspect area for complete removal of corrosion. If necessary, repeat sub-steps (1) through (4).

3. After corrosion has been completely removed, clean area per WP 0075 00.

4. Treat area by applying coating compound (Item 82, WP 0157 00) to exposed area.

5. Refer to WP 0078 00 and TM 55-1500-345-23 for protective finishes application.

CORROSION ON AVIONICS MOUNTING RACKS, FRAMES, SHOCK MOUNTS, AND AVIONICS COMPONENT COVERS

1. Remove corroded item(s) from helicopter.

2. Remove paint from corroded area per TM 55-1500-345-23.

3. Clean affected area using a solution of one part cleaning compound (Item 66, WP 0157 00) mixed with nine parts fresh water. Apply solution with cleaning cloth (Item 73, WP 0157 00).

4. Rinse area with fresh water and wipe dry.

5. Apply appropriate chemical conversion coating for aluminum, magnesium and or steel.

6. Touch up repaired area with primer (Item 137, WP 0157 00) and finish per WP 0078 00 (Finishing of Metal Parts) and TM 55-1500-345-23.
CORROSION ON INTERNAL AVIONICS COMPONENTS

**WARNING**

**ISOPROPYL ALCOHOL**

1. Remove dirt and/or corrosion using cleaning and polishing cloth (Item 74, WP 0157 00).
2. Rinse area with isopropyl alcohol (Item 42, WP 0157 00).
3. Remove corrosion and tarnish using typewriter eraser (Item 102, WP 0157 00).
4. Clean affected area with isopropyl alcohol (Item 42, WP 0157 00). Wipe area with cleaning cloth (Item 73, WP 0157 00).
5. Allow surface to air dry completely.

**WARNING**

**CORROSION PREVENTIVE COMPOUND**

6. Apply a thin film of corrosion preventive compound (Item 87, WP 0157 00) to surfaces. Remove excess compound using cleaning cloth (Item 73, WP 0157 00).

CORROSION ON ELECTRICAL SWITCHES

**WARNING**

**CLEANING COMPOUND, SOLVENT**

1. Apply cleaning solvent (Item 69, WP 0157 00) to corroded electrical switch, using acid brush (Item 48, WP 0157 00) or a toothbrush (Item 51, WP 0157 00). Scrub the switch to remove corrosion.
2. Clean any residue with cleaning solvent (Item 69, WP 0157 00).
CORROSION ON ELECTRICAL SWITCHES – continued

3. Wipe dry with cleaning cloth (Item 73, WP 0157 00).

**WARNING**

CORROSION PREVENTIVE COMPOUND

**NOTE**

Do not apply corrosion preventive compounds to electric switch contacts.

4. Apply a light film of corrosion preventive compound (Item 90, WP 0157 00) to switch assembly but not to switch contacts.

5. Wipe sliding contacts, cams, and other contact points with cotton-tipped applicator (Item 44, WP 0157 00) dampened with cleaning solvent (Item 69, WP 0157 00).

CORROSION IN ELECTRICAL RELAYS AND CIRCUIT BREAKERS

**CAUTION**

Corrosion (tarnish) acts as an insulator on contacts. While removing corrosion from contacts, care should be taken not to remove the highly conductive metal plating. If this plating is removed, the exposed base metal is vulnerable to corrosion.

**NOTE**

Do not use corrosion preventive compound on any contacts.

1. Remove light to moderate corrosion from relay contacts by rubbing contact surfaces with typewriter eraser (Item 102, WP 0157 00), or block eraser (Item 101, WP 0157 00).

**WARNING**

ISOPROPYL ALCOHOL

2. Clean residue with cotton-tipped applicator (Item 44, WP 0157 00) saturated with isopropyl alcohol (Item 42, WP 0157 00).

3. Remove corrosion from relay or circuit breaker assemblies with an acid brush (Item 48, WP 0157 00).

**NOTE**

Use pipe cleaner (Item 63, WP 0157 00) to remove corrosion from hard-to-reach areas.

4. Wipe relay or circuit breaker with cleaning cloth (Item 73, WP 0157 00). Allow to air dry.
CORROSION IN ELECTRICAL RELAYS AND CIRCUIT BREAKERS - continued

**WARNING**

5. Apply a light coat of corrosion preventive compound (Item 90, WP 0157 00) to all areas except contact and mating areas.

**WARNING**

6. Wipe contacts and mating surfaces with cotton-tipped applicator (Item 44, WP 0157 00) dampened with isopropyl alcohol (Item 42, WP 0157 00).

CORROSION ON ELECTRICAL CONNECTORS

1. Remove corrosion from connector exterior as follows:
   a. Disassemble connector split-shell by removing assembly nut and cable clamp.
   b. Remove corrosion from split-shell by scrubbing with cleaning and polishing cloth (Item 74, WP 0157 00). Make sure mating surfaces, threads, and shell interior are clean.
   c. Wipe residue with cleaning cloth (Item 73, WP 0157 00).

**NOTE**

For difficult areas, scrub shell with typewriter brush (Item 52, WP 0157 00) or tooth brush (Item 51, WP 0157 00).

d. Apply isopropyl alcohol (Item 42, WP 0157 00) to affected area.

e. Wipe clean with cleaning cloth (Item 73, WP 0157 00).
Figure 2. Cannon Plug Class B Connector
CORROSION ON ELECTRICAL CONNECTORS - continued

2. Remove corrosion from connector interior by doing the following:

**WARNING**

ISOPROPYL ALCOHOL

a. Apply Isopropyl alcohol (Item 42, WP 0157 00) to affected area. Scrub with acid brush (Item 48, WP 0157 00).

**NOTE**

On most connectors, the receptacle (female) contacts are difficult to clean. If corrosion is found, the most practical solution is pin replacement.

b. Wipe clean with cleaning cloth (Item 73, WP 0157 00).

**WARNING**

CORROSION PREVENTIVE COMPOUND

**CAUTION**

Do not substitute water displacing corrosion preventive compound, MIL-C-81309, Type II, or any other corrosion preventive compound for water displacing corrosion preventive compound, MIL-C-81309, Type III (Item 90, WP 0157 00). MIL-C-81309, Type III, is a diluted form of MIL-C-81309, Type II. Both Type II and Type III are nonconductive. MIL-C-81309, Type III, is suitable for use in applications where there is wiping or slipping action on electrical contact points. Where there is no wiping or slipping action, preservative must be removed for proper function of electrical contact points. MIL-C-81309, Type II and Type III, can be removed using isopropyl alcohol (Item 42, WP 0157 00).

**NOTE**

Use pipe cleaner (Item 63, WP 0157 00) to remove solvent from pin area.

c. Apply a light film of corrosion preventive compound (Item 90, WP 0157 00) to internal sections of connector. Avoid excessive applications of preservative.

d. Apply a light film of corrosion preventive compound (Item 90, WP 0157 00) to threads of shell halves.

e. Assemble connector.

f. Apply a light film of corrosion preventive compound (Item 90, WP 0157 00) to exterior surfaces of connector.
**CORROSION ON COAXIAL CONNECTORS**

---

**CAUTION**
When working with coaxial cable, do not step or place anything heavy on the cable. Do not bend the cable sharply. This may flatten the cable and change its electrical characteristics.

1. Carefully disassemble nut, gasket, and sleeve clamp from plug or jack body.
2. Remove corrosion from connector using cleaning and polishing cloth (Item 74, WP 0157 00).

---

**WARNING**

- ISOPROPYL ALCOHOL
- CORROSION PREVENTIVE COMPOUND

3. Clean affected area with isopropyl alcohol (Item 42, WP 0157 00).
4. Wipe area dry using cleaning cloth (Item 73, WP 0157 00).
5. Apply light coat of corrosion preventive compound (Item 90, WP 0157 00) to repaired area.
6. Reassemble connector.
Figure 4. Ground/Bonding Connector
CORROSION ON GROUNDING/BONDING CONNECTORS

NOTE
Steel screw (or bolt), washers and nuts are cadmium plated. Aluminum washers are anodic when assembled in contact with steel and will corrode readily. When corrosion is found on aluminum washers, replace with same type and size.

1. Disassemble grounding/bonding connections, which appear corroded. Note order and position of washers, terminals, and nuts.

NOTE
When cleaning corrosion from grounding/bonding connections, replace corroded aluminum washers with new washers of the same type.

2. Remove corrosion from structure surrounding grounding/bonding attachment using abrasive cloth (Item 1, WP 0157 00) or abrasive mat (Item 2, WP 0157 00).

WARNING
CLEANING COMPOUND, SOLVENT

3. Clean affected area with cleaning solvent (Item 69, WP 0157 00). Wipe dry with cleaning cloth (Item 73, WP 0157 00).

WARNING
PRIMER COATING

NOTE
If corroded area contains aluminum or magnesium, treat affected area with appropriate chemical conversion coating.

4. Apply primer coating (Item 137, WP 0157 00) to treated area.
CORROSION ON GROUNDING/BONDING CONNECTORS - continued

WARNING

ISOPROPYL ALCOHOL

5. Remove corrosion from grounding/bonding strap with low-lint cleaning cloth (Item 75, WP 0157 00) wet with isopropyl alcohol (Item 42, WP 0157 00). If necessary, scrub strap with typewriter brush (Item 52, WP 0157 00) until corrosion is removed.

6. Wipe strap clean with cleaning cloth (Item 73, WP 0157 00).

WARNING

CORROSION PREVENTIVE COMPOUND

SEALING COMPOUND

NOTE

For grounding/bonding connections that require frequent disassembly, apply a light coat of corrosion preventive compound (Item 90, WP 0157 00) followed by a coat of corrosion preventive compound (Item 94, WP 0157 00) to connection area. For grounding/bonding connections that seldom require disassembly, apply sealing compound (Item 164 or Item 162, WP 0157 00).

7. Apply corrosion preventive compound (Item 87, WP 0157 00) to grounding/bonding strap.

CORROSION ON ANTENNAS

1. Remove antenna per TM 11-1520-240-23.

WARNING

CLEANING COMPOUND, SOLVENT

2. Clean any grease, oil, or dirt from antenna and mounting area using cleaning cloth (Item 73, WP 0157 00) and cleaning solvent (Item 69, WP 0157 00).

3. Remove corrosion from antenna, antenna mount, and mounting surface using abrasive mat (Item 2, WP 0157 00).

4. Clean antenna, antenna mount, and antenna to-helicopter contact area using cleaning cloth (Item 73, WP 0157 00) dampened with solution of nine parts water to one part cleaning compound (Item 66, WP 0157 00).
CORROSION ON ANTENNAS -continued

5. Rinse area using cleaning cloth (Item 73, WP 0157 00) wet with fresh water.

6. Spray affected areas of antenna components with isopropyl alcohol (Item 42, WP 0157 00). Wipe off residue with cleaning cloth (Item 73, WP 0157 00). Allow to air dry.

7. Treat aluminum surfaces per WP 0078 00 and TM 55-1500-345-23.

8. Install antenna per TM 11-1520-240-23.

CORROSION ON PITOT-STATIC TUBES

1. If painted, mask and strip per WP 0076 00. Mask pitot-static head and fittings on mount area, leaving copper-beryllium riser bare. No leakage allowed.


3. Rinse in high-pressure water. Repeat step 2 if plating is still present.

4. Immerse tube in water and using abrasive mat (Item 2, WP 0157 00) and pumice (Item 147, WP 0157 00), clean by hand.

5. Blow-dry using high-pressure air.


END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FINISHING METAL PARTS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Abrasive, Paper, (Item 5, WP 0157 00)
Cleaning Compound, Solvent (Item 69, WP 0157 00)
Cloth, Cleaning (Item 73, WP 0157 00)
Lacquer, Acid-resistant (Item 116, WP 0157 00)
Lacquer, Clear (Item 117, WP 0157 00)
Lacquer, Lusterless Black (Item 118, WP 0157 00)
Naphtha, Aromatic (Item 123, WP 0157 00)
Paper, Wrapping (Item 129, WP 0157 00)
Primer, Epoxy (Item 140, WP 0157 00)
Primer, Wash (Item 145, WP 0157 00)
Tape, Masking (Item 175, WP 0157 00)
Tape, Pressure Sensitive (Item 179, WP 0157 00)
Toluene, Technical (Item 189, WP 0157 00)
Walkway Material, Type I (smooth) black, color No. 37038 (Item 191, WP 0157 00)

Material/Parts: - continued
Walkway Material, Type I (smooth) gray, color No.36231 (Item 192, WP 0157 00)
Walkway Material, Type II (rough) black, color No.37038 (Item 193, WP 0157 00)
Walkway Material, Type II (rough) gray, color No.36231 (Item 194, WP 0157 00)
Xylene (Item 197, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 1-1500-344-23
TM 55-1500-345-23
TM 55-1520-240-23 Series
WP 0149 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

INTERIOR STRUCTURES, DETAIL, OR REPAIR PARTS - NONFAYING SURFACES AND SIMILAR METAL CONTACT

Prior to the installation of interior repair or replacement parts, which will not be contacting surfaces of a dissimilar metal, a primer finish, as described in subsequent steps should be applied.

WARNING

EPOXY PRIMER

1. Apply one coat of epoxy primer (Item 140, WP 0157 00) to aluminum alloy parts and two additional coats in the following areas:
   a. Entire cockpit fuselage section under cockpit floor, from forward canted bulkhead to sta 160 including bottom of floor.
   b. Entire cabin fuselage section under floor, from sta 160 to sta 440 excluding bottom of floor.
c. Entire aft fuselage section under floor, from sta 440 to sta 482 excluding bottom of floor, and all internal areas from WL 0 downward, between sta 502 and sta 554, except where a final finish is required.

d. Entire cargo loading ramp under floor, except bottom of floor.

e. Entire pod installation, from WL 0 downward, including wheel wells, except areas to be finished same as external areas.

**WARNING**

**EPOXY PRIMER**

**NOTE**

Refer to WP 0149 00 for Stripping and Reapplication of Coatings in the CH-47 Bilge Area, sta 95 to sta 495.

2. Apply three coats of epoxy primer (Item 140, WP 0157 00) to magnesium alloy parts, except as noted in step (3) unless a final finish coating is to be applied. In this case, only two coats are required. Apply one coat of wash primer (Item 145, WP 0157 00) to magnesium alloy forging prior to application of epoxy primer.

3. Apply one coat of wash primer (Item 145, WP 0157 00) and a heavy coat of epoxy primer (Item 140, WP 0157 00) to extruded ZK60 magnesium alloy parts.

4. Apply one coat of wash primer (Item 145, WP 0157 00) and one coat of epoxy primer (Item 140, WP 0157 00) to cadmium-plate and un-plated carbon and low-alloy steel parts.
INTERIOR STRUCTURES, DETAIL, AND REPAIR PARTS - FAYING SURFACES DISSIMILAR METALS

Prior to assembly of repair or replacement parts, make sure that all existing corrosion has been removed in area and that parts are properly insulated one from the other.

1. Where corrosion exists, remove the corrosive products and finishes at external lap joints.

   WARNING

   EPOXY PRIMER

2. Where magnesium alloys are involved, apply a minimum of two coats of epoxy primer (Item 140, WP 0157 00) on each faying surface. In addition insert pressure sensitive tape (Item179, WP 157 00) between faying surfaces. Pressure sensitive tape must extend beyond the edge of faying surfaces at least 1/4 inch. If trimmed close, the tape will not insulate properly. Where use of tape is impractical, assemble parts wet with epoxy primer (Item 140, WP 0157 00) and provide an adequate primer fillet at joined boundaries.

3. Where steel alloys are involved, apply two coats of epoxy primer (Item 140, WP 0157 00) to each surface.

4. Apply an additional coat of epoxy primer (Item 140, WP 0157 00) on exterior edges of faying surfaces where magnesium and steel alloy parts are assembled.

5. Install all rivets, bolts, nuts, and washers wet with epoxy primer (Item 140, WP 0157 00).

6. Apply an additional coat of epoxy primer (Item 140, WP 0157 00) to heads of aluminum alloy rivets driven through corrosion-resistant steel.

FINAL FINISH - INTERIOR METAL STRUCTURES

After priming, repair or replacement parts should have a final finish applied to match adjacent structures. The final finish may be applied before or after assembly of the detail part.

   WARNING

   LACQUER

1. Finish all parts of cockpit fuselage section, which will reflect in windshields, including switch panels, with one coat of lacquer (Item 118, WP 0157 00).

2. Finish all other parts that will be exposed after assembly such as floors, walls, seats, console, pedestal, foot pedals, and instrument panels and apply internal markings. Refer to TM 55-1500-345-23.

FINAL FINISH - EXTERIOR METAL STRUCTURES

All exteriors finish and markings shall be applied IAW TM 55-1500-345-23.
FINISHING OF IMPREGNATED GLASS PARTS

Subsequent information is provided for the refinishing of all impregnated glass cloth parts, except the rotary-wing blades, which are to be refinished IAW TM 55-1520-240-23.

1. Wash part three times using cleaning cloth (Item 73, WP 0157 00) soaked with naphtha, aromatic (Item 123, WP 0157 00).
2. Rub part lightly with abrasive paper (Item 5, WP 0157 00).
3. Repeat step (1).

4. Apply one coat of epoxy primer (Item 140, WP 0157 00).

5. Apply two coats of lacquer. The color must match adjacent structures.

ACID PROOFING

Surfaces subject to acid spillage or spray within 12 inches of lead acid storage batteries (if used) and those surfaces within 24 inches of relief tubes should be given one coat of epoxy primer (Item 140, WP 0157 00) and a finish coat of acid-resistant lacquer (Item 116, WP 0157 00). The color of the lacquer (black or white), should afford maximum contrast with adjacent areas.
DECAL OVERCOATING

Subsequent information is provided for the over-coating of decals used aft of sta 440, interior and exterior, to prevent deterioration.

1. Remove all oil or other contamination from decal and clean area approximately 6-inches wide, around decal, using cleaning cloth (Item 73, WP 0157 00) soaked with naphtha, aromatic (Item 123, WP 0157 00).

2. If decal cannot be cleaned satisfactorily replace it or use stenciled lacquer markings. Stenciled lacquer markings must be used when rework is required for "STEP" legends.

3. Apply a 0.001-inch dry film thickness of lacquer (Item 117, WP 0157 00) to decal. Spraying a minimum of four passes should achieve this thickness.

WALKWAYS

Subsequent steps contain information on the application of Type 1 (Smooth) and Type II (Rough) walkway materials (Items 191, 192, 193, and 194, WP 0157 00). Where reference is made throughout the manual to these steps, the type material, color, and the number of coats, as specified in the referencing paragraphs should be used.

1. Remove all wax, grease, oil, dirt, and other foreign material from areas to be coated.

2. Clean metal surfaces with a cleaning cloth (Item 73, WP 0157 00), soaked in cleaning solvent (Item 69, WP 0157 00).

3. Mask adjacent areas using masking tape (Item 175, WP 0157 00), and wrapping paper (Item 129, WP 0157 00).
WALKWAYS - continued

4. Spray two coats of epoxy primer (Item 140, WP 0157 00). Allow each coat to dry.

5. Prepare desired type and color of walkway material in accordance with manufacturer's directions on container.

6. Apply an initial, thin, uniform coat of walkway material to primed surfaces. Allow it to dry thoroughly.

NOTE

Walkway materials should be applied un-thinned. However, the material may be thinned with either toluene (Item 189, WP 0157 00) or xylene (Item 197, WP 0157 00) for brushing or spraying purposes.

Type I (Smooth) walkway material (Items 191 or 192, WP 0157 00) may be applied with a brush or spray. Type II (Rough) walkway materials (Items 193 or 194, WP 0157 00) should be applied with a brush.

7. Apply successive coats in liberal quantities. Brush or spray on quickly. Cover a relatively small area at a time.

8. Allow each coat to dry thoroughly with a minimum of 30 minutes between coats. Avoid brushing or spraying over same-coated area immediately after it has been applied.

9. Apply approximately four to five brush coats or a maximum of 10 spray coats after initial coat, unless otherwise noted.

10. Allow coated surface to air-dry a minimum of 1 hour before handling. Allow a minimum of 24 hours drying time before subjecting coated surface to light traffic. Maximum hardness is attained after approximately 7 days of air-drying.

11. Sand edges of coated surface to feather in with adjacent areas.
AIRFRAME PAINT REQUIREMENTS

Table 1 lists paint specifications for the different areas of the helicopter. Refer to TM 55-1500-345-23 for specifics.

<table>
<thead>
<tr>
<th>AREA OR DETAILS</th>
<th>PAINT COLOR, TYPE AND SPECIFICATION</th>
<th>NUMBER OF COATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior and exterior overall and all details</td>
<td>Epoxy Primer, TYPE I MIL-P-23377</td>
<td>One</td>
</tr>
<tr>
<td>Interior airframe of tub (sta 52 to sta 485)</td>
<td>Corrosion Preventive Compound, MIL –C-85054, Or Clean Polyurethane, MIL-C-83286</td>
<td>One</td>
</tr>
<tr>
<td>Exterior top coat-overall</td>
<td>Aircraft Green Aliphatic Polyurethane, NO 34031, MIL-C-46168</td>
<td>Two</td>
</tr>
<tr>
<td>Cabin floor undercoat</td>
<td>Epoxy Primer, TYPE 1, MIL-L-23377</td>
<td>One</td>
</tr>
<tr>
<td>Cabin interior top coat</td>
<td>Gray, Aliphatic Polyurethane, MIL-C-46168</td>
<td>Two</td>
</tr>
<tr>
<td>Cockpit interior top coat</td>
<td>Black, Aliphatic Polyurethane, No. 37038, MIL-C-46168</td>
<td>Two</td>
</tr>
<tr>
<td>Cabin emergency handle and letter markings</td>
<td>Orange Yellow Aliphatic Polyurethane, No. 33538, MIL-C-46168</td>
<td>One</td>
</tr>
<tr>
<td>Cabin emergency handle and letter markings emergency exit markings</td>
<td>Orange Yellow Aliphatic Polyurethane, No. 33538, MIL-C-46168</td>
<td>One</td>
</tr>
<tr>
<td>Cockpit glare shield stencil</td>
<td>White Epoxy Paint, No. 37875, MIL-C-22750</td>
<td>One</td>
</tr>
<tr>
<td>Stencils, step markings</td>
<td>Lusterless Black Aliphatic Polyurethane, No. 37038, MIL-C-46168</td>
<td>Two</td>
</tr>
<tr>
<td>Engine exhaust area</td>
<td>Lusterless Black Aliphatic Polyurethane, No. 37038, MIL-C-46168</td>
<td>Two</td>
</tr>
<tr>
<td>Battery area</td>
<td>Protective Neoprene Coating, No. N700-9, MIL-C-7439</td>
<td>Three</td>
</tr>
<tr>
<td>Walkways, steps, platforms, gunners window sill</td>
<td>Black, Non-Skid Coating, No. 37038, MIL-D-23003, Type II</td>
<td>Two</td>
</tr>
<tr>
<td>Cabin floor strips</td>
<td>Dark Gull Gray, Non-Skid Coating, No. 36231</td>
<td>One</td>
</tr>
<tr>
<td>Internal mechanical parts, control systems, linkages and supports, bellcranks levers, servos, etc</td>
<td>Lusterless Gray, MIL-C-46168, NO. 36321</td>
<td>Two</td>
</tr>
<tr>
<td>Pilot and copilot seat and frame assembly</td>
<td>Epoxy Polyamide Primer, MIL-P-23377, Type II</td>
<td>One mist coat</td>
</tr>
<tr>
<td></td>
<td>Lusterless Black Aliphatic Polyurethane Coating MIL-C-46168, Type II, FED STD 595B, Color No. 37038</td>
<td>One mist coat</td>
</tr>
</tbody>
</table>

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
APPLICATION OF TAPES

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
- Acetone, Technical (Item 20, WP 0157 00)
- Activator (Item 21, WP 0157 00)
- Adhesive (Item 23, WP 0157 00)
- Cleaning Compound, Solvent (Item 69, WP 0157 00)
- Cloth, Cleaning (Item 73, WP 0157 00)
- Naphtha, Aliphatic (Item 122, WP 0157 00)
- Tape, Masking (Item 175, WP 0157 00)
- Tape, Anti-chafing Tape (Item 180, WP 0157 00)
- Tape, Velcro (Item 181, WP 0157 00)
- Thread, Nylon (Item 185, WP 0157)

Personnel Required:
As Required

References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package provides removal and installation procedures for anti-chaffing tape and velcro tape.

APPLICATION OF ANTI-CHAFING TAPE

Anti-chafing tape (Item 180, WP 0157 00) is used if a smooth, nonabrasive surface is desired over rivet heads and seams.

**CAUTION**

Exposure of anti-chafing tape (Item 180, WP 0157 00) to sunlight for 4 hours will destroy its adhesive qualities. Storage of unused tape should be in a cool dark area.

1. Remove all burrs, rough and sharp edges, and loose primer in area to be taped.

**WARNING**

**EYE INJURY**

1. Remove all burrs, rough and sharp edges, and loose primer in area to be taped.

2. Using an air blast, brush or dry cloth, remove loose metal clips, dust, and primer scale.
APPLICATION OF ANTI-CHAFING TAPE – continued

WARNING

CLEANING COMPOUND, SOLVENT
NAPHTHA, ALIPHATIC

NOTE

Cleaning solvent (Item 69, WP 0157 00) may be substituted for naphtha, aliphatic (Item 122, WP 0157 00). The solvent must be wiped dry and not allowed to evaporate on surfaces.

3. Using a cleaning cloth (Item 73, WP 0157 00) moistened with naphtha, aliphatic (Item 122, WP 0157 00), wipe all surfaces to be taped.

4. Repeat step 3 at least two times or until the surfaces are clean.

NOTE

Lengths of tape should be cut to allow protective paper line to extend beyond cut edge. This will make it easier to remove tape. Continuous lengths of tape should be used whenever possible.

5. Cut a length of tape as follows:
   a. If protrusions are less than 1/4-inch high, the tape should be cut to extend 1 to 2 inches each side of the protrusion.
   b. If protrusions are higher than 1/4-inch, the tape should be cut to extend 1½ to 2 inches each side of the protrusion.

6. Remove liner from tape.

CAUTION

The activator (Item 21, WP 0157 00) may have a harmful effect on some materials. Therefore, precautionary measures should be taken to prevent activator or items dampened with activator from contacting other materials.

7. Pour a sufficient amount of activator (Item 21, WP 0157 00) into a pan.

8. Use a wooden applicator to apply activator with a wiping motion. Apply activator to adhesive side of tape.

NOTE

All edges must be firmly bonded to surface. Small blisters and voids must be kept to a minimum. Voids around rivet and screw heads are permissible.

9. Apply activated tape to cleaned surfaces by starting tape at one end and pressing it down firmly. Smooth tape down with a wooden scraper and work tape from center to edge with sufficient pressure to eliminate air pockets and wrinkles and to ensure good adhesion.
REMOVAL OF ANTI-CHAFING TAPE

Rejected or improperly applied tape should be removed as follows:

**WARNING**

1. Saturate tape with acetone, technical (Item 20, WP 0157 00) Allow a few minutes for tape to soak. Then, carefully peel tape from surface.

2. Apply new tape.

APPLICATION OF VELCRO TAPE

**NOTE**

Tape must be applied to fabrics by stitching with nylon thread (Item 185, WP 0157 00) IAW ASTM-D-6193.

This procedure is used for the application of pre-coated adhesive-backed or un-coated Velcro hook and pile tape. This fastener is used for attachment and repair of sound proofing blankets and coverings.

**WARNING**

1. Clean surface to where tape is to be applied. Use cleaning cloth (Item 73, WP 0157 00) soaked with cleaning compound, solvent (Item 69, WP 0157 00). Wipe surface with dry cloth before solvent evaporates.

2. Apply masking tape (Item 175, WP 0157 00) around surface to be covered.

**WARNING**

**NOTE**

For best results surface should be bare of prime-coat.

For adhesive shell life and storage procedures, refer to the manufacturers recommendations.

3. Brush a coat of adhesive (Item 23, WP 0157 00) to masked surfaces and Velcro tape (Item 181, WP 0157 00).

4. Press tape in place within five minutes of adhesive application, but not sooner than one minute.
APPLICATION OF VELCRO TAPE - continued

5. If tape is too long, insert a piece of wood between tape and coated surface. Trim tape with a sharp knife.

NOTE
Small voids around rivet and screw heads are permissible.

6. Check for acceptable bonding by gently pulling edges of tape with fingernail.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FUSELAGE SEALING

INITIAL SETUP

Test Equipment:  
As Required

Tools and Special Tools:  
Trip Balance, NSN 6670-00-401-7195  
3M Spray Gun (T170)

Material/Parts:  
Abrasive Acetone, Technical (Item 20, WP 0157 00)  
Brush (Item 50, WP 0157 00)  
Cleaning Compound (Item 64, WP 0157 00)  
Cleaning Compound, Windshield (Item 65, WP 0157 00)  
Cleaning Compound, Solvent (Item 69, WP 0157 00)  
Cloth, Cleaning (Item 73, WP 0157 00)  
Cloth, Flannel (Item 77, WP 0157 00)  
Epoxy Topcoat (Item 100, WP 0157 00)  
Gloves (Item 108, WP 0157 00)  
Corrosion Resistant, Alodine (Item 95, WP 0157 00)  
Naphtha, Aliphatic (Item 122, WP 0157 00)  
Epoxy Primer ((Item 140, WP 0157 00)  
Sealant, Pro Seal 700 (Item 157, WP 0157 00)  
Sealant (Item 160, WP 0157 00)

Personnel Required:  
As Required

References:  
TM 1-1500-204-23 Series  
TM 55-1520-240-23 Series  
WP 0157 00

Equipment Conditions:  
As Required

Special Environmental Condition:  
As Required

SCOPE

This work package provides procedures for fuselage sealing, preparation, and acceptable sealants.

SEALING PROCESS

1. Seal all fuselage external joints, seams, holes, skin laps, and fasteners. Refer to Fuselage Sealing, Figure 1 thru Figure 12 and Acceptable Sealants, Table 1.

2. Perform all operations, such as fitting, drilling, countersinking, deburring, or other rework before sealing. Mating surfaces are especially important. Cleaned area shall be larger than area to be sealed.

3. Prepare surface as follows:
   a. Clean acrylic plastic surfaces such as windshields and panes. Use flannel cloth (Item 77, WP 0157 00) and cleaning compound, windshield (Item 65, WP 0157 00) or cleaning compound (Item 64, WP 0157 00).
SEALING PROCESS - continued

**WARNING**

ACETONE, TECHNICAL

b. Clean plastic-impregnated glass cloth parts. Use cleaning cloth (Item 73, WP 0157 00) soaked with acetone, technical (Item 20, WP 0157 00). Dry parts using cleaning cloth (Item 73, WP 0157 00). Wear gloves (Item 108, WP 0157 00).

**WARNING**

CLEANING COMPOUND, SOLVENT

c. Clean all metal surfaces to be sealed, with cleaning cloth (Item 73, WP 0157 00) soaked with cleaning compound, solvent (Item 69, WP 0157 00).

d. Dry area before solvent evaporates. Use cleaning cloth (Item 73, WP 0157 00).

**NOTE**

Three solvent applications should be enough.

e. Repeat steps c and d until cleaning cloth stays clean.

**WARNING**

ALIPHATIC NAPHTHA

f. Clean metal surfaces with aliphatic naphtha (Item 122, WP 0157 00) when using sealant.

g. Scuff-sand zinc chromate primed areas with abrasive paper (Item 12 or finer, WP 0157 00).

**WARNING**

ALODINE

h. Apply a coat of alodine (Item 95, WP 0157 00) to prepared area. Use brush (Item 50, WP 0157 00).
SEALING PROCESS - continued

Table 1. Acceptable Sealants

<table>
<thead>
<tr>
<th>SEALING COMPOUND</th>
<th>WORKING LIFE (HOURS)</th>
<th>CURE TIME (HOURS) (NOTE 1)</th>
<th>USE METHOD OF APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRO9021A (Item 161)</td>
<td>1</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>PRO9021A-2 (Item 161)</td>
<td>2</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>PROSEAL719A-2 (Item 158)</td>
<td>2</td>
<td>44</td>
<td>Note 3</td>
</tr>
<tr>
<td>PRO9021A-4 (Item 161)</td>
<td>4</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Sealing Compound, Type II, CI B (Item 160)</td>
<td>0.5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>PROSEAL 896 (Item 159)</td>
<td>2</td>
<td>48</td>
<td>Note 5</td>
</tr>
<tr>
<td>PROSEAL 700 (Item 157)</td>
<td>24</td>
<td>168</td>
<td>Note 6</td>
</tr>
<tr>
<td>Sealant (Item 160)</td>
<td>0</td>
<td>1 for Spray</td>
<td>Note 7</td>
</tr>
<tr>
<td>Sealant (Item 160)</td>
<td>0</td>
<td>2 for Brush</td>
<td>Note 7</td>
</tr>
<tr>
<td>Epoxy Primer (Item 140)</td>
<td>0</td>
<td>1 to 2</td>
<td>Note 7</td>
</tr>
<tr>
<td>Epoxy Topcoat (Item 100)</td>
<td>0</td>
<td>1</td>
<td>Note 7</td>
</tr>
</tbody>
</table>

NOTES
1. Cure temperature is 77 degree F (25 degree C) unless otherwise noted.
2. Mix sealed compound in accordance with instructions on container.
3. Apply with brush for fastener sealing.
4. Apply with pressure gun or wood spatula for fillets and mating surfaces.
5. Apply with pressure gun or wood spatula for hole filling.
6. Apply with pressure gun or wood spatula for firewall sealing only.
7. Apply with pressure gun or brush for coating/sealing.

PREPARATION OF TWO-PART SEALANT

Prepare two-part sealant as follows:

**WARNING**

Avoid whipping, which entraps air. Avoid overheating when using mixing machine. Overheating shortens storage and working life.

1. Weigh components of sealant listed in Acceptable Sealants, Table 1.

**NOTE**

2. Mix components completely until color is uniform and free of streaks.

STORAGE OF PREPARED SEALANT

Store prepared sealant as follows:
STORAGE OF PREPARED SEALANT - continued

1. Refrigerate mixed sealing compounds, which cannot be used within the working life specified in Table 1. Refrigerate for 2 weeks maximum at 40 degree F (4 degree C).

   NOTE
   Thawing will usually take 20 to 30 minutes. For quicker thawing, place sealant in water at 120 degree F (49 degree C) for 10 minutes.

2. Allow sealants to warm to minimum of 60 degree F (16 degree C) before using. Working life of thawed sealants is same as freshly mixed sealants.

APPLICATION OF SEALANT

[WARNING]
EPOXY PRIMER
SEALING COMPOUND

Apply epoxy primer (Item 140, WP 0157 00) and sealant (Item 160, WP 0157 00) as follows:

1. Apply coat of epoxy primer (Item 140, WP 0157 00) and allow drying.

   [WARNING]
   EPOXY PRIMER

2. Apply a light coat of epoxy primer (Item 140, WP 0157 00). Allow epoxy to dry.

3. Apply two coats of epoxy topcoat (Item 100, WP 0157 00). Allow epoxy topcoat to dry between coats.

   [WARNING]
   SEALING COMPOUND

   NOTE
   Do not use sealant (Item 160, WP 0157 00) if lumps, gel, grit or foreign materials are present, or if shrinking occurs.

4. Stir sealant (Item 160, WP 0157 00).

5. Apply sealant (Item 160, WP 0157 00) to areas described in the following figures.
NOTES

A. Mating surface sealant between skin lap.
B. Mating surface sealant between skin and part.
C. Fillet seal along edge.
D. Fillet seal around windshield wiper post.
E. See the following Figures for A thru F detail views.

Figure 1. Fuselage Sealing
NOTES

1. Apply fillet seal along inside and outside edges of skins. If original skin joint sealant is Fabseal Tape, then:
   a. Skins sealed with faying surface sealant require no additional sealing.
   b. Fillet sealing not required inside fuselage if sealant, (Item 160, WP 0157 00), is used.

2. Seal all edges of fingerplates with fillet seal and fill space under stringer or former joggles with injection seal. Fillet sealing not required inside fuselage if sealant, (Item 160, WP 0157 00), is used.

3. Inspect all structural members for open holes. Fill each hole with hole filling seal. Fillet sealing not required inside fuselage if sealant, (Item 160, WP 0157 00), is used.
NOTES

1. Apply fillet seal along inside and outside edges of skins. If original skin joint sealant is Fabseal Tape, then:
   a. Skins sealed with faying surface sealant require no additional sealing.
   b. Fillet sealing not required inside fuselage if sealant, (Item 160, WP 0157 00), is used.

2. Seal all edges of fingerplates with fillet seal and fill space under stringer or former joggles with injection seal. Fillet sealing not required inside fuselage if sealant, (Item 160, WP 0157 00), is used.

Figure 3. Fuselage Sealing
NOTES
1. Mating surface sealant between skin and part.
2. Fillet seal along edge.
3. Mating surface sealant on frame and parting agent on window.
4. Fillet seal around fastener head.
5. Mating surface and fillet between housing and inner skin.

Figure 4. Fuselage Sealing
NOTES
1. Mating surface sealant between skin lap.
2. Mating surface sealant between skin and part.
3. Hole filling compound.
4. Surface sealant between tee and angle.

Figure 5. Fuselage Sealing
NOTES

1. Fillet seal along edge.
2. Cover fastener heads with sealing compound.
3. Fillet seal around edge of skin cutout and tube. Use sealant, (Item 157, WP 0157 00).
4. Fillet seal over grommet and around tube. Use sealant, (Item 160, WP 0157 00).

Figure 6. Fuselage Sealing
NOTES

1. Fillet seal along edge.
2. Mylar tape on floor panel, angle, and or splice plate with parting agent and mating surface sealant between mylar tapes.
3. Mating surface sealant on beam.
4. Apply mylar tape and mating surface sealant as shown.

Figure 7. Fuselage Sealing
NOTES
1. Mating surface sealant between skin lap.
2. Mating surface sealant between skin and part.
3. Mating surface sealant and parting agent between formers.
4. Prepack sealant in joggle.
5. Mating surface sealant between beam and angle with parting agent on beam.

Figure 8. Fuselage Sealing
NOTES

1. Mating surface sealant between skin lap.
2. Mating surface sealant between skin and part.
3. Fillet seal along edge.
4. Cover fastener heads with sealing compound.

Figure 9. Fuselage Sealing
NOTES
1. Surface sealant between skin and part.
2. Surface sealant between skin lap.
3. Surface sealant between hinge and retainer.
4. Cover hinge fasteners with sealing compound.
5. Surface sealant between adapter and tee cap.
6. Surface sealant between channel and retainer.

Figure 10. Fuselage Sealing
NOTES

1. Mating surface sealant between skin and part.
2. Fillet seal along edge.
3. Fillet seal around fastener head.
4. Cover fastener heads with sealing compound.
5. Apply sealant to fastener before installation.
6. Mating surface sealant on standoff attaching surface.
7. Apply parting agent to exposed surfaces of bolt, nut, and washer. 
    Apply sealant over parting agent

Figure 11. Fuselage Sealing
APPLICATION OF SEALANT – continued

NOTES

1. Fillet seal along edge.
2. Cover fastener heads with sealing compound.
3. Mating surface sealant and parting agent between door and structure.
4. Apply fillet seal from sta 482 to sta 630 after joining crown panel and pylon.
5. Mating surface sealant between skin and part.
6. Mating surface sealant between skin lap.
7. Mating surface sealant and parting agent between formers.
8. Mating surface sealant between beam and plate.
9. Mylar tape and mating surface sealant between beam and hinge.
10. Mylar tape between beam and former (typical).
11. Mylar tape on floor panel, angle, and/or splice plate with parting agent and surface sealant between mylar tapes.

Figure 12. Fuselage Sealing

END OF WORK PACKAGE

0080 00-16
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
REPAIR OF IMPREGNATED GLASS CLOTH

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Trip Balance, NSN 6670-00-401-7195
3M Spray Gun (T170)
Heat Lamp

Material/Parts:
Abrasive, Paper, (Item 12 or finer, WP 0157 00)
Acetone, Technical (Item 20, WP 0157 00)
Cellophane Sheet (Item 55, WP 0157 00)
Cloth, Glass (Item 79, WP 0157 00)
Resin, Paraplex, MIL-R-7575 (Item 151, WP 0157 00)
Resin, MIL-R-9300 (Item 151.1, WP 0157 00)
Tape, Masking (Item 175, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

CLASSIFICATION OF DAMAGE

Small-crack damage is damage caused by flexing. This results in a tear less than 2 inches long, in which edges of tear remain closed, and tear does not extend through all laminations.

Large-crack damage is similar to small crack damage, except that two or more small cracks are close to each other. The cracks are longer than 2 inches, or they extend completely through all laminations.

Perforation damage is damage caused by a penetration of all laminations, causing ragged or jetting edges on either side.

Lack-of-material damage is damage caused by a partial loss of material on any surface or part.

Loss-of-material damage is damage caused by a partial or complete loss of all laminations, either on an edge or surface of part.

Miscellaneous damage is damage caused by a separation of laminations such as bubbles, blisters, and failure of bonding agents.

DAMAGE REPAIR

1. For Small-Crack Damage, Partial Loss-of-Material Damage, and Miscellaneous Damage, refer to Figure 1. Repair damage as follows:
   b. Sand through crack to an uncracked lamination. Use 320-grit abrasive paper (Item 12, WP 0157 00).
DAMAGE REPAIR - continued

**c.** Roughen by sanding areas, which will be covered by patches. Use 320-grit abrasive paper (Item 12, WP 0157 00).

![WARNING]

**d.** Clean area with acetone (Item 20, WP 0157 00) to remove sanding residue.

**e.** Cut a patch from glass cloth (Item 79, WP 0157 00) large enough to extend at least, 0.5 inch beyond sanded area.

**f.** Cut a number of patches from glass cloth (Item 79, WP 0157 00) or recommended material from the specific technical manual large enough to extend at least 0.5 inch beyond previous patch, and equal to number of laminations sanded away. If the base material is unknown, use the instructions from the applicable aircraft maintenance manual.

**g.** Use bonding agent appropriate for material(s) and mix IAW manufactures instructions.
   1. For Class 1-Polyester Laminates, use Resin MIL-R-7575 (Item 151, WP 0157 00).
   2. For Class 2-Epoxy Laminates, use Resin MIL-R-9300 (Item 151.1, WP 0157 00).

**h.** Impregnate each prepared patch by brushing bonding agent into patch.

**i.** Repair damages as follows:
   1. Place smallest patch over area where laminates were removed.
   2. Place successively larger patches.
   3. Place a piece of cellophane sheet (Item 55, WP 0157 00) over patch, and press patch in place with continual smoothing to remove air pockets.

**NOTE**

If patch will not remain in place, apply masking tape (Item 175, WP 0157 00) across cellophane during cure.

4. Remove cellophane and masking tape if patch will remain in place. Brush a coat of bonding agent over patch.

**CAUTION**

**Do Not Exceed 175 Deg F.**

**NOTE**

If cellophane is not removed, additional coats of bonding agent are not required.

5. Cure repair with heat lamp until it is hard and tack-free.

2. For Large-Crack Damage, Perforation Damage, Complete Loss-of-Material Damage, and Miscellaneous Damage, refer to Figure 2. Repair damage as follows:

**a.** Cut laminations away to form a hole having a 15 to 30 degree edge taper.
DAMAGE REPAIR - continued

b. Roughen by sanding areas that will be covered by patches. Use 320-grit abrasive paper (Item 12, WP 0157 00).

**WARNING**

Acetone

C. Clean area with acetone (Item 20, WP 0157 00) to remove sanding residue.

d. Cut a number of patches from glass cloth (Item 79, WP 0157 00), or recommended material from the specific technical manual, large enough to extend at least 0.5 inch beyond previous patch, and equal to number of laminations sanded away. If the base material is unknown, refer to applicable aircraft maintenance manual.

e. Cut a number of doublers from glass cloth (Item 79, WP 0157 00) equal to number of laminations in damaged area. Cut first doubler 1-inch larger in diameter than patches. Cut succeeding doublers to overlap first doubler by 0.5 inch.

f. Using masking tape (Item 175, WP 0157 00), attach a suitable support covered with cellophane sheet (Item 55, WP 0157 00) behind hole.

g. Mix sufficient bonding agent to complete repair.

h. Impregnate each patch and each doubler by brushing bonding agent into patch and doubler.

i. Repair damage as follows:

   (1) Place impregnated patches in hole and against support.

   (2) Place impregnated doublers over patches starting with smallest doubler. Center doublers over each other and over patches.

   (3) Place a piece of cellophane (Item 55, WP 0157 00) over doublers and patch, and press it in place while continually smoothing it to remove air pockets.

**NOTE**

If the doublers or patches will not remain in place, apply masking tape (Item 175, WP 0157 00) across cellophane during cure.

(4) Remove cellophane and masking tape if doubler and patches remain in place, and brush a coat of bonding agent over the doublers.

**CAUTION**

Do Not Exceed 175 Deg F.

**NOTE**

If cellophane is not removed, additional coats of bonding are not required.

(5) Cure repair with heat lamps until it is hard and tack-free.
NOTE
All dimensions are in inches.

Figure 1. Repair of Small-Crack Damage, Partial Loss-of-Material Damage, and Miscellaneous Damage
NOTE
All dimensions are in inches.

Figure 2. Repair of Large-Crack Damage, Perforation Damage, Complete Loss-of-Material Damage, and Miscellaneous Damage

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
- Adhesive, (Item 25, WP 0157 00)
- Abrasive, Paper, (Item 12 or finer, WP 0157 00)
- Bake Coating (Item 45, WP 0157 00)
- Cloth, Cleaning (Item 73, WP 0157 00)
- Naphtha, Aliphatic (Item 122, WP 0157 00)
- Polycarbonate Sheet (Item 134, WP 0157 00)
- Thinner (Item 183, WP 0157 00)

Personnel Required:
As Required

References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair of parts made from polycarbonate sheets.

REPAIR

WARNING

NAPHTHA

1. Clean surfaces using cleaning cloth (Item 73, WP 0157 00) soaked with aliphatic naphtha (Item 122, WP 0157 00).

2. Lightly sand surfaces using 320-grit abrasive paper (Item 12, WP 0157 00).

3. Repeat step 1.

4. Prepare a patch and/or insert of polycarbonate sheet (Item 134, WP 0157 00) as follows:
   a. Patch and/or insert should be the same thickness as original material.
   b. Cut patch to extend a minimum of 0.5-inch from edge of hole.
   c. Form patch, if required, by heating it in an oven for 3 to 5 minutes at a temperature of 350 degrees F (177 degrees C).
   d. Clean patch. (Refer to steps 1, 2, and 3).
5. Prepare and apply adhesive (Item 25, WP 0157 00) to faying surfaces of part and patch. Refer to WP 0074 00.

6. Position patch on part and apply light pressure for cure time of 48 hours at 70 degrees F (21 degrees C).

7. Refinish repaired area, if required, as follows:
   a. Repeat Step 1.
   b. Prepare a mixture of 3 parts of bake coating (Item 45, WP 0157 00) of desired color, with 1 part, by volume, of thinner (Item 183, WP 0157 00).
   c. Spray one coat of the mixture on area. Allow bake coat to air dry 30 minutes. Bake at 275 degrees F (135 degrees C) for 1 hour.
   d. Apply second bake coat. Cure per step c. above.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
SANDWICH HONEYCOMB REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Trowel
Heat Lamp

Material/Parts:
Abrasive Paper (Item 5, WP 0157 00)
Abrasive, Paper, (Item 14, WP 0157 00)
Acetone, Technical (Item 20, WP 0157 00)
Adhesive (Item 28, WP 0157 00)
Adhesive (Item 29, WP 0157 00)
Adhesive (Item 32, WP 0157 00)
Cloth, Cleaning (Item 73, WP 0157 00)
Cloth, Glass (Item 79, WP 0157 00)
Filler, Corfil 615 (Item 103, WP 0157)
Teflon Sheet (Item 182, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0074 00
WP 0078 00
WP 0081 00 through WP 0090 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The sandwich honeycomb structure used in the construction of this helicopter consists of an aluminum alloy honeycomb core (density and thickness vary) sandwiched between aluminum alloy skins (material, thickness, and face patterns vary). In some instances, pod formers, skin panels and edge members are made of Scotchply, a nonwoven, impregnated, glass fabric. It encloses the transition of skins and core. In other instances, such as work platforms, free edges are filled with Corfil 615. The effectiveness of repairs to these structures depends upon the analysis and classification of a particular damage and the proper type repair. Refer to Figure 1, Sheets 1 thru 7 for repairs to sandwich honeycomb parts. The repairs given in this work package are not authorized for use on CH-47D aircraft that have nomex/honeycomb fuel pods installed. For nomex/fiberglass repair information, refer to WP 0084 00.

CLASSIFICATION OF DAMAGE

These classifications should be used to associate specific repair procedures found in subsequent paragraphs, with information in referenced illustrations.

1. Missing core damage occurs when the core bond is broken or a core-to-core splice is unbonded over a small area. Locate by coin tapping both sides of the panel skins. The coin tapping results should be analyzed so that damage is not misread or confused with skin-core voids described below. X-ray can be used to confirm a missing core condition.

2. Skin-core voids occur when bond between skin and core is broken over a small area. Locate by coin-tapping one side of the panel. When skin-core voids occur on both sides of core at same location, X-ray can be used to confirm that there is not a missing core condition.

3. Skin-doubler voids occur when bond between skin and a doubler is broken. Locate void by coin tapping.
CLASSIFICATION OF DAMAGE - continued

4. Dents are limited to those in the surface skin only:
   a. Not exceeding 4 square inches in area.
   b. Not deeper than 10 percent of panel thickness or 0.1 inch, whichever is less. They must be free of fractures or punctures, and must not occur more than once in any 40-inch length of panel. The limitation on the number of allowable dents in a 40-inch length shall not apply to the outer ramp skin. As long as dents do not cover more than 60 percent of a given panel, they may be repaired.

5. Small single skin damage is damage such as cracks and small punctures through one skin, where core is not affected or where puncture is so small that core replacement is impractical.

6. Large single skin damage is damage to one skin where core replacement is practical and necessary. Such damages include large punctures through one skin, skin-core voids over a large area, or a missing core condition.

7. Double skin damage is damage that affects each skin and the core.

8. Scotch-ply edge member and Corfil edge filler damage includes delaminations, cracks, splits, and holes in the glass fabric edge members and loose, cracked, or missing edge filler.

MISSING CORE DAMAGE REPAIR

1. Missing core contained within an area of 3 square inches and limited to one repair panel may be repaired as follows:
   a. Drill one 0.098-inch diameter vent hole through skin near one end of damage, and one 0.25-inch diameter-filling hole through skin near other end of damage.

   ![WARNING]

   ADHESIVE

   b. Mix a batch of adhesive (Item 29, WP 0157 00). Refer to manufacturer’s instructions.
   c. Use an air driven-caulking gun equipped with a nozzle smaller than 1/4 inch diameter. Fill unbonded area with adhesive through filling hole until core is filled and adhesive comes out vent hole. Refer to Figure 1, Sheet 4 of 8.
   d. Allow adhesive to harden. Sand repair to fair with skin.
   e. Refinish repair to match adjacent area.

REPAIR OF SKIN-CORE VOIDS

Voids having a maximum area that can be covered by two, 2 inch-diameter circles, and not exceeding one repair in any 40-inch length of panel, may be repaired as follows:

1. Locate center of void and drill a 1/4 inch diameter filling hole.

2. Spoil core under bond void, down to opposite skin, by rotating an internal cutter inserted through filling hole. Refer to Figure 1, Sheet 4 of 8. The spoiled core area must not exceed 6.3 square inches.
REPAIR OF SKIN-CORE VOIDS - continued

NOTE

Internal cutters can be fabricated from Allen wrenches. Sharpen short leg of the wrench so that when rotated it will cut and push core material 1/4 inch beyond void to leave a clean hole.

3. Drill a 3/32-inch-diameter vent hole through skin at edge of spoiled core.

WARNING

4. Mix a batch of adhesive (Item 29, WP 0157 00). Refer to manufacturer’s instructions.

5. Use an air-driven-caulking gun equipped with a nozzle smaller than 1/4 inch diameter. Fill spoiled area with adhesive through filling hole until area is filled and adhesive comes out vent hole. Refer to Figure 1, Sheet 4 of 8.

6. Allow adhesive to harden. Sand repair fair with skin.

7. Refinish repair to match adjacent area.

REPAIR OF SKIN-DOUBLER VOIDS

Voids between skin and doubler or between doubler and core can be repaired by Method A or B, depending on thickness of core. Refer to Figure 1, Sheet 4 of 8.

1. Method A. - When core is 0.255-inch thick or greater, proceed as follows:
   a. Locate center of void and drill a 3/16-inch diameter hole through skin and doubler.
   b. Using the 3/16-inch diameter holes for entrance, spoil the core.
   c. Drill 1/8-inch diameter holes through skin and doubler in a pattern around edge of spoiled core. Maintain a minimum distance of 5/8-inch and maximum of 1 inch between holes.

   WARNING

   d. Mix a batch of adhesive (Item 28, WP 0157 00). Refer to manufacturer’s instructions.
   e. Inject adhesive between skin and doubler, using a hypodermic syringe.
   f. Install rivets, MS20600AD4, through all but one of the 1/8-inch holes in skin and doubler, and the center 3/16-inch hole.
   g. Mix a batch of adhesive (Item 29, WP 0157 00). Refer to manufacturer’s instructions.
   h. Use an air-driven caulking gun equipped with a nozzle smaller than 3/16-inch diameter. Fill spoiled area with adhesive through one of the two open holes until area is filled and adhesive comes out other hole.
REPAIR OF SKIN-DOUBLER VOIDS - continued

i. While adhesive is wet, install rivets MS20600AD6 and AD4, in remaining two holes.

j. Remove excess adhesive.

2. Method B. - When core thickness is less than 0.255 inch, proceed as follows:

a. Locate center of void and drill one, 3/16-inch diameter hole, and one, ¼-inch diameter hole, on opposite side of panel.

b. Using the 1/4 inch-diameter hole for entrance, spoil the core.

WARNING

ADHESIVE

c. Mix a batch of adhesive (Item 29, WP 0157 00). Refer to manufacturer's instructions.

d. Use an air driven caulking gun equipped with a nozzle smaller than 1/8-inch diameter. Fill spoiled core area with adhesive through one of the two holes until core is filled and adhesive comes out other hole.

e. Allow adhesive to harden. Sand repair flush with skin.

f. Drill 1/8 inch-diameter holes through skin, doubler, hardened adhesive, and skin on opposite side, in a pattern following periphery of spoiled core. Maintain a minimum distance of 5/8-inch, but not exceeding a maximum distance of 1 inch, between holes. Drill through hardened adhesive and skin on opposite side at hole originally drilled through skin and doubler in step (a). Use a 3/16 inch diameter drill.

g. Prepare a mixture of adhesive (Item 28, WP 0157 00). Refer to manufacturer’s instructions.

h. Using a hypodermic syringe, inject mixture between skin and doubler.

i. While the adhesive is wet, install rivets, MS20470AD4, in holes drilled in step f, and one rivet, MS20470AD6, in the center filling hole.

j. Remove excess adhesive.

REPAIR OF DENTS

Small dents in surface skins can be filled as follows. Refer to Figure 1, Sheet 5 of 8.

WARNING

ACETONE, TECHNICAL

1. Prepare area by sanding it lightly with 400-grit abrasive paper (Item 14, WP 0157 00). Clean the area by wiping three or four separate times with cleaning cloth (Item 73, WP 0157 00) moistened with acetone (Item 20, WP 0157 00).

2. Flush area with water and inspect for breaks in water film. If any breaks occur in water film, repeat step 1.
REPAIR OF DENTS - continued

3. Prepare filler by thoroughly mixing 100 parts by weight of adhesive, part B and 140 parts by weight of adhesive, part A (Item 28, WP 0157 00).

4. Apply filler to dent, using a trowel.

**CAUTION**

Do not allow filler to exceed 200 degrees F (93 degree C) during accelerated curing as this will cause porosity and loss of strength.

**NOTE**

The working life of mixed filler is approximately 2 hours.

5. Allow filler to cure for 8 hours at 70 degrees F (21 degree C); or 2 hours at 150 to 160 degrees F (66 to 71 degrees C); or 45 minutes at 200 degrees F (93 degree C). Temperatures may be maintained using heat lamps.

6. Allow filler to cool. Blend repair to contour of adjacent surfaces. Use 400-grit abrasive paper (Item 14, WP 0157 00).

7. Refinish to match adjacent area.

**REPAIR OF SMALL, SINGLE-SKIN DAMAGE**

Cracks, not exceeding 6 inches, can be repaired as follows. Refer to Figure 1, Sheet 5 of 8.

1. Drill a 1/8-inch diameter hole at each end of crack.

2. Fabricate circular or oval skin reinforcement from same type material as original skin, but of next heavier thickness. The reinforcement should overlap crack a minimum of 3/4-inch.

3. Bond reinforcement to skin with adhesive. Refer to WP 0074 00.

**REPAIR OF SMALL, SINGLE-SKIN HOLES**

Small holes through one skin can be repaired as follows. Refer to Figure 1, Sheet 6 of 8.

1. Cut out damaged skin to form a circular or an oval hole.

2. Cut core back approximately 3/4-inch from edge of trimmed hole in skin.

3. Clean core and skin and fill cavity with Corfil 615 (Item 103, WP 0157). Refer to WP 0085 00.

4. Fabricate skin reinforcement from the same type material as original skin but of next heavier thickness. The reinforcement should overlap trimmed hole in skin by 3/4-inch.

5. Bond reinforcement to skin with adhesive. Refer to WP 0074 00.

**NOTE**

If the skin has a rigidized pattern, a circular row of rivets, MS20600AD6, should be installed at a pitch of 11/16-inch, through reinforcement and skin. In addition, a fillet of adhesive (Item 29, WP 0157 00) should be provided at edge of reinforcement.
REPAIR OF LARGE, SINGLE-SKIN DAMAGE

Damages not exceeding an area of 6 square inches and spaced a minimum of 9 inches apart can be repaired as follows. Refer to Figure 1, Sheet 6 of 8.

1. Cut out damaged skin and core to form a circular or an oval hole.
2. Fabricate a core replacement and a skin replacement from same type material as original.

**WARNING**

If a doubler is in area that has been damaged and cut out, a doubler replacement should also be fabricated.

3. Bond core replacement to inner surface of undamaged skin and to existing core. Bond skin replacement to core replacement, using adhesive. Refer to WP 0074 00.
4. Fabricate a skin reinforcement from same type material as original, but of next heavier thickness. The reinforcement should overlap damage cutout by 3/4-inch.
5. Bond reinforcement to skin with adhesive. Refer to WP 0074 00.
6. Install a row of rivets, MS20600AD6, around damaged cutout through reinforcement and skin, at a pitch of 11/16-inch.

REPAIR OF DOUBLE-SKIN DAMAGE

Damage not exceeding 6 square inches in either skin, after trimming, can be repaired. If a flush patch is required in one skin, the 6 square inch repair limit applies to the skin with the non-flush patch. A minimum of nine inches of skin must remain between edges of damaged areas after trimming.

1. Damage which affects each skin and core, and where one flush surface is required, can be repaired as follows. Refer to Figure 1, Sheet 1 of 8.
   a. Cut out damaged skins and core to form a circular or oval hole.
   b. Make skin replacement from same type material as original.
   c. Make core replacement from same type material as original. Trim core replacement to allow for thickness of skin reinforcement of flush surface.
   d. Make skin reinforcements from same type material as original, but next heavier thickness. The diameter of the reinforcements must overlap respective skin cutouts by 3/4-inch.
REPAIR OF DOUBLE-SKIN DAMAGE - continued

**WARNING**

![Image of hand with tools]

ADHESIVE

e. For flush surface, bond skin replacement and skin reinforcement together with adhesive. Refer to WP 0074 00.

f. For non-flush surface, bond skin replacement, skin reinforcement, and core replacement, together with adhesive. Refer to WP 0074 00.

g. Install assembly, bonded in step e, and install rivets, MS20600AD6, at a minimum distance of 11/16-inch.

h. Install assembly, bonded in step f, and install rivets MS206AD6, at a minimum distance of 11/16-inch.

2. Damage which affects each skin and core, and where flush surfaces are not required, can be repaired as follows. Refer to Figure 1, Sheet 2 of 8.

a. Cut out damaged skins and core to form a circular or oval hole.

b. Make skin replacement from same type material as original.

c. Make core replacement from same type material as original. Core thickness to be same as original.

d. Make skin reinforcements from same type material as original, but of next heavier thickness. The diameter of the reinforcements must overlap respective skin cutouts by 3/4-inch.

**WARNING**

![Image of hand with tools]

ADHESIVE

![Image of hand with tools]

ADHESIVE

e. For flush surface, bond skin replacement, and skin reinforcement together with adhesive. Refer to WP 0074 00.

f. Bond remaining skin replacement and skin reinforcement together with adhesive. Refer to WP 0074 00.

h. Install bonded assemblies and install rivets, MS20600AD6, at a minimum pitch of 11/16-inch.

**REPAIR OF SCOTCHPLY EDGE MEMBER AND CORFIL EDGE FILLER DAMAGE**

Damage which affects each skin and core, and where a flush surface is not required, can be repaired as follows:

1. Cut out damaged skins and core to form a circular or oval hole.

2. Make core replacement and skin replacements from same materials as original.

3. Make skin reinforcements from same material as original, but of next heavier thickness. The diameter of reinforcements must overlap skin cutout 3/4-inch.
REPAIR OF SCOTCHPLY EDGE MEMBER AND CORFIL EDGE FILLER DAMAGE – continued

WARNING

4. Bond skin replacements and core to one of skin reinforcements with adhesive. Refer to WP 0074 00.
5. Install bonded assembly in damage cutout.
6. Install other skin reinforcement and install the rivets, MS20600AD6, at a minimum pitch of 11/16-inch.

REPAIR OF HONEYCOMB PANEL EDGES

WARNING

Voids in the Scotch-ply edge members can be repaired by injecting adhesive (Item 32, WP 0157 00), with a hypodermic syringe, into the void through a gap along edge of member. Replace loose, cracked, or missing edge filler. Refer to WP 0074 00. Cracks, and similar damage can be repaired as follows. Refer to Figure 1, Sheet 3 of 8.

1. Scarf each existing ply of Scotch-ply 1/2 inch. Use abrasive paper (Item 5, WP 0157 00).
2. Fill exposed core with Corfil 615 (Item 103, WP 0157). Refer to WP 0085 00.
3. Cut patches from glass cloth (Item 79, WP 0157 00), equal to number of existing plies, so that each successive ply overlaps preceding ply by 1/2 inch.
4. Impregnate each patch with adhesive. Refer to WP 0081 00.
5. Place largest patch on a teflon sheet (Item 182, WP 0157 00). Place successively smaller patches, while wet, on largest patch.
6. Apply a final brush coat of adhesive (Refer to WP 0074 00) to assembled patches. Place assembly, with teflon sheet, on scarf area.

REPAIR OF BONDED FORMER ASSEMBLIES

Damage to bonded former assemblies which affects the cap only, or the cap and core, can be repaired. The size of the repair parts will vary with extent of damage. Therefore, exact dimensions for repair parts cannot be given. Refer to Figure 1, Sheet 7 of 8, Tables 1 and 2, and WP 0081 00 thru WP 0090 00. Care should be excised to maintain fit and proper fastening where adjoining structural members are involved. Refer to WP 0078 00 for information on methods of insulating dissimilar metals. In addition, all repairs must be completed before adhesive cures. Repairs must be watertight. Refer to WP 0080 00.

REPAIR OF CAP AND CORE DAMAGE

1. Cut out damaged cap, web, and core area. All edges should be filed smooth and corners rounded.
REPAIR OF CAP AND CORE DAMAGE - continued

2. Make a core replacement from a piece of core material. It must be same as original (Item 83 through 86, WP 0157 00), and fit damage cutout.

3. Make two web fillers of same material and thickness as original web to fit damage cutout. Refer to Table 2.

4. Make a web reinforcement from same material as original. Use next heavier thickness for each side of damage area. The length, width, and thickness can be determined by number of fasteners required, spacing to be maintained, and original thickness. Refer to Table 2.

5. Make a cap replacement from a section of extrusion, same as original, to fit damage cutout. If original extruded shape is not available, a replacement can be made from two formed angles and a filler of the same material as original cap or 4130 normalized steel. Refer to the alternate replacement as shown in Figure 1, sheet 7 of 8. The thickness of each part is to be selected to match original. Refer to Table 1 for cap extrusion part number.

6. Make a cap reinforcement from 7075-T6 aluminum alloy or 4130 normalized steel for each side of damage. Refer to Table 1 for minimum cross-sectional area required for reinforcement. The length of reinforcement is determined by size and number of fasteners required on each side of the damage.

7. Determine type, size and quantity of fasteners to be used on each side of the damage. Refer to Tables 1 and 2.

8. Maintain 2D edge distance and 4D spacing for fasteners, and 1/2-inch minimum radius on all internal corners.

**WARNING**

9. Mix a batch of adhesive and prepare surfaces to be bonded. Refer to WP 0074 00.

10. Apply the adhesive to edges of core replacement, cap replacement, and faying surfaces of all repair parts.

11. Assemble repair parts and install fasteners.

REPAIR OF CAP DAMAGE

Repairs for cap damage only, are the same as repairs where the cap and core are damaged, except that no core replacement is required.

**FORMER STA 180 LOWER CAP** (Refer to Figure 1, Sheet 7 of 8 and Tables 1 and 2).

Select fasteners required from Table 1. This requirement is fourteen, 3/16-inch-diameter steel lock bolts. On each side of the repair area, install seven fasteners in the vertical leg. To complete the repair, pick up original type and size fasteners through horizontal legs.

**FORMER STA 180 UPPER CAP** (Refer to Figure 1, Sheet 8 of 8 and Tables 1 and 2).

Select fasteners required from Table 1. This requirement is sixteen, 3/16-inch-diameter steel lock bolts in single shear. On each side of the repair area, install four fasteners in the forward and four fasteners in the aft horizontal legs. To complete the repair, place four fasteners through the vertical leg (double shear) on each side of the repair area.
LOWER CAP - SPECIAL CASES

The manufacturing splices at sta 160 and sta 440 are made with 3/16-inch and 1/4-inch diameter lock bolts. Obtain size, type, and quantity of fasteners required for each side of damage from Table 1 (single shear). Pick up required quantity (double shear) through vertical leg and install original type and size fasteners through horizontal legs.

Table 1. Repair Criteria For Bottom Former Assembly Caps

<table>
<thead>
<tr>
<th>FORMER STA</th>
<th>ORIGINAL CAP 7075-T6</th>
<th>REQUIRED CAP REINFORCEMENT CROSS-SECTIONAL AREA</th>
<th>NO. OF STEEL LOCKBOLT FASTENERS UPPER CAP</th>
<th>NO. OF STEEL LOCKBOLT FASTENERS LOWER CAP</th>
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<tr>
<td>160</td>
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<td>0.48 0.76</td>
<td>15 - 23</td>
<td>- 19</td>
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<td>180</td>
<td>VS90302 VS90303</td>
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<td>200</td>
<td>VS90802 VS90303</td>
<td>0.48 0.46</td>
<td>16 - 14</td>
<td>- -</td>
</tr>
<tr>
<td>220</td>
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<td>18 - 14</td>
<td>- -</td>
</tr>
<tr>
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<td>VS90519 VS90308</td>
<td>0.96 0.96</td>
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<td>- 17</td>
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<td>- 18</td>
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<td>- -</td>
</tr>
<tr>
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<td>18 - 14</td>
<td>- -</td>
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<td>- 16</td>
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<td>440</td>
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NOTES

A. All dimensions are in inches.
B. The asterisk (*) following extrusion number indicates an additional extrusion is used in that area.
Table 2. Repair Criteria for Bottom Former Assembly Webs

<table>
<thead>
<tr>
<th>FRAME STA</th>
<th>BASIC WEB 7075-T6 THICKNESS</th>
<th>FASTENERS WEB TO WEB REINFORCEMENT OR WEB AND DOUBLER TO WEB REINFORCEMENT (REFER TO NOTE B)</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>FWD AFT DIA SPACING DIA SPACING</td>
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<tr>
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<tr>
<td>480</td>
<td>0.032 0.032 5 0.65 to 0.75 5 0.65 to 0.75</td>
<td></td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Maintain three rows of rivets, MS20600AD, around the damage cutout.
Repair Parts

1. Skin replacement - Same type material as original.
2. Skin Reinforcement - Same type material as original, next heavier thickness.
3. Core Replacement - Same type material as original.
4. Skin Replacement - Same type material as original.
5. Skin Replacement - Same type material as original, next heavier thickness.

NOTE

All dimensions are in inches.

Figure 1. Sandwich Honeycomb Parts Repair (Sheet 1 of 8)
LOWER CAP - SPECIAL CASES – continued

DOUBLE-SKIN DAMAGE
(FLUSH SURFACE NOT REQUIRED)

RIVETS MS20600AD6

SKIN

CORE

SKIN

RIVETS MS20600AD6

Repair Parts

1. Skin Reinforcement - Same type material as original, next heavier thickness.
2. Skin replacement - Same type material as original.
3. Core Replacement - Same type material as original.

NOTE

All dimensions are in inches.

Figure 1. Sandwich Honeycomb Parts Repair (Sheet 2 of 8)
Figure 1. Sandwich Honeycomb Parts Repair (Sheet 3 of 8)
NOTES

A. All dimensions are in inches.
B. Mixed adhesive emerging from vent hole indicates complete filling of spoiled core area.
C. Typical repair for skin – doubler or core-doubler voids when core thickness is 0.255 or greater.
D. Typical repair for skin – doubler or core-doubler voids when core thickness is less than 0.255.

Figure 1. Sandwich Honeycomb Parts Repair (Sheet 4 of 8)
LOWER CAP - SPECIAL CASES – continued

REPAIR OF DENTS

REPAIR OF SMALL SINGLE-SKIN DAMAGE

NOTE
All Dimensions are in inches.

Figure 1. Sandwich Honeycomb Parts Repair (Sheet 5 of 8)
LOWER CAP - SPECIAL CASES – continued

REPAIR OF SMALL SINGLE-SKIN HOLES

CIRCULAR OR OVAL HOLE DAMAGE REMOVED

CORE CUT BACK 0.25 FROM EDGE OF HOLE

SKIN REINFORCEMENT

0.75

0.75

CIRCULAR OR OVAL HOLE DAMAGE REMOVED

RIVETS MS20600AD6

SECTION THROUGH COMPLETED REPAIR

NOTE

All Dimensions are in inches.

Figure 1. Sandwich Honeycomb Parts Repair (Sheet 6 of 8)
LOWER CAP - SPECIAL CASES – continued

Repair parts

1. Cap Replacement – Section of extended shape same as original. One required.
2. Alternate Cap Replacement – Extruded or formed replacement of two angles and filler.
   Material and thickness selected to match original or 4130 normalized.
3. Web Filler – Same material and thickness as web. Two required.
4. Web Reinforcement – Same material as original in next heavier thickness. Two required.
5. Cap Reinforcement – Extruded or formed from 7075-T6 or 4130 normalized. Two required.

NOTE

All Dimensions are in inches.

Figure 1. Sandwich Honeycomb Parts Repair (Sheet 7 of 8)
LOWER CAP - SPECIAL CASES – continued

Repair Parts

1. Cap Replacement – Section of extended shape same as original. One required.
2. Alternate Cap Replacement – Extruded or formed replacement of two angles and filler. Material and thickness selected to match original or 4130 normalized.
3. Core Replacement – Same type and thickness as original. Refer to applicable repair figure for core thickness.
4. Web Filler – Same material and thickness as web. Two required.
5. Web Reinforcement – Same material as original in next heavier thickness. Two required.
6. Cap Reinforcement – Extruded or formed from 7075-T6 or 4130 normalized. Two required.

NOTE

All Dimensions are in inches.

Figure 1. Sandwich Honeycomb Parts Repair (Sheet 8 of 8)

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Heat Lamp
Roller
Vacuum Cleaner
Hole Saw or Router
Vacuum System

Material/Parts:
Abrasive Cloth, (Item 1, WP 0157 00)
Abrasive, Paper, (Item 7, WP 0157 00)
Abrasive, Paper, (Item 10, WP 0157 00)
Acetone, Technical (Item 20, WP 0157 00)
Adhesive, (Item 27, WP 0157 00)
Adhesive, (Item 30, WP 0157 00)
Adhesive, (Item 31, WP 0157 00)
Adhesive, (Item 32, WP 0157 00)
Cellophane, Sheet (Item 55, WP 0157 00)
Cloth, Cleaning, (Item 73, WP 0157 00)
Cloth, Glass, (Item 78, WP 0157 00)
Cloth, Glass, (Item 79, WP 0157 00)
Cloth, Glass, (Item 80, WP 0157 00)

Material/Parts – continued:
Cup, Polyethylene (Item 98, WP 0157 00)
Gloves, Anti Contact (Item 108, WP 0157 00)
Hardener, (Item 111, WP 0157 00)
Paper, Wrapping, (Item 129, WP 0157 00)
Tape, Masking (Item 175, WP 0157 00)
Temperature Indicating Strips (Item 187, WP 0157 00)
Tongue Depressor, (Item 190, WP 0157 00)
Wire Fabric, (Item 196, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0003 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

The composite sandwich honeycomb structure consists of nomex honeycomb core (density and thickness very)
sandwiched between fiberglass inner and outer skins. The skins are of multiply plies with doublers and reinforced
at stress areas. The fuel pods, aft pylon work platforms, aft pylon forward fairing, and ramp aft exterior skin are of
this construction.

INSPECTION OF COMPOSITE COMPONENTS

Inspect for cracks, dents, scratches, gouges, delaminations, punctures, and corrosion that can affect a single or
both skins and core.

NEGLIGIBLE DAMAGE

Damage to panels and fuel pods consisting of 3 square inches and 0.10-inch deep can be classified as negligible.

REPAIRABLE DAMAGE

1. Damage to panels greater than negligible damage and less than 50 percent of panel area can be repaired.
   Damage that exceeds repair limits should have an engineering disposition. Refer to WP 0003 00 for
   engineering disposition request procedures.
REPAIRABLE DAMAGE - continued

2. Damage to fuel pods that exceeds negligible damage and less than 500 square inches can be repaired. Depressions exceeding 3 square inches and 0.10 deep shall be considered as a puncture, and be repaired accordingly. Damage that exceeds repair limits should have an engineering disposition. Refer to WP 0003 00 for engineering disposition request procedures.

DAMAGE REQUIRING REPLACEMENT

Damage that exceeds limits listed below should have an engineering disposition. Refer to WP 0003 00 for engineering disposition request procedures.

1. Replace pod sections that have cracks over 6 inches long, or voids over 1200 square inches.

2. Replace pod sections that have dents larger than 10 square inches, or deeper than 0.15-inches or 15 percent of material thickness. Total dents in a pod section shall not exceed 100 square inches. Dents shall be at least 20 inches apart.

3. Replace pod sections if skin damage exceeds 25 percent of skin area, or which interferes with structure boundary members.

4. Replace pod sections when skin damage in honeycomb section areas exceeds 100 square inches after trimming.

5. Replace pod sections with repairs areas closer than 20 inches together.

PREPARATION OF COMPOSITE PANEL DAMAGE AREA FOR REPAIR

WARNING

1. Clean damage area using cleaning cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00). Wear gloves (Item 108, WP 0157 00). Wipe dry with clean dry cloth.

2. Examine for type and location of damage. Note if damage is limited to surface skin only, or damage extends into core and bottom skin.

3. Check area around damage for skin delamination by tapping with a small metallic object, such as a coin. A dull sound indicates delamination.

4. If damage penetrates surface skin check core for water, oil, fuel, dirt, or other foreign matter.

5. If water or other fluids has entered core, remove it as follows:
   a. Cut away damaged skin to expose core in the damaged area.
   b. Remove standing fluid from core using a vacuum cleaner.
PREPARATION OF COMPOSITE PANEL DAMAGE AREA FOR REPAIR - continued

**WARNING**

**SANDING OPERATIONS**

**NOTE**

Removal of all adhesive clinging to core is not required.

c. Remove adhesive from top of core surface using abrasive paper (Item 10, WP 0157 00). Remove adhesive particles using a vacuum cleaner.

d. Dry the wet core by using wire fabric (Item 196, WP 0157 00) and glass cloth (Item 78, WP 0157 00); install a vacuum bag over the affected area and apply vacuum. Apply heat to the area using a heat lamp for 1 hour at 150 to 160 degrees F (68 to 71 degrees C). Set heat lamp at 11 to 12 inches from repair area.

**CAUTION**

Do not exceed 160 degrees F (71 degrees C) at surface. Damage will occur.

e. Remove vacuum and check exposed core for dryness.

**REPAIR COMPOSITE POD SKIN WITH MINOR DAMAGE**

Minor surface damage such as dents, scratches or pits in the resin where the damage does not penetrate first ply of fabric.

**CAUTION**

Reinforced plastic (fiberglass/epoxy) dust is very abrasive and may damage other equipment and/or contaminate parts with which it comes in contact. Cover or remove equipment from work area.

**Repair**

1. Determine size of repair required. Mask around damaged area as close as possible to final patch size. Allow one-inch minimum overlap beyond edge of damage.

**WARNING**

**ACETONE, TECHNICAL**

2. Remove finish from marked area using sanding block and abrasive paper (Item 7, WP 0157 00). Use cleaning cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00) as needed to soften finish. Wear gloves (Item 108, WP 0157 00).
REPAIR COMPOSITE POD SKIN WITH MINOR DAMAGE - continued

WARNING

3. Prepare adhesive (Item 32, WP 0157 00) and apply to damaged area. Install vacuum system and allow adhesive to cure. After curing, remove tooling and sand area using abrasive cloth (Item 1, WP 0157 00). Blend repaired area as close as possible to original contour.

4. Touch up paint per WP 0078 00.

GLASS CLOTH PREPARATION FOR COMPOSITE REPAIRS

Preparation of glass cloth for repairs, refer to Figure 1.

CLASS CLOTH PREPARATION FOR REPAIRS

1. Cellophane sheet
2. Glass cloth

NOTE

All dimensions are in inches.

Figure 1. Glass Cloth Preparation

1. Determine the size and number of plies needed for each repair.

2. Cut one piece of glass cloth (Item 79 or 80, WP 0157 00) large enough for cutting the number of plies needed.

3. Cut two pieces of cellophane sheet (Item 55, WP 0157 00) at least 1-inch larger, all around, than piece of glass cloth. Fasten one piece to a smooth surface using masking tape (Item 175, WP 0157 00).
4. Prepare glass cloth adhesive as follows:

**WARNING**

a. Weigh 101 parts adhesive (Item 32, WP 0157 00) and 14 parts hardener (Item 111, WP 0157 00) accurately.

b. Mix weighed parts in polyethylene cup (Item 98, WP 0157 00) until color is uniform. Use a tongue depressor (Item 190, WP 0157 00) and wear gloves (Item 108, WP 0157 00). Working life of mixed adhesive is 30 minutes.

5. Spread adhesive mixture on cellophane sheet. Place a piece of cut glass cloth in adhesive.

6. Cover glass cloth with second piece of cellophane sheet and press using a roller. Continue until glass cloth is saturated with adhesive mixture and all entrapped air is squeezed out.

**NOTE**

Cellophane decreases fraying of glass cloth edges while cutting.

7. Cut the glass cloth pieces so that the weave of the cloth will run horizontally and vertically. Do not remove the cellophane, cut through it and remove during installation of cloth.
REPAIR OF COMPOSITE POD SKIN PUNCTURE

For single skin puncture damage, refer to Figure 2.

**NOTE**

All dimensions are in inches.

1. Fill holes with adhesive (Item 32, WP 00157 00).
2. Cellophane sheet
3. Glass cloth

Figure 2. Single Skin Puncture Repair
REPAIR OF COMPOSITE POD SKIN PUNCTURE - continued

**CAUTION**

Reinforced plastic (fiberglass/epoxy) dust is very abrasive and may damage other equipment and/or contaminate parts with which it comes into contact. Cover or remove equipment from work area.

**NOTE**

This repair is limited to punctures 1/2-inch diameter or less through top skin and core.

**Repair**

1. Outline of damaged area shall have no corners. A circle or oblong outline is preferred. Use a compass and straight edge.

   **NOTE**
   
   Do not cut into undamaged plies.

2. Cut into damaged plies along outline and removed damaged plies by peeling away or by sanding.

3. Determine number of plies cut through on skin. Mask off area around removed plies equal to at least 1/2-inch for each ply in all directions, plus an additional one inch.

   **WARNING**
   
   ACETONE, TECHNICAL

4. Remove finish from marked area using sanding block and abrasive paper (Item 7, WP 0157 00). Use cleaning cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00) as needed to soften finish. Wear gloves (Item 108, WP 0157 00).

5. Taper edge of cut out plies 1/2-inch for each removed ply. Leave at least one inch between outside edge of taper and border of finish removal area.

   **WARNING**
   
   ACETONE, TECHNICAL

6. Remove sanding dust from repair area with a vacuum cleaner. Clean masked area with cleaning cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00) and wipe clean with dry cloth.

7. Determine number of pieces of glass cloth (Item 79 or 80, WP 0157 00) needed for repair. Number of pieces shall be equal to one more than number of plies removed. Each piece shall overlap previous piece 1/2-inch in all directions. All pieces shall be oriented so that weave of cloth will run horizontally and vertically.

8. In areas where the wire mesh is damaged, repair it as follows:
   a. Cut a piece of wire fabric (Item 196, WP 0157 00) large enough to overlap existing mesh one inch in all directions.
REPAIR OF COMPOSITE POD SKIN PUNCTURE – continued

**WARNING**

b. Brush a coat of adhesive mixture (Item 30, WP 0157 00) over repair area and existing mesh.

c. Seat replacement mesh over repair area and existing mesh. Make sure mesh is in contact over entire one inch overlap.

d. Install vacuum system and allow adhesive to cure.

**NOTE**

Serviceable cure can be achieved without heat at 70 to 80 degrees F (21 to 27 degrees C) in 24 hours. Vacuum may be removed after 8 hours. Cure may be accelerated by using heat lamp. Do not exceed 175 deg F and monitor with temperature indicating strip (Item 187, WP 0157 00).

9. Remove vacuum bagging material and inspect patch for pits, blisters, voids, and excessive resin deposits. If repair is not satisfactory, rework repair as needed.

10. Touch up paint per WP 0078 00.
REPAIR OF COMPOSITE POD SINGLE SKIN DAMAGE

For damage to single skin without core damage, refer to Figure 3.

**COMPOSITE SINGLE SKIN DAMAGE**

- **OBLONG**
- **RECTANGLE**
- PREFERRED DAMAGE CUT-OUT SHAPES

**WIRE MESH REPAIR**

**SURFACE FINISH**

**TYPICAL CROSS-SECTION THROUGH CUTOUT**

**NOTE**

All dimensions are in inches.

1. Wire mesh
2. Glass cloth
3. Cellophane sheet
4. Wire mesh repair

Figure 3. Single Skin Damage Repair
REPAIR OF COMPOSITE POD SINGLE SKIN DAMAGE - continued

**CAUTION**

Reinforced plastic (fiberglass/epoxy) dust is very abrasive and may damage other equipment and/or contaminate parts with which it comes in contact. Cover or remove equipment from work area.

**Repair**

1. Outline of damaged area shall have no corners. A circle or oblong outline is preferred. Use a compass and straight edge.

**NOTE**

Do not cut into undamaged plies.

2. Cut into damaged plies along outline and removed damaged piles by peeling away or by sanding.

3. Determine number of plies cut through on skin. Mask off area around removed plies equal to at least 1/2-inch for each ply in all directions, plus an additional one inch.

**WARNING**

ACETONE, TECHNICAL

4. Remove finish from marked area using sanding block and abrasive paper (Item 7, WP 0157 00). Use cleaning cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00) as needed to soften finish. Wear gloves (Item 108, WP 0157 00).

5. Taper edge of cut out plies 1/2-inch for each removed ply. Leave at least one inch between outside edge of taper and border of finish removal area.

**WARNING**

ACETONE, TECHNICAL

6. Remove sanding dust from repair area with a vacuum cleaner. Clean masked area with cleaning cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00) and wipe clean with dry cloth.

7. Determine number of pieces of glass cloth (Item 79 or 80, WP 0157 00) needed for repair. Number of pieces shall be equal to one more than number of plies removed. Each piece shall overlap previous piece 1/2-inch in all directions. All pieces shall be oriented so that weave of cloth will run horizontally and vertically.

8. In areas where the wire mesh is damaged, repair it as follows:
   a. Cut a piece of wire fabric (Item 196, WP 0157 00) large enough to overlap existing mesh one inch in all directions.
b. Brush a coat of adhesive mixture (Item 30, WP 0157 00) over repair area and existing mesh.
c. Seat replacement mesh over repair area and existing mesh. Make sure mesh is in contact over entire one inch overlap.
d. Install vacuum system and allow adhesive to cure.

NOTE
Serviceable cure can be achieved without heat at 70 to 80 degrees F (21 to 27 degrees C) in 24 hours. Vacuum may be removed after 8 hours. Cure may be accelerated by using heat lamp. Do not exceed 175 deg F and monitor with temperature indicating strip (Item 187, WP 0157 00).

9. Remove vacuum bagging material and inspect patch for pits, blisters, voids, and excessive resin deposits. If repair is not satisfactory, rework repair as needed.

10. Touch up paint per WP 0078 00.
REPAIR OF COMPOSITE POD SINGLE SKIN AND CORE DAMAGE

For one skin and core damage, refer to Figure 4.

COMPOSITE SINGLE SKIN AND CORE DAMAGE

1. Opposite skin - do not damage.
2. Damaged skin
3. Damaged core
4. Wire mesh
5. Install one piece of glass cloth between opposite skin and new core.
7. Replacement core for damaged core.
8. Replacement core in shape or cutout.
9. Orient ribbon of core and replacement core in same direction.

NOTE
All dimensions are in inches.

Figure 4. Single Skin and Core Damage Repair
REPAIR OF COMPOSITE POD SINGLE SKIN AND CORE DAMAGE - continued

**CAUTION**

Reinforced plastic (fiberglass/epoxy) dust is very abrasive and may damage other equipment and/or contaminate parts with which it comes in contact. Cover or remove equipment from work area.

Repair

1. Outline of damaged area shall have no corners. A circle or oblong outline is preferred. Use a compass and straight edge.

2. Remove damaged skin and core within outline with hole saw or router. Cut through skin and core with router as follows:
   a. Measure radius of router base. Draw a guideline around repair area outline at a distance equal to the radius.
   b. Install router bit 8. Set depth equal to damaged skin and core thickness.
   c. Start router. Keep router under complete control. Grasp handles with both hands.
   d. Rest edge of router base on surface so that bit is centered on damaged area. Slowly lower router so that bit penetrates the surface skin.
   e. Slowly move router outward until router base just touches guideline. Follow guideline around in a counterclockwise direction.
   f. Keep edge of base just touching guideline.
   g. When cut is complete, move router into center of repair area. Turn off router and remove it.

3. Cut through damaged skin and core with hole saw as follows:
   a. Drill pilot hole at center of damaged area. Make hole the same size as center drill of hole size. If damage does not allow drilling, cover area with several layers of wrapping paper (Item 129, WP 0157 00) and masking tape (Item 175, WP 0157 00). Secure paper with tape.
      
      **NOTE**
      
      Hole saw shall be same diameter as curve of damage area outline.
   b. Insert center drill of hole saw into pilot hole. Hold saw lightly against skin and slowly turns it clockwise. Use wrench.
   c. Turn saw until it goes through skin.

4. Remove damaged skin and core as follows:
   a. Peel off cutout section of skin using pliers and chisel.

   **CAUTION**

   Do not cut or score opposite skin when removing damaged core.
   b. Cut through core to opposite skin. Use penknife with blunt point. Cut only deep enough to separate damaged core.
   c. Remove damaged core. Use pliers and chisel. Do not damage opposite skin.
   d. Sand skin where core was removed. Use abrasive paper (Item 7, WP 0157 00).
5. Taper edge of cut out plies 1/2-inch for each removed ply. Leave at least one inch between outside edge of taper and border of finish removal area.

**WARNING**

**ACETONE, TECHNICAL**

6. Remove sanding dust from repair area with a vacuum cleaner. Clean masked area with cleaning cloths (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00) and wipe clean with dry cloth.

7. In areas where the wire mesh is damaged, replace it as follows:
   a. Cut a piece of wire fabric (Item 196, WP 0157 00) large enough to overlap existing mesh one inch in all directions.

**WARNING**

**ADHESIVE**

   b. Brush a coat of adhesive mixture (Item 31, WP 0157 00) over repair area and existing mesh.
   c. Seat replacement mesh over repair area and existing mesh. Make sure mesh is in contact over entire one-inch overlap.

8. Determine number of pieces of glass cloth (Item 79 or 80, WP 0157 00) needed for repair. Number of pieces shall be equal to one more than number of plies removed. One piece shall be same size as cut out. Each piece shall overlap previous piece 1/2-inch in all directions. All pieces shall be oriented so that weave of cloth will run horizontally and vertically.

**CAUTION**

Wear gloves (Item 108, WP 0157 00) for remaining steps. Bare hands will contaminate materials, causing poor bonding.

**NOTE**

Core material must be clean and dry for adhesive to properly bond.

9. Make core plug in shape of cutout but 0.125-inch larger all around and same material as original core. Orient ribbon in the same direction as the existing core.
REPAIR OF COMPOSITE POD SINGLE SKIN AND CORE DAMAGE - continued

WARNING

10. Mix core adhesive (Item 30, WP 0157 00) as follows:
   a. Weigh 100 parts of resin and 23 parts of hardener.
   b. Mix weighed parts in polyethylene cup (Item 98, WP 0157 00) until color is uniform. Use tongue depressor (Item 190, WP 0157 00) and wear gloves (Item 108, WP 0157 00).

11. Bond repairs by applying enough pressure to keep repair from shifting. Install a vacuum pump until adhesive cures. Cure adhesive at 150 to 160 degrees F (66 to 71 degrees C) for 2.5 hours. Use explosive-proof heat lamp set 11 to 12 inches from repair area. Monitor temperature with temperature indicating strips (Item 187, WP 0157 00).

NOTE

Serviceable cure can be achieved without heat at 70 to 80 degrees F (21 to 27 degrees C) in 24 hours. Vacuum may be removed after 8 hours.

12. Remove vacuum bagging material and inspect patch for pits, blisters, voids, and excessive resin deposits. If repair is not satisfactory, rework repair as needed.

13. Touch up paint per WP 0078 00.

REPAIR OF COMPOSITE POD BOTH SKINS AND CORE DAMAGE

For inner and outer skin and core damage, refer to Figure 5.
REPAIR OF COMPOSITE POD SINGLE SKIN AND CORE DAMAGE - continued

TYPICAL CROSS-SECTION THOUGH CUTOUT

1.0 INCH TAPER 0.5 INCHES FOR EACH PLY

SURFACE FINISH

COMPOSITE DOUBLE SKIN AND CORE DAMAGE

INNER SURFACE (TYPICAL)

14.0 INCHES DAMAGE

TYPICAL CROSS-SECTION THROUGH CUTOUT

1. Wire mesh
2. Replacement core in shape or cutout.
3. Orient ribbon of core and replacement core in same direction.
5. Replacement core in shape or cutout.

NOTE
All dimensions are in inches.

Figure 5. Inner and Outer Skin and Core Damage Repair
REPAIR OF COMPOSITE POD BOTH SKINS AND CORE DAMAGE - continued

**CAUTION**

Reinforced plastic (fiberglass/epoxy) dust is very abrasive and may damage other equipment and/or contaminate parts with which it comes in contact. Cover or remove equipment from work area.

**Repair**

1. Outline of damaged area shall have no corners. A circle or oblong outline is preferred. Use a compass and straight edge.

2. Remove damaged skin and core within outline with hole saw or router. Cut through skin and core with router as follows:
   a. Measure radius of router base. Draw a guideline around repair area outline at a distance equal to the radius.
   b. Install router bit 8. Set depth equal to damaged skin and core thickness.
   c. Start router. Keep router under complete control. Grasp handles with both hands.
   d. Rest edge of router base on surface so that bit is centered on damaged area. Slowly lower router so that bit penetrates the surface skin.
   e. Slowly move router outward until router base just touches guideline. Follow guideline around in a counterclockwise direction. Keep edge of base just touching guideline.
   f. When cut is complete, move router into center of repair area. Turn off router and remove it.

3. Cut through damaged skin and core with hole saw as follows:
   a. Drill pilot hole at center of damaged area. Make hole the same size as center drill of hole size. If damage does not allow drilling, cover area with several layers of wrapping paper (Item 129, WP 0157 00) and masking tape (Item 175, WP 0157 00). Secure paper with tape.

   **NOTE**

   Hole saw shall be same diameter as curve of damage area outline.

   b. Insert center drill of hole saw into pilot hole. Hold saw lightly against skin and slowly turn it clockwise. Use wrench.
   c. Turn saw until it goes through skin.

4. Remove damaged skin and core as follow:
   a. Peel off cutout section of skin using pliers and chisel.

   **CAUTION**

   Do not cut or score opposite skin when removing damaged core.

   b. Cut through core to opposite skin. Use penknife with blunt point. Cut only deep enough to separate damaged core.
   c. Remove damaged core. Use pliers and chisel. Do not damage opposite skin.
   d. Sand skin where core was removed. Use abrasive paper (Item 7, WP 0157 00).
REPAIR OF COMPOSITE POD BOTH SKINS AND CORE DAMAGE - continued

5. Taper edge of cut out plies 1/2-inch for each removed ply. Leave at least one inch between outside edge of taper and border of finish removal area.

**WARNING**

6. Remove sanding dust from repair area with a vacuum cleaner. Clean masked area with cleaning cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00) and wipe clean with dry cloth.

7. Determine number of pieces of glass cloth (Item 79 or 80, WP 0157 00) needed for repair. Number of pieces shall be equal to one more than number of plies removed. One piece shall be same size as cut out. Each piece shall overlap previous.

8. In areas where the wire mesh is damaged, replace it as follows:
   a. Cut a piece of wire fabric (Item 196, WP 0157 00) large enough to overlap existing mesh one inch in all directions.

   **WARNING**

   b. Brush a coat of adhesive mixture (Item 30, WP 0157 00) over repair area and existing mesh.
   c. Seat replacement mesh over repair area and existing mesh. Make sure mesh is in contact over entire one-inch overlap.

9. Make core plug in shape of cutout but 0.125-inch larger, all around, and same material as original core. Orient ribbon in same direction as existing core.

10. Mix core adhesive (Item 27, WP 0157 00) as follows:
   a. Weigh 100 parts of resin and 23 parts of hardener.
   b. Mix weighed parts in polyethylene cup (Item 98, WP 0157 00) until color is uniform. Use tongue depressor (Item 190, WP 0157 00) and wear gloves (Item 108, WP 0157 00).

11. Bond repairs by applying enough pressure to keep repair from shifting. Install a vacuum pump until adhesive cures. Cure adhesive at 150 to 160 degrees F (66 to 71 degrees C) for 2.5 hours. Use explosive-proof heat lamp set 11 to 12 inches from repair area.

**NOTE**

Serviceable cure can be achieved without heat at 70 to 80 degrees F (21 to 27 degrees C) in 24 hours. Vacuum may be removed after 8 hours. Cure may be accelerated by using heat lamp. Do not exceed 175 deg F and monitor with temperature indicating strip (Item 187, WP 0157 00).
REPAIR OF COMPOSITE POD BOTH SKINS AND CORE DAMAGE - continued

12. Remove vacuum bagging material and inspect patch for pits, blisters, voids, and excessive resin deposits. If repair is not satisfactory, rework repair as needed.

13. Touch up paint per WP 0078 00.

14. Refer to Figure 1 for repair glass cloth preparation.
REPAIR OF DAMAGED EDGE, TAB, AND CORNERS

For damage to edges, tab, and corners, refer to Figure 6.

**NOTE**

All dimensions are in inches.

Figure 6. Edge, Corner, and Tab Repair

**CAUTION**

Reinforced plastic (fiberglass/epoxy) dust is very abrasive and may damage other equipment and/or contaminate parts with which it comes in contact. Cover or remove equipment from work area.

**Repair**

1. Outline damaged edges or corners. Use a compass and straight edge.

2. Remove number of plies required for the repair. Taper edge of cut out plies 1/2-inch for each removed ply. Sand top and bottom surfaces, using abrasive paper (Item 7, WP 0157 00), at least one inch from edge of last ply to remove surface resin.

3. Remove sanding dust from repair area with a vacuum cleaner. Clean masked area with cleaning cloth (Item 73, WP 0157 00) damp with acetone, technical (Item 20, WP 0157 00) and wipe clean with dry cloth.

4. Cut plies of glass cloth (Item 79 or 80, WP 0157 00) needed for each step down for the repair. Cut two additional plies to overlap last step down by one inch.
REPAIR OF DAMAGED EDGE, TAB, AND CORNERS - continued

NOTE
Replacement plies of glass cloth should be cut to correspond to the fabric direction of the surface ply. When cutting plies of glass cloth, allow extra length for trimming after curing.

5. Prepare plies per glass cloth preparation instructions below.

6. Bond repairs by applying enough pressure to keep repair from shifting. Vacuum bag, clamping plates, or weights and pressure plates may apply pressure until adhesive cures. Cure adhesive at 150 to 160 degrees F (68 to 71 degrees C) for 2.5 hours. Use explosive-proof heat lamp set 11 to 12 inches from repair area.

NOTE
Serviceable cure can be achieved without heat at 70 to 80 degrees F (21 to 27 degrees C) in 24 hours. Vacuum may be removed after 8 hours. Cure may be accelerated by using heat lamp. Do not exceed 175 deg F and monitor with temperature indicating strip (Item 187, WP 0157 00).

7. Remove vacuum bagging material and inspect patch for pits, blisters, voids, and excessive resin deposits. If repair is not satisfactory, rework repair as needed.

8. Touch up paint per WP 0078 00.

9. Refer to Figure 1 for repair glass cloth preparation.
REPAIR OF DAMAGED, MISLOCATED, AND OVERSIZE HOLES

Repair damaged, mislocated, and oversize holes; refer to Figure 7.

NOTE
All dimensions are in inches.

CAUTION
Reinforced plastic (fiberglass/epoxy) dust is very abrasive and may damage other equipment and/or contaminate parts with which it comes in contact. Cover or remove equipment from work area.

Repair

NOTE
Step 1 applies if part thickness is 6 plies or less.
Step 2 applies if part thickness is 7 plies or more.

1. Determine size of repair required. Mask around damaged area as close to final patch size as possible. Sand area to remove surface resin using abrasive cloth, (Item 1, WP 0157 00), on both sides. Allow 1/2-inch minimum overlap for holes less than 1/2-inch diameter. Allow one inch minimum overlap for holes 1/2 to 3/4-inch diameter. Mask both sides of part.

2. Determine size of repair required. Mask around damaged area as close to final patch size as possible. Sand area to remove surface resin using abrasive cloth, (Item 1, WP 0157 00), on both sides. Mark a 1/2-inch outline around holes less than 1/2-inch in diameter. Mark a 3/4-inch outline around holes 1/2 to 3/4-inch in diameter. Remove one ply in marked off area using abrasive cloth (Item 1, WP 0157 00). Allow one inch minimum overlap for holes less than 1/2-inch in diameter. Allow 1 3/4-inch minimum overlap for holes 1/2 to 3/4-inch in diameter. Mark both sides of part.
REPAIR OF DAMAGED, MISLOCATED, AND OVERSIZE HOLES

WARNING

ACETONE

3. Clean areas using cleaning cloth (Item 73, WP 0157 00) moistened with acetone, technical (Item 20, WP 0157 00). Allow repair area to dry. Protect area from contamination.

4. Cut glass cloth (Item 79 or 80, WP 0157 00) to correspond to the pattern of the required plies. Prepare adhesive (Item 31, WP 0157 00).

WARNING

ADHESIVE

5. Apply a coat of adhesive on repair area. Apply saturated glass cloth to repair. Fill damaged hole with adhesive, turn part over and apply saturated glass cloth to damaged area. Make sure the glass cloth weave is place in same direction as surface ply of part.

6. Place wrapping paper (Item 129, WP 0157 00) over repair area. Carefully work out all air bubbles and excess adhesive using a squeegee.

7. Apply pressure to repair to avoid shifting. Pressure to repair may be supplied by vacuum bag, clamping plates, or weights and pressure plates.

8. After repair has cured remove tools and bagging from repair. Blend repair as close as possible to original contour. Inspect repair for pits, blisters, voids, and excessive adhesive deposits. If repair is not satisfactory, rework repair as needed.

9. Touch up paint per WP 0078 00.
INSTALLATION AND REPLACEMENT OF SHUR-LOK INSERTS

For replacement or installation of damaged or missing inserts, refer to Figure 8.

COMPOSITE SHUR-LOK INSERT INSTALLATION

1. Replacement insert
2. Remove core material to depth of opposite skin.
3. Panel skin
4. Panel core material
5. Pilot hole for location of insert
6. Panel skin
7. Shur-loc guide tool
8. Tab, placed on guide tool pins
9. Remove paper backing for tab.
10. Adhesive for installing insert

NOTE
All dimensions are in inches.

Figure 8. Shur-Lok Installation
INSTALLATION AND REPLACEMENT OF SHUR-LOK INSERTS

CAUTION

Reinforced plastic (fiberglass/epoxy) dust is very abrasive and may damage other equipment and/or contaminate parts with which it comes in contact. Cover or remove equipment from work area.

Repair

1. Remove damaged insert and inspect surrounding area for delamination, oversize hole, and cleanliness.

2. Repair oversize or damaged holes using previous repair methods.

3. Determine proper location of insert or inserts.

CAUTION

Drilling into opposite skin will require repair of skin.

4. Carefully drill a pilot hole at proper location using a 1/8 inch drill.

5. Counterbore pilot hole to diameter of insert being installed and remove core to depth of opposing skin, being careful not to damage the skin.

6. Prepare guide tool by removing paper backing from tab, align hole, insert tool, and press firmly against side of tab.

WARNING

ADHESIVE

7. Prepare adhesive (Item 31, WP 0157 00). Weigh 100 parts of adhesive, 25 parts of hardener (Item 111, WP 0157 00), and mix until color is uniform.

NOTE

Working life of adhesive is about 30 minutes.

8. Fill hole about half full of mixed adhesive. Install insert in center of hole, press tab to imbed insert into adhesive and remove tab. Inject adhesive through either hole in insert using hypodermic injector to complete proper fill of adhesive. Wipe off excessive adhesive from top of insert use cleaning cloth (Item 73, WP 0157 00) and allow adhesive to cure.

9. Touch up paint per WP 0078 00.

END OF WORK PACKAGE
APPLICATION OF FILLER, CORFIL 615

WARNING

FILLER

This procedure is used when adding filler (Item 103, WP 0157 00) as an edge filler or core filler on aluminum alloy sandwich honeycomb structures.

WARNING

CURING AGENT

1. Weigh 7 parts of curing agent (Item 99, WP 0157 00) and 100 parts of filler (Item 103, WP 0157 00). Use trip balance. Mix thoroughly in polyethylene cup (Item 98, WP 0157 00). Use tongue depressor (Item 190, WP 0157 00).
APPLICATION OF FILLER, CORFIL 615 - continued

NOTE
Working life of filler is 30 minutes to 2 hours. Handling material in flat shallow tray can extend life to 2 hours.

WARNING
NAPHTHA, ALIPHATIC

2. Remove all loose filler or dirt from damaged area. Clean area. Apply naphtha, aliphatic (Item 122, WP 0157 00). Use brush. Wear goggles.

3. Wait until naphtha dries completely.

4. Mask all areas around damage. Use masking tape (Item 175, WP 0157 00).

5. Pour filler material into damaged area to a height slightly higher than core or edge.

6. Allow material to harden for 6 hours at 70 degrees F (21 degrees C), or use heat lamps to cure at 120 degrees (48 degrees C) for 1 hour. Use temperature indicating strip (Item 188.3, WP 0157 00) to monitor temperature.

7. Blend repairs. Use abrasive paper (Item 10, WP 0157 00).

8. Remove sanding dust and chips.

9. Refinish repaired area per WP 0078 00.

APPLICATION OF PALMER 611 RESIN COMPOUND

WARNING
RESIN COMPOUND

1. Apply resin compound (Item 150, WP 0157 00) at edge on insert fairings as follows:
   a. Weigh 95 parts of compound (Item 150, WP 0157 00) and 5 parts of accelerator (Item 19, WP 0157 00). Wear gloves (Item 108, WP 0157 00).
   b. Stir components in polyethylene cup (Item 98, WP 0157 00) using tongue depressor (Item 190, WP 0157 00).

NOTE
Working life of compound is 2 1/2 to 3 1/2 hours at 75 degrees F (24 degrees C).
APPLICATION OF PALMER 611 RESIN COMPOUND - continued

**WARNING**

Cleansing Compound, Solvent

c. Clean parts. Use cleaning cloth (Item 73, WP 0157 00) soaked with cleaning compound, solvent (Item 69, WP 0157 00).
d. Roughen cleaned surface lightly. Use abrasive paper (Item 10, WP 0157 00). Repeat step c.
e. Apply compound and work in with tongue depressor (Item 190, WP 0157 00) or rubber spatula.
f. Remove excess compound using rubber spatula.

2. Cure compound. Use any of following cycles. Use heat lamp and appropriate temperature indicating strips.
   a. 16 hours at 120 degrees F (49 degrees C). Use temperature indicating strip (Item 188.3, WP 0157 00).
   b. 1 hour at 150 degrees F (66 degrees C); then 16 hours at 70 degrees F (21 degrees C). Use temperature indicating strip (Item 187, WP 0157 00).
   c. 1 hour at 200 degrees F (93 degrees C). Use temperature indicating strip (Item 188, WP 0157 00).

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
SKIN AND WEB REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Gloves, Protective, (Item 106, WP 0157 00)
Primer, Epoxy, (Item 140, WP 0157 00)
Sealant, (Item 156, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0003 00
WP 0080 00
WP 0081 00
WP 0107 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SKINS AND WEBS

The skin panels and webs of the fuselage and aft pylon are aluminum alloy. Variances in skin fabrication materials such as sandwich-honeycomb or fiberglass are described in the component definition. Skin panels and repairs are sealed watertight.

MINOR DAMAGE

1. Minor damage is defined as nicks or scratches, whose depth, after burnishing, does not exceed 10 percent of the thickness of the material.

2. Holes and cracks may be considered minor damage, but must be repaired.

3. All minor damage must clear bolts, rivets, and radii a minimum of 3/4-inch.

REPAIRABLE DAMAGE

Repairable damage is more extensive damage. Repairable damage shall not affect more then 25 percent of the skin area between boundary members and clears structural members. Repairable damage requires less than full skin insertion.

REPLACEMENT DAMAGE

Replacement damage may be caused by extensive skin damage or numerous isolated damages where replacement of a full panel is necessary. Skin panels are replaced along original boundary members. Joints and seams are sealed the same as the original installation.

SKIN AND WEB REPAIR

This WP will not attempt to describe the many skin and web repair schemes that are possible on the CH-47 airframe. A few of the more common and frequently used procedures will be described. For more repair procedures refer to TM 55-1520-240-23 and/or TM 1-1500-204-23. If a specific repair procedure is not described in the referenced TM's or this DMWR, the Depot/Contractor should submit a Maintenance Engineering Call (MEC)
SKIN AND WEB REPAIR - continued

to Engineering (AMRDEC) IAW WP 0003 00, requesting repair instructions for the particular noted damage to the airframe.

Table 1, in conjunction with Figure 1, Sheet 1 thru Sheet 3, depicts the various aircraft exterior skins, the original manufacture materials, and the recommended repair materials. For more detail, refer to manufacturer’s drawings.

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
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<td>0.020 301 ANL CRES</td>
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Table 1. Fuselage Exterior Skin - continued

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NOTES

A. All dimensions are in inches.
B. Stations and waterlines represent the centerline of skin joints.
C. Refer to this WP for information on oil can inspection and repair. Refer to WP 0080 00 for information on watertight sealing.
D. Refer to this WP and referenced TM’s for minor damage to skin panels.
E. The panels (Index # 28) are sandwich honeycomb structures. Refer to WP 0083 00 for repair information.
F. Refer to WP 0081 00 for information on repair of access doors and panels.
G. The cabin crown walkways (Index # 30) are sandwich honeycomb structures. Refer to WP 0107 00 for repair procedures.
H. This part is used on aircraft serial number 92-0367 and 92-0368.
SKIN AND WEB REPAIR - continued

LEFT-HAND SIDE PANELS

Figure 1. Fuselage Exterior Skin Panels (Sheet 1 of 3)
Figure 1. Fuselage Exterior Skin Panels (Sheet 2 of 3)
Subsequent paragraphs in conjunction with Table 2, Table 3, and Figure 2, Sheet 1 thru Sheet 8, describe procedures for coin patch repair of skins, backing plate repair for webs, and oil can repairs. Refer to TM 1-1500-204-23 for rivet type and spacing. Maintain a minimum clearance of 5/8-inch between cutouts and edge of replacements, unless otherwise noted. Insulate dissimilar metals.
COIN PATCH REPAIR FOR SKINS

This repair is for dents, punctures, tears, and small cracks that can be cut out from 1/2 to 1 1/2-inches in diameter. Maintain a minimum clearance of 5/8-inch between cutouts and edge of replacements, unless otherwise noted. No more than two patches are permitted for each skin panel. Panels not less than 15 x 50 inches, between longer longerons and sta 160 and sta 482, may have a maximum of four patches. All patches must clear adjacent structural members by 1/8-inch and be sealed. Refer to WP 0080 00 for sealing procedures.

1. Cut out damage and make a coin patch of same material and thickness as skin. The patch should have a diameter of 5/16-inch less than the cutout.

2. Make a circular backing plate three times the diameter of the coin patch and from the same material, but in next heavier thickness.

3. Smooth edges of cutout, coin patch, and backing plate with a file. Center coin patch on backing plate and drill rivet holes through coin patch and backing plate. The size and number of rivet holes are determined by size of rivet to be used. In most cases MS20470AD3 rivets can be used.

4. Install and set rivets.

**WARNING**

5. Apply coat of primer (Item 140, WP 0157 00) on all surfaces of coin patch. Allow primer to dry. Wear gloves (Item 106, WP 0157 00).

6. Insert coin patch in cutout from inside. Drill rivet holes through backing plate and skin. Use MS20470AD4 rivets for 0.025-inch thick skin, and MS20470AD5 rivets for skin 0.030-inch or thicker. Rivet pitch should be about 3/4-inch.

**WARNING**

7. Remove coin patch from cutout after establishing a rivet pattern and seal faying surfaces of cutout and coin patch. Apply sealant (Item 156, WP 0157 00) to coin patch and cutout. Wear gloves (Item 106, WP 0157 00).


9. If damage is less than 1/2-inch and larger than 3/16-inch and is located over undamaged frame or stiffener, do not use a backplate. Rivet coin patch to frame or stiffener.
BACKING PLATE REPAIR FOR WEBS

This repair is intended for damage occurring in webs, such as holes, tears, or sharp dents that can be cut out. It must be repaired within an area not to exceed 11/2-inches diameter. When repaired, it must clear next structure by 1/8-inch. Not more than two repairs are permitted in any web.

1. Remove damage by cutting or drilling. The diameter of cutout should not be less than 3/16-inch.

2. Smooth edges of cutout with a file.

3. If damage can be removed by drilling, drill a 3/16-inch diameter hole or smaller. Insert a MS20470AD rivet and install a AN960D washer of a size to fit shank of rivet. Set rivet.

4. If diameter of cutout is larger than 3/16-inch, make a circular backing plate from same material as web in the next heavier thickness.

**NOTE**

The backing plate must be large enough to cover cutout and overlap web a minimum of four times diameter of rivet. If backing plate cannot be circular, all corners must have a minimum radius of 1/4-inch.

5. Smooth edges of backing plate with a file.

6. Center backing plate over cutout. Drill a rivet pattern having a pitch of 1/2 to 3/4-inch. The number of rivet holes will be determined by size of backing plate. Maintain a pattern that will allow a minimum edge distance of two times the diameter of the rivet. Use MS20470AD4 rivets for webs not thicker than 0.025-inch. Use MS20470AD5 rivets for webs 0.03-inch or thicker. Use monel rivets for corrosion-resistant steel webs.

**WARNING**

![EPOXY PRIMER]

7. Apply a thin even coat of primer (Item 140, WP 0157 00) to faying surfaces of backing plate and web. Allow primer to dry.

8. Assemble backing plate to web by installing and setting rivets.

**OIL CAN REPAIRS**

Trapped skin is evidenced by an outward or inward bulge between attaching hardware. It is normally caused by improper repair techniques and is not acceptable. Correct this condition by removing attaching hardware, as required, allowing skin to shift, and installing next larger size fasteners.

Loose skins and skins having unacceptable oil can should be repaired using stiffeners with the following exceptions:

1. Stiffeners are not permitted within areas on bottom of cabin fuselage section between lower longerons, sta 160 to sta 482.

2. Stiffeners are not permitted externally on the helicopter.
3. Stiffeners are not permitted in areas where they will interfere with installation and functions, or operation of any component.

4. Determine locations where a minimum number of stiffeners will correct oil canning or loose skin.

5. Add stiffeners as required. Stiffeners must be attached to primary structure at each end, such as longeron to longeron or frame to frame. The method of attachment should eliminate discrepancy without transferring oil can to another area. Comply with the following methods:
   a. Stiffeners must be next heavier thickness than skin to which they are attached and are to be formed from 2024-T3 Clad aluminum alloy. Stiffeners exceeding 30 inches in length must be made from Alcoa 33372 extrusion or equivalent.
   b. If attaching clips are used, make them from 2024-T3 Clad aluminum alloy. They must be the same thickness as stiffener to which they are attached.
   c. Install MS2047AD4 rivets at approximately 3/4-inch pitch for attachment of stiffeners not thicker than 0.040-inch.
   d. Install MS2047AD5 rivets at approximately 7/8-inch pitch for attachment of stiffeners thicker than 0.040-inch.
   e. Seal and refinish stiffeners and clips to match adjacent structure. Refer to WP 0078 00 and WP 0080 00.
SKIN AND WEB REPAIRS

RECTANGULAR DAMAGE CUTOUT REPAIR

INSERTION REPAIR

PATCH

MINIMUM RADIUS 0.375

SKIN

FILLER

MAXIMUM PITCH 1.250

REPAIR IS SYMMETRICAL ABOUT CENTERLINE

PATCH REPAIR

PATCH

MINIMUM RADIUS 0.375

SKIN

MAXIMUM PITCH 1.250

REPAIR IS SYMMETRICAL ABOUT CENTERLINE

REPAIR OF DAMAGE NEAR EXISTING STRUCTURE

USE EXISTING RIVET LOCATIONS. USE SAME TYPE RIVET AS ORIGINAL IN NEXT LARGER DIAMETER.

FILLER

MAXIMUM PITCH 1.250

MINIMUM RADIUS 0.375

PATCH

MINIMUM RADIUS 0.375

PATCH

NOTES

1. All dimensions are in inches.
2. Damage near existing structure repair parts:
   A. Reinforcement – Refer to Table 2 for repair material and thickness.
      Use same material and thickness as original if specific figure does not exist.
   B. Replacement – Use same material and thickness as original.
      Refer to Table 2 for original.

Figure 2. Skin and Web Repairs - Lightly Stressed Areas (Sheet 1 of 8)
SKIN AND WEB REPAIRS - continued

CIRCULAR DAMAGE REPAIR

MAXIMUM PITCH 1.250

MINIMUM OF TWO ROWS REQUIRED

DRILL 0.125 DIAMETER HOLE EACH END OF CRACK

MINIMUM LENGTH 2.5 X LENGTH OF CRACK

NOTES

1. All dimensions are in inches.
2. Crack repair parts:
   A. Reinforcement – Refer to Table 2 for repair material and thickness. Use same material and thickness as original if specific figure does not exist.
   B. Replacement – Use same material and thickness as original. Refer to Table 2 for original.

Figure 2. Skin and Web Repairs - Lightly Stressed Areas (Sheet 2 of 8)
SKIN AND WEB REPAIRS - continued

RECTANGULAR DAMAGE REPAIR

DAMAGE REPAIR NEAR EXISTING STRUCTURE

NOTES

1. All dimensions are in inches.
2. A strap patch, shown on Figure 2, Sheet 6 can be used as an alternate for the tabs shown on reinforcements (patch).
3. Repair Parts:
   A. Reinforcement – Refer to Table 2 for repair material and thickness. Use same material and thickness as original if specific figure does not exist.
   B. Replacement – Use same material and thickness as original. Refer to Table 2 for original.
   C. Filler – Use same material and thickness as original. Refer to Table 2 for original.

Figure 2. Skin and Web Repairs - Heavily Stressed Areas (Sheet 3 of 8)
SKIN AND WEB REPAIRS - continued

DAMAGE REPAIR NEAR PRIMARY HORIZONTAL MEMBER

LOCATIONS. USE SAME TYPE RIVET AS ORIGINAL IN NEXT LARGER DIAMETER.

MINIMUM RADIUS 0.375

MAXIMUM DIAMETER REPAIRABLE 3.0

ANGULAR PITCH

HOLE DIAMETER

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NOTE

All dimensions are in inches.

Figure 2. Skin and Web Repairs - Heavily Stressed Areas (Sheet 4 of 8)
SKIN AND WEB REPAIRS - continued

NOTES

1. All dimensions are in inches.
2. A strap patch, shown on Figure 2 Sheet 6, can be used as an alternate for the tabs shown on reinforcements (patch).
3. Damage near adjacent member – repair parts:
   A. Reinforcement – Refer to Table 2 for repair material and thickness.
      Use same material and thickness as original if specific figure does not exist.
   B. Replacement – Use same material and thickness as original. Refer to Table 2 for original.

Figure 2. Skin and Web Repairs - Heavily Stressed Areas (Sheet 5 of 8)
SKIN AND WEB REPAIRS - continued

NOTES

1. All dimensions are in inches.
2. Where damaged area crosses a stiffener or stringer, widen the reinforcement to form tabs, or add a strap patch, as shown. Pick up a total of five rivets each side of single row patterns. Eight rivets each side for multiple-row patterns.
   A. Reinforcement – Refer to Table 2 for repair material and thickness.
      Use same material and thickness as original if specific figure does not exist.
   B. Replacement – Use same material and thickness as original.
      Refer to Table 2 for original.

Figure 2. Skin and Web Repairs - Insertion Skin Repair Across Stiffeners (Sheet 6 of 8)
SKIN AND WEB REPAIRS - continued

HOLE REPAIR
(TYPE 1)

ORIGINAL DAMAGE

TRIM DAMAGE TO DIAMETER REQUIRED

INNER RIVET ROW

OUTER RIVET ROW

HOLE REPAIR
(TYPE 2)

TRIM DAMAGE. MAINTAIN 0.125 RADIUS IN CORNERS.

MINIMUM EDGE DISTANCE
0.25 FOR 0.125 DIA RIVETS.
USE 0.312 EDGE DISTANCE FOR 0.156 DIA RIVETS.

.06 SPACING (TYP)

0.5 (TYP)

Figure 2. Skin and Web Repairs (Sheet 7 of 8)
SKIN AND WEB REPAIRS - continued

1. Reinforcement – Use same material and thickness as original.
2. Replacement – Use same material and thickness as original. Maintain minimum clearance of 0.0625-inch between cutout and replacement. Refer to note B.
3. Rivets – Use 0.125-inch diameter MS20615 rivets, for material with a thickness of 0.032-inch or less. Use 0.156-inch diameter rivets for material with a thickness of 0.032-inch or greater.
4. Repair Parts
   A. All dimensions are in inches.
   B. Required only when flush surface is needed. Replacement must be attached before reinforcement is installed. Maintain proper edge distance for rivets used.

Figure 2. Skin and Web Repairs (Sheet 8 of 8)
Table 2. Repair Reinforcement Selection

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SKIN AND WEB REPAIRS - continued

Table 2. Repair Reinforcement Selection - continued

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NOTES

A. All dimensions are in inches.
B. These charts may be used to select a reinforcement when a figure denoting a specific repair material does not exist for a particular part.

Table 3. Criteria for Hole Repair

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NOTE

Reference Table 3 categories of inner and outer rivet row diameter and patch diameter; dimensions in the left column are for material thickness less than 0.032-inch and those in the right column are for material thickness greater than 0.032-inch.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FORMED PARTS REPAIRS

INITIAL SETUP

Test Equipment: As Required

Tools and Special Tools: As Required

Material/Parts: As Required

Personnel Required: As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0003 00
WP 0078 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for formed parts located throughout the aircraft. Refer to WP 0003 00, for General Damage Limits for Airframe Structural Repairs.

FORMERS

1. Formers are members spaced at intervals through the fuselage, ramp, and aft pylon. Depending on location and function, formers are called partial, full, crown, floor, or bottom formers.

2. Formers provide structural reinforcement in a crosswise (transverse) direction. Also, formers serve as attaching points for stringers, boundary members for major skin splices, and as a base for structural fittings.

3. Damage to formers shall be classified as minor, repairable, or damage requiring replacement.

MINOR DAMAGE

1. Minor damage is damage that can be repaired easily by burnishing nicks and scratches and removal of small damaged areas.

2. Damage must clear bolts, rivets, and radii a minimum of 0.75-inch.

3. Damage to a fitting is limited to burnishing, which will not reduce area thickness more than 10 percent.

4. Certain splice attachment hardware holes may be 0.015-inch oversize.

REPAIRABLE DAMAGE

1. Damage more extensive than minor but not exceeding one-half web cross section shall be repaired by patching.

2. Damage to more than one-half of web cross section, or damage that removes the heel of an extruded section shall be repaired by insertion.
REPAIRABLE DAMAGE - continued

3. Extensive damage such as the loss of a major portion of a former, or numerous isolated damaged areas requires replacement in whole or part.

4. Damage to a fitting joining the bottom sections to the side sections requires replacement of bottom (bonded assembly) section.

5. Damaged fittings, clips, and small brackets or supports require replacement.

FORMED PARTS REPAIRS

This WP will not attempt to describe the many formed parts repair schemes that are possible on the CH-47 airframe. A few of the more common and frequently used procedures will be described. For more repair procedures refer to TM 55-1520-240-23 and/or TM 1-1500-204-23. If a specific repair procedure is not described in the referenced TMs or this DMWR, the Depot/Contractor should submit a Maintenance Engineering Call (MEC) to Engineering (AMRDEC) IAW WP 0003 00, requesting repair instructions for the particular noted damage.

Tables 1 and 2, in conjunction with Figure 1 thru Figure 5, depict the original materials, repair materials, and repair procedures for zee sections, angles, formed flanges, frames, and channels. Insulate dissimilar metals as per WP 0078 00.

Table 1. Reinforcement Selection - Aluminum and Steel

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<th>7075-T6 REINFORCEMENT FOR 7075-T6</th>
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Table 2. Reinforcement Selection - Corrosion Resistant Steel

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NOTES
1. All dimensions are in inches.
2. Reinforcement material thickness to be same as original.
FORMED PARTS REPAIRS – continued

Repair Parts

1. Reinforcement – Refer to the applicable figure for repair material and thickness or Figure 5 if a specific repair figure does not exist.
2. Filler – Use same material and thickness as original.

NOTES

A. All dimensions are in inches.
B. The minimum number of rivets in each row and each side of damage is: four in 2024, and six in 7075 and corrosion resistant steel.

Figure 1. Damaged Zee Section Repair
FORMED PARTS REPAIRS – continued

Repair Parts

1. Reinforcement – Refer to the applicable figure for repair material and thickness or Figure 5 if a specific repair figure does not exist.
2. Filler – Use same material and thickness as original.

NOTES

A. All dimensions are in inches.
B. The minimum number of rivets in each row and each side of damage is: four in 2024, and six in 7075 and corrosion resistant steel.

Figure 2. Damaged Angle Repair
FORMED PARTS REPAIRS – continued

Repair Parts

Reinforcement – Refer to the applicable figure for repair material and thickness or Figure 5 if a specific repair figure does not exist.

NOTE

All dimensions are in inches.

Figure 3. Repair of Cracks in Single Formed Flange
FORMED PARTS REPAIRS – continued

Repair Parts

1. Reinforcement – Refer to the applicable figure for repair material and thickness or Figure 5 if a specific repair figure does not exist.
2. Filler – Use same material and thickness as original. Refer to the applicable figure for original.
3. Replacement – Use same material and thickness as original. Refer to the applicable figure for original.

NOTES

A. All dimensions are in inches.
B. Use original rivet locations and same type rivet in next larger diameter, or substitute blind rivets in original locations.
C. Use existing rivet locations, and a minimum of five rivets, each side of damage, in flange area.

Figure 4. Frame Repair
REPAIRS FOR DAMAGED CHANNELS HAVING A WEB GREATER THAN 1.5 WIDE

REPAIRS FOR DAMAGED CHANNELS HAVING A WEB LESS THAN 1.5 WIDE

Repair Parts

1. Reinforcement – Refer to the applicable figure for repair material and thickness or Figure 5 if a specific repair figure does not exist.
2. Filler – Use same material and thickness as original. Refer to applicable figure for original.
3. Replacement – Use same material and thickness as original. Refer to applicable figure for original.

NOTES

A. All dimensions are in inches.
B. Use original rivet locations and same type rivet in next larger diameter, or substitute blind rivets in original locations.
C. Use existing rivet locations, and a minimum of five rivets, each side of damage, in flange area.

Figure 5. Repair of Damaged Channels (Sheet 1 of 2)
FORMED PARTS REPAIRS – continued

Repair Parts

1. Reinforcement – Refer to the applicable figure for repair material and thickness or Figure 5 if a specific repair figure does not exist.
2. Filler – Use same material and thickness as original. Refer to applicable figure for original.
3. Replacement – Use same material and thickness as original. Refer to applicable figure for original.

NOTES

A. All dimensions are in inches.
B. Use original rivet locations and same type rivet in next larger diameter, or substitute blind rivets in original locations.
C. Use existing rivet locations, and a minimum of five rivets, each side of damage, in flange area.

Figure 5. Repair of Damaged Channels (Sheet 2 of 2)

END OF WORK PACKAGE
INTERNAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Epoxy Primer, (Item 140, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0003 00
WP 0078 00
WP 0086 00
WP 0087 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This WP covers most repairs of extruded parts. The die number of the original extrusion, sectional view, and dimensions of a corresponding formed replacement is shown in this WP. All dimensions shown are in inches unless otherwise noted. When repairing a damaged extrusion from a repair illustration, make a formed replacement to the required dimensions. Repair the extrusion as shown in this WP. A combination of two or more available thickness can be used, providing the specified dimensions are maintained. Also, a single piece of stock material can be used and machined to the required dimensions. Replacements can also be formed from the same material as original, providing they are tempered to the same condition as original, after forming. Dissimilar metals used in combination must be insulated to prevent corrosion per WP 0078 00. Composite and formed replacements can be used where no interference of adjacent structure exists and where no rivets ride the radius of the replacement. When a replacement is not listed, an extruded section having the same die number, as the original extrusion should be used.

CAUTION

Precautions should be taken to prevent damage to surrounding materials and members. The majority of extrusion applications in the structure are in highly stressed areas and serve as important load carrying members. These include longerons, stringers, stiffeners, and caps. When using pneumatic riveting equipment, it is important that a frequent check be made of dimensions and of adjacent rivets to determine if any deformation or loss of rivet heads has occurred.
NEGligible damage

**WARNING**

EPOXY PRIMER

Negligible damage is damage that can be corrected by a simple procedure, such as removing dents and small damaged areas, and the plugging of small holes. Refer to Figure 2 for examples of negligible damage to extruded parts. Nicks, scratches, and small damaged areas can be removed by burnishing, provided the dimensions shown in Figure 2 are not exceeded. The depth, after burnishing, must not be greater than 10 percent of the thickness of the thinnest leg of the extrusion. Punctures, rough dents, cracks, nicks, and scratches, which exceed the maximum burnished depth, are negligible only if they can be cleaned out as a round hole which can be classified as negligible. Plug all negligible damage holes 3/16-inch diameter or over with a tight-fitting rivet or bolt. Holes, plugged or open, and burnished areas, must clear all radii, and must clear all fasteners a minimum of 3/4-inch. Smooth dents not exceeding the maximum burnished depth and a maximum of 1/2-inch diameter are negligible. Two adjacent dents to be classified as negligible must be separated by a four-inch length of undamaged original extrusion. Measure the distance at the edges of the burnished areas. Apply two coats of epoxy primer (Item 140, WP 0157 00) to burnished areas and edges of holes.

**CAUTION**

The use of heat to remove a dent is not permitted as the properties of the original part may be altered.

REPAIRABLE DAMAGE

Repairable damage is damage more extensive than negligible, but can be repaired. Damage at any one location affecting only one leg and not extending into the heel is repairable by patching. When filler is used to replace the thickness of the original extrusion, refer to Figure 1 and to WP 0086 00 and WP 0087 00. Damage that affects more than one leg or extends into the heel should be repaired. The insertion of a partial replacement can be made, provided the material and sectional dimensions shown in this WP are used.

DAMAGE NECESSITATING REPLACEMENT

Damage resulting in the loss of a major portion of an extrusion, numerous isolated damages, or complexity of adjacent structure, necessitates replacement with an extruded section having the same die number and material characteristics as the original extrusion.

EXTRUDED PARTS REPAIR

This WP will not attempt to describe the many extruded parts repair schemes that are possible on the CH-47 airframe. The more common and frequently used procedures will be described. For more repair procedures, refer to TM 55-1520-240-23 and/or TM 1-1500-204-23. If a specific repair procedure is not described in the referenced TM’s or this DMWR, the Depot/Contractor should submit a Maintenance Engineering Call (MEC) to Engineering (AMRDEC) IAW WP 0003 00, requesting repair instructions for the particular noted damage.

The Figures and Tables in this WP depict repair procedures for negligible and minor damage plus replacement repairs for angles, bulb angles, Tee sections, special Tee sections, Zee sections, special Zee sections, standard channels, special channels, and miscellaneous sections. Insulate dissimilar metals per WP 0078 00.
Repair Parts

1. Reinforced angle or plate, normalized. Refer to Note D.
2. Filler or formed replacement, 4130, same thickness as original extrusion. Refer to Note D.

NOTES

A. All dimensions are in inches.
B. The repair of partial damage is made using the same thickness, size, type, and number of attachments as used in the repair of complete damage.
C. Where no original fasteners existed in a given leg, flange or web, it is preferred, if possible, that fasteners in that leg, flange, or web be staggered with respect to fasteners in other areas of the part being repaired.
D. Repair parts can be made from the same material as the part being repaired, providing that the condition or temper of the original material is achieved before assembly.
E. Refer to TM 1-1500-204-23 for minimum allowable bend radii of annealed steel sheet.
F. All attachments used are MS2047AD rivets, unless otherwise noted.
G. Use original rivet locations on each side of the damaged area where possible, and locate as many new attachment locations as possible.

Figure 1. Extruded Parts Repairs
EXTRUDED PARTS REPAIR - continued

Figure 2. Extruded Parts Repairs (Minor Damage)

NOTE
Refer to Figure 1 for repair parts and notes.

Figure 3. Angles
EXTRUDED PARTS REPAIR - continued

Table 1. Riveting Information – Angle Repairs

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## EXTRUDED PARTS REPAIR – continued

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**NOTES**

*Steel Lockbolts, 0.250–inch diameter

**DD type rivets**
EXTRUDED PARTS REPAIR – continued

NOTE
Refer to Figure 1 for repair parts and notes.

Figure 4. Bulb Angles

Table 2. Riveting Information – Bulb Angle Repairs

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NOTE
** DD type rivets
EXTRUDED PARTS REPAIR – continued

NOTE
Refer to Figure 1 for repair parts and notes.

Figure 5.  Tee Sections

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### NOTES

*Steel Lockbolts, 0.250–inch diameter

**DD type rivets
Repair Parts
1. Reinforcement: 0.20–inch 7075-T6
2. Replacement

Figure 6. Special Tee Sections
EXTRUDED PARTS REPAIR – continued

Repair Parts
1. Reinforcement: 0.20–inch 7075-T6
2. Replacement

Figure 7. Zee Sections

Table 4. Riveting Information – Zee Sections

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<th>EXTRUSION DIE NO.</th>
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NOTES
*Steel Lockbolts, 0.250–inch diameter
**DD type rivets
Repair Parts

1. Reinforcement: 0.090–inch 4130
2. Replacement

Figure 8. Special Zee Sections
EXTRUDED PARTS REPAIR – continued

NOTE

Refer to Figure 1 for repair parts and notes.

Figure 9. Standard Channels

Table 5. Riveting Information – Standard Channels

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NOTES

*Steel Lockbolts, 0.250–inch diameter
**DD type rivets
Repair Parts

1. Reinforcement: 0.090–inch 7075-T6
2. Replacement: VS90575, ZD60A-75

Figure 10. Special Channels
EXTRUDED PARTS REPAIR – continued

**Repair Parts**
1. Leg Replacement: AND 10133-0703, 2024-T4
2. Leg Replacement: AND 10134-1205, 2024-T4
3. Reinforcement: 0.012-inch 4130
4. Filler: 0.06-inch 2024-T4
5. Leg Replacement: AND 10137-1205, 2024-T4
6. Filler: 0.025-inch 2024-T4

Figure 11. Miscellaneous Sections (Sheet 1 of 2)
Repair Parts

1. Top Reinforcement: 0.10-inch 4130
2. Side Reinforcement: 0.20-inch 4130
3. Replacement: VS90517, ED60A-T5 (Machine to configuration of original damaged section)

Figure 11. Miscellaneous Sections (Sheet 2 of 2)

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
ATTACHING HOLE REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0078 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers the repair of mis-located rivets, and defective rivet holes; refer to Figure 1, Sheet 1 thru Sheet 5. Also refer to WP 0078 00 for insulation of dissimilar metals.
REPAIR

NOTES

A. All dimensions are in inches.
B. Drill No. 40 hole at ends of each crack that does not terminate at a rivet hole.
C. All repair rivets to be same type, material, and diameter as original.
D. All repair parts to be same thickness and material, as damaged sheet.
E. If thickness of stringers is greater than 0.025–inch and dimension “W” is more than 2.0 inches, add filler in this area under reinforcement. Add extra rivets at 0.750–inch pitch. Filler is not required when reinforcement is used on reverse side.

Figure 1. Attaching Hole Repairs (Sheet 1 of 5)
NOTES

A. All dimensions are in inches.
B. Drill No. 40 hole at ends of each crack that does not terminate at a rivet hole.
C. All repair rivets to be same type, material, and diameter as original.
D. All repair parts to be same thickness and material, as damaged sheet.

Figure 1. Attaching Hole Repairs (Sheet 2 of 5)
NOTES

A. All dimensions are in inches.
B. Drill No. 40 hole at ends of each crack that does not terminate at a rivet hole.
C. All repair rivets to be same type, material, and diameter as original.
D. All repair parts to be same thickness and material as damaged sheet.

Figure 1. Attaching Hole Repairs (Sheet 3 of 5)
NOTES

A. All dimensions are in inches.
B. All repair rivets to be same type, material, and diameter as original.
C. This repair is not applicable to patterns of less than five rivets. A maximum of one rivet or one rivet hole may be repaired in patterns containing a maximum of 10 rivets. A maximum of 10 percent of the rivet pattern may be repaired for patterns containing more than 10 rivets. Damaged rivet holes are not to be consecutive.
D. This repair is not applicable for rivet diameter 0.1875-inch or larger. Any size rivet may be counted to determine total pattern.
E. This repair is not applicable for rivet holes elongated more than 1.5 times the diameter of the original hole.
F. This repair is not applicable for rivet holes elongated less than 1.5 times the diameter of the original hole.
G. This repair is not applicable on the edge of a part where a rivet is picked up, nor can it be used as a substitute for installing a rivet by counter-boring the part.

Figure 1. Attaching Hole Repairs (Sheet 4 of 5)
NOTE
Generally, the minimum acceptable edge distance is 2D.

Figure 1. Attaching Hole Repairs (Sheet 5 of 5)

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Epoxy Primer, (Item 140, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package provides procedures for eliminating gaps and correction of unlevel conditions. Refer to Figure 1.

WARNING

EPOXY PRIMER
NOTES
A. All dimensions are in inches.
B. Repair rivets to be same type and material as original.
C. Unless otherwise noted, all repair parts to be same thickness and material as original structure.
D. Repair limited to max gap or interference of 0.25-inch.
E. Repair not applicable to main structural fittings, such as transmission and engine supports.
F. Max removal of flange, where interference exists, is limited to 0.25-inch.
G. Max thickness of filler is 0.0625-inch.

Figure 1. Eliminating Gaps and Unlevel Conditions

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
WINDSHIELD AND WINDOW REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Rubber Block
Stitched Buffing Wheel
Portable Disk Sander

Material/Parts:
Abrasive Paper (Item 11 thru Item 15, WP 0157 00)
Buffing Compound (Item 53, WP 0157 00)
Cloth, Flannel, Cotton (Item 77, WP 0157 00)
Rouge (Item 152, WP 0157 00)
Tape, Masking (Item 175, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers the inspection of glass windshields and glass cockpit side windows. It also covers inspection and repair of plastic cockpit and cabin windows.

GLASS WINDSHIELDS

1. Inspect glass windshield and glass side windows for cracks (no cracks allowed, replace), nicks, dents, scratches, blemishes, and discolorations in critical areas. If defects block or limit pilot's vision, replace windshield and/or windows.

   NOTE
   Dark brown and gold discolorations between layers of glass are indications of burnout. Do not mistake burnout colors for light gold tint of heating element.

2. Inspect windshield for burnout. Replace windshield if burnout blocks or limits pilot's vision.

   NOTE
   Delaminating in windshield appears as blisters and bubbles between layers.

3. Inspect windshield for delamination (separation of layers). Replace windshield if delamination blocks or limits pilot's vision.

4. Refer to Figure 1 for windshield critical areas, semi-critical areas, non-critical areas, and wiper path. Keep in mind that small blemishes in the windshield are magnified when using night vision goggles. Therefore, if there is any question about serviceability, replace the windshield and/or glass side windows.
GLASS WINDSHIELDS – continued

Figure 1. Windshield Criteria

PLASTIC WINDOWS

1. Inspect the crown windows (2 each), nose bubble windows (2 each), lower fixed windows (2 each), escape hatch window, cabin door window, and cabin windows (8 each), for cracks, crazing, nicks, dents, scratches, blemishes, and discolorations in semi-critical areas, and non-critical areas. If defects block or limit pilot's vision, replace window. Escape hatch windows and cabin windows are non-critical.
PLASTIC WINDOWS - continued

2. Refer to Figure 2, Sheets 1 and 2 for window locations and critical and semi-critical areas. Keep in mind that small blemishes in the window are magnified when using night vision goggles. Therefore, if there is any question about serviceability, replace the window.

**NOTE**

Window discoloration will appear as a light brown or gold colored area.

![Diagram of window criteria]

**NOTES**

1. Semi-Critical Area
2. Critical Area

Figure 2. Window Criteria (Sheet 1 of 2)
REPAIR OF PLASTIC WINDOWS

NOTE
For purposes of this DMWR, repair procedures for plastic windows as prescribed in TM 1-1500-204-23 will not be used unless authorized by the Contracting Officer. However, IAW MEO A2388 dtd 28 July 2004, EZClear Polishing System may be used to repair plastic windows in place of the following procedure.

1. Mask areas adjacent to repair area to protect from damage. Use masking tape (Item 175, WP 0157 00).

WARNING

EYE INJURY

2. Wrap abrasive paper (Item 11, WP 0157 00) around rubber block.
REPAIR OF PLASTIC WINDOWS - continued

**CAUTION**

Surface to be repaired must be covered with water at all times to prevent further damage.

3. Sand the surface to be repaired. Use abrasive paper (Item 11, WP 0157 00) wet with water.

4. Using a finer grit abrasive paper (Item 11 thru Item 15, WP 0157 00), repeat step 3 until scratches are removed.

5. Flush repaired surface with water to remove loose foreign matter.

**CAUTION**

Machine polishing of critical optical areas by a qualified operator is mandatory. Only semi-critical and non-critical areas can be polished by hand. Use rouge (Item 152, WP 0157 00) applied with a water-moistened cotton flannel cloth (Item 77, WP 0157 00).

6. Polish sanded surface, using a stitched buffing wheel mounted in a portable disk sander and buffing compound (Item 53, WP 0157 00).

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
SPOT WELDED PARTS REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Rubber Block
Stitched Buffing Wheel
Portable Disk Sander

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
SAE-AMS-W-6858

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair of defective and damaged spot welded parts.

REPAIR

Table 1. Repair of Defective Spot Weld – Defect Exceeds Allowable Percentage (Refer to Table 3 for Allowable Percentage)

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NOTES

A. All dimensions are in inches.
B. For three sheet combination or more, the thickness shown shall be that of thickest outer sheet.
C. For information on countersinking and dimpling, refer to TM 1-1500-204-23.
D. All rivets, minimum 2D edge distance. Rivets larger than those specified can be used provided minimum 2D edge distance is maintained.
E. Diameter of drill should be large enough to completely remove defect.
NOTES

A. All dimensions are in inches.
B. Edge distance is measured from center of spot weld to the edge of sheet.
C. Spacing is measured from center-to-center of spot weld in any direction.

Figure 1. Spot Welded Parts (Sheet 1 of 4)

Table 2. Spot Welded Parts – Minimum Edge Distance and Spacing

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<th>MAGNESIUM</th>
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<td>0.080 - 0.081</td>
<td>0.41</td>
<td>0.56</td>
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<td>0.090 - 0.091</td>
<td>0.44</td>
<td>0.62</td>
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<td>0.100</td>
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<td>0.102</td>
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<tr>
<td>0.125</td>
<td>0.50</td>
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</table>
### Table 3. Repair of Defective Spot Welds - Allowable Percentage of Defective Spot Weld

<table>
<thead>
<tr>
<th>NATURE OF DEFECT</th>
<th>MATERIAL</th>
<th>CONDITION I</th>
<th></th>
<th>CONDITION II</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>ACCEPTABLE WITHOUT REPAIR</td>
<td>ACCEPTABLE WITH REPAIR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MAXIMUM</td>
<td>MAXIMUM ADJACENT</td>
<td>MAXIMUM</td>
<td>MAXIMUM ADJACENT</td>
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<tr>
<td></td>
<td>MATERIAL</td>
<td>CRES</td>
<td>AL</td>
<td>CRES</td>
<td>AL</td>
</tr>
<tr>
<td>CLASS OF WELD</td>
<td></td>
<td>A</td>
<td>A</td>
<td>B</td>
<td>A</td>
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<tr>
<td>NATURE OF DEFECT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Cracks open to surface</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B. Edge Bulge Cracks</td>
<td></td>
<td>0</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C. Sheet separation exceeding established limits</td>
<td></td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>2</td>
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<tr>
<td>D. Blow Spots</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E. Pits over 0.0625–inch dia</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>F. Pits less than 0.0625-inch dia, refer to Note D</td>
<td></td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>G. Metal expulsion between sheets (spits)</td>
<td></td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>H. Surface flashes and/or Tip pick-up</td>
<td></td>
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<td>2</td>
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<td>2</td>
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<tr>
<td>I. Excessive indentation – Refer to Note E</td>
<td></td>
<td>5</td>
<td>5</td>
<td>10</td>
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<tr>
<td>J. Missing spot welds</td>
<td></td>
<td>0</td>
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<tr>
<td>K. Broken spot welds (sheet not damaged)</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL PERCENTAGE</td>
<td></td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>-</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.

B. Refer to MIL-W-6858 for classification of spot weld.

C. The allowable number of defective spot welds is given in percentage of total number of welds in a specific joint.

D. Class A welded joints are those whose failure could cause direct loss of helicopter or its control, a major component, or injury to personnel. Class B welded joints are those not included in class A.

E. When the number of defective spot welds less than 0.625-inch diameter exceeds three percent, but does not exceed six percent of defective spot welds, all defective spot welds must be repaired.

F. Excessive indentation is any electrode indentation that exceeds 10 percent but does not exceed 20 percent of the thickness of the thinnest sheet. Depth is limited to 0.004-inch in any area where aerodynamics may be influenced by excessive indentations.

G. Refer to Table 1 for repair of defective spot welds exceeding allowable percentages.
REPAIR - continued

Repair Parts

1. Reinforcement: Original material, next heavier thickness.
2. Replacement: Same material and thickness as original.

NOTES

A. All dimensions are in inches.
B. Refer to Table 2 for edge distance and spacing of spot welds.
C. All spot welding of aluminum alloys to be accomplished within 24 hours after cleaning.
D. A maximum of three repairs may be made to each assembly. Maximum hole diameter 1.50-inches.
E. Use two spot welds to attach replacement (Item 2) of 0.50-inch diameter or greater. Refer to Note B.
F. Damaged areas having a cutout diameter of 0.187-inch or less may be repaired by inserting a MS20470, MS20615M, MS20426 or a MS20427 rivet of the proper alloy.

Figure 1. Spot Welded Parts (Sheet 2 of 4)
Repair Parts

1. Reinforcement: Original material, next heavier thickness, dimensions as required.
2. Replacement: Same material and thickness as original; dimensions as required - clearance between patch and cutout to be 0.031-inch max.

NOTES

A. All dimensions are in inches.
B. Refer to Table 2 for edge distance and spacing of spot welds.
C. All spot welding of aluminum alloys to be accomplished within 24 hours after cleaning.
D. A maximum of three repairs may be made to each assembly. Maximum hole diameter 1.5-inches.
E. Use two spot welds to attach replacement (Item 2) 0.5-inch diameter or greater.
F. Damaged areas having a cutout diameter of 0.187-inch or less may be repaired by inserting a MS20470, MS20615M, MS20426 or a MS20427 rivet of the proper alloy.

Figure 1. Spot Welded Parts (Sheet 3 of 4)
REPAIR - continued

NOTES

A. All dimensions are in inches.
B. For information on allowable number of defective spot welds, and rivet diameter, refer to Table 1 and Table 3.
C. Defective spot welds at the beginning and end of a row should be replaced with rivets.
D. These repairs are not applicable where an end connection, in Class A welding with two or more members, contains more than one spot weld, but less than five spot welds.
E. The examples of structure, as shown, containing one or more parts to a joint, are associated with Class A welding. Class B welding is associated with a single part of joint.
F. Refer to Table 3 for typical acceptable limits for spot welds.
G. Two additional spot welds are desired, but where conditions prevent adding two, one additional spot weld is acceptable.
H. Spot welding of aluminum alloys should be accomplished within 24 hours after cleaning.

Figure 1. Spot Welded Parts (Sheet 4 of 4)

END OF WORK PACKAGE

0092 00-7/(8 blank)
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
HINGE REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Rubber Block
Stitched Buffing Wheel
Portable Disk Sander

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repairs for the various hinges installed on the CH-47 Helicopter.

REPAIR OF HINGES

1. Repair hinges by removing segments or barrels. Determine maximum allowable damage prior to beginning repair. Refer to Table 1 for hinge part number, material, and type of repair.

2. Replace entire hinge assembly if damage exceeds allowable limit.
REPAIR OF HINGES - continued

1. End of hinge may have two barrels failed provided:
   a. The next two barrels are undamaged.
   b. Each undamaged segment has at least two attachment rivets on each side.

2. Any four consecutive inner barrels (away from hinge end) may be failed provided:
   a. Two adjacent barrels on each end of the failed section are undamaged.
   b. Each undamaged segment has at least two attachment rivets on each side.

NOTES
A. All dimensions are in inches.
B. Remove all burrs and sharp edges and any distorted section that may cause subsequent damage.
C. Shaded areas may be completely missing.
D. Refer to Table 1 for specific applications.

Figure 1. Type A Installation
REPAIR OF HINGES - continued

DAMAGE CRITERIA, TYPE B – ALLOWABLE CONDITIONS

1. Each end must have two undamaged barrels with two attachment rivets on each side.
2. Any four consecutive inner barrels (away from hinge end) may be failed provided:
   a. Two adjacent barrels on each end of the failed section are undamaged.
   b. Each undamaged segment has at least two attachment rivets on each side.

NOTES

A. All dimensions are in inches.
B. Remove all burrs and sharp edges and any distorted section that may cause subsequent damage.
C. Shaded areas may be completely missing.
D. Refer to Table 1 for specific applications.

Figure 2. Type B Installation
### Table 1. Hinge Repairs

<table>
<thead>
<tr>
<th>HINGE PART NO.</th>
<th>NOMENCLATURE</th>
<th>MATERIAL</th>
<th>TYPE OF INSTALLATION AND REPAIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>114S3607-79</td>
<td>Leaf-butt hinge-drip tray-aft xmsn</td>
<td>MS20001</td>
<td>A</td>
</tr>
<tr>
<td>114S2609-11</td>
<td>Hinge, asst-step-cabin-side</td>
<td>MS20001</td>
<td>F</td>
</tr>
<tr>
<td>114S1632-21</td>
<td>Leaf, butt hinge-door access-nose</td>
<td>MS20001PH4</td>
<td>A</td>
</tr>
<tr>
<td>114S1901-81</td>
<td>Hinge, fairing-fwd pylon</td>
<td>MS20001PH6</td>
<td>B</td>
</tr>
<tr>
<td>114S5901-71</td>
<td>Leaf, butt hinge-fwd pod sta 245</td>
<td>MS20001PH6</td>
<td>A</td>
</tr>
<tr>
<td>114S6107-43</td>
<td>Hinge, ramp sta 99</td>
<td>MS20001PH9</td>
<td>A</td>
</tr>
<tr>
<td>145S6102-5</td>
<td>Hinge, ramp sta 99</td>
<td>VS90560</td>
<td>A</td>
</tr>
<tr>
<td>114S5910-35</td>
<td>Hinge, half-fairing asst-aft</td>
<td>MS20001PH10</td>
<td>C</td>
</tr>
<tr>
<td>114S6701-31</td>
<td>Leaf, butt hinge-aft pod</td>
<td>MS20001PX12</td>
<td>C</td>
</tr>
<tr>
<td>114S6701-32</td>
<td>Leaf, butt hinge-former-ramp sta 99</td>
<td>MS20001PX12</td>
<td>C</td>
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<td>114S6701-33</td>
<td>Leaf, butt hinge-former-ramp sta 99</td>
<td>MS20001PX14</td>
<td>C</td>
</tr>
<tr>
<td>114S3904-19</td>
<td>Hinge, door access</td>
<td>VS20101-1-2</td>
<td>C</td>
</tr>
<tr>
<td>114S3903-15</td>
<td>Leaf, butt hinge-access door-xmsn</td>
<td>VS20101-1-2</td>
<td>C</td>
</tr>
<tr>
<td>114S3903-17</td>
<td>Leaf, butt hinge-access door-xmsn</td>
<td>VS20101-1-2</td>
<td>C</td>
</tr>
<tr>
<td>114S5907-65</td>
<td>Leaf, butt hinge-aft pod-sta 482</td>
<td>VS20101-1-2</td>
<td>C</td>
</tr>
<tr>
<td>114S5907-63</td>
<td>Hinge, half-aft pod-sta 482</td>
<td>VS20101-1-2</td>
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<tr>
<td>114S3904-17</td>
<td>Hinge, door-access-482 to sta 534</td>
<td>VS20101-1-2</td>
<td>C</td>
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<tr>
<td>114S3905-35</td>
<td>Hinge, half-access door-hyd. test</td>
<td>VS20101-1-4</td>
<td>G</td>
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<td>114S1853-15</td>
<td>Hinge, asst-upper-cabin door</td>
<td>VS60904</td>
<td>D</td>
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<tr>
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<td>Hinge, asst-upper-cabin door</td>
<td>VS60904</td>
<td>C</td>
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<td>114S2850-1</td>
<td>Hinge, asst-elect. pod compartment</td>
<td>VS60904</td>
<td>D</td>
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<td>114S2506-69</td>
<td>Hinge, structural-bottom cabin-sta 180 to sta 440</td>
<td>VS90522</td>
<td>H</td>
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<tr>
<td>114S6604-21</td>
<td>Hinge, pad-cargo loading ramp-aux</td>
<td>VS90565-2014T6</td>
<td>E</td>
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<tr>
<td>114P8012-1</td>
<td>Hinge, half-cowl-eng</td>
<td>AL ALY 356T6</td>
<td>D</td>
</tr>
<tr>
<td>114P8013-2</td>
<td>Hinge, half-cowl-eng</td>
<td>AL ALY 356T6</td>
<td>D</td>
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<tr>
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<td>MIL-T-9046 Class II casting</td>
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<tr>
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<td>Invest casting</td>
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</tr>
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<td>SST casting 17-4PH</td>
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<tr>
<td>114S2610-35</td>
<td>Hinge, half-cowl</td>
<td>MS20001 PY4-400</td>
<td>C</td>
</tr>
<tr>
<td>114S3615-9</td>
<td>Hinge, panel asst-apu</td>
<td>MS20001PY4</td>
<td>CA</td>
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<td>114S5612-12</td>
<td>Hinge, step-foldout-pod</td>
<td>MS00001H8-940</td>
<td>A</td>
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<td>114S5612-19</td>
<td>Hinge, step-foldout-pod</td>
<td>MS00001H8-940</td>
<td>A</td>
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<tr>
<td>114S5901-65</td>
<td>Hinge, access panel instl-fwd sta 245</td>
<td>MS20001PH6</td>
<td>A</td>
</tr>
<tr>
<td>114S5901-66</td>
<td>Hinge, access panel instl-fwd sta 245</td>
<td>MS20001PH6</td>
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<tr>
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<td>Hinge, access panel instl-fwd sta 245</td>
<td>MS20001PH6</td>
<td>A</td>
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</table>
Table 1. Hinge Repairs - continued

<table>
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<tr>
<th>HINGE PART NO.</th>
<th>NOMENCLATURE</th>
<th>MATERIAL</th>
<th>TYPE OF INSTALLATION AND REPAIR</th>
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<td>114S5901-129</td>
<td>Hinge, access panel instl-fwd sta 245</td>
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<td>114S5901-130</td>
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<tr>
<td>114S5901-19</td>
<td>Hinge, pnl, instr. ext pwr recep-sta 160 to sta 180</td>
<td>VS20101-2-2</td>
<td>C</td>
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<td>VS20101-2-2</td>
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<tr>
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<td>Hinge, access pnl, instl pod-sta 438 to sta 460</td>
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<td>VS20102-1</td>
<td>B</td>
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<td>114S6710-3</td>
<td>Hinge, cargo loading ramp aux</td>
<td>VS20103-3</td>
<td>B</td>
</tr>
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<td>114S1632-33</td>
<td>Hinge, door assy-nose compartment</td>
<td>VS90527</td>
<td>B</td>
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<tr>
<td>114S4901-39</td>
<td>Hinge, leading edge fairing assembly</td>
<td>MS20001PH6</td>
<td>B</td>
</tr>
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<tr>
<td>114S4101-37</td>
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<td>114S4101-38</td>
<td>Hinge, aft pylon former sta 482</td>
<td>MS20001PH6</td>
<td>B</td>
</tr>
</tbody>
</table>

DAMAGE CRITERIA - ALLOWABLE CONDITIONS

A. Type A installation.
   1. End of hinge may have two barrels failed provided:
      a. The next two barrels are undamaged.
      b. Each undamaged segment has at least two attachment rivets on each side of the hinge.
   2. Any four consecutive inner barrels (away from hinge end) may be failed provided:
      a. Two adjacent barrels on each end of the failed section are undamaged.
      b. Each undamaged segment has at least two attachment rivets on each side.

B. Type B installation.
   1. Each end must have two undamaged barrels with two attachment rivets on each side.
   2. Any four consecutive inner barrels (away from hinge end) may be failed provided:
      a. Two adjacent barrels on each end of the failed section are undamaged.
      b. Each undamaged segment has at least two attachment rivets on each side.

C. Type C installation - Non-continuous hinge. Replace hinge if either end has one full failed barrel.

D. Type D installation - Single connection hinge. Replace if failed.

E. Type E installation - Stress critical. Replace if any barrel has failed.
DAMAGE CRITERIA - ALLOWABLE CONDITIONS - continued

F. Type F installation - Spring type. Replace if more than two end barrels or one barrel adjacent to spring has failed.

G. Type G installation - Multiple section continuous hinge. Replace if more than one whole section of barrels has failed.

H. The following lug removal criteria apply:
   1. Between sta 180 and sta 374, a maximum of three successive lugs may be removed if a minimum of four undamaged lugs remains on each side of damaged lugs.
   2. Between sta 375 and sta 400, a maximum of four successive lugs may be removed if a minimum of seven undamaged lugs remains on each side of damaged lugs.
   3. Between sta 400 and sta 441, a maximum of three successive lugs may be removed if lugs adjacent to pod formers at sta’s 400, 413, 425, 438, and 441 remain undamaged.

END OF WORK PACKAGE
# DEPOT MAINTENANCE WORK REQUIREMENT
## CH-47D HELICOPTER
### STRUCTURAL ALUMINUM TUBE REPAIRS

## INITIAL SETUP

<table>
<thead>
<tr>
<th>Test Equipment:</th>
<th>As Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools and Special Tools:</td>
<td>As Required</td>
</tr>
<tr>
<td>Material/Parts:</td>
<td>As Required</td>
</tr>
<tr>
<td>Personnel Required:</td>
<td>As Required</td>
</tr>
</tbody>
</table>

## References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series

## Equipment Conditions:
- As Required

## Special Environmental Condition:
- As Required

## SCOPE

This work package contains repair procedures for structural aluminum tubing.

### ALUMINUM TUBING REPAIRS

Repair aluminum tubing as shown in Figure 1. Refer to Table 1 for material and rivet specifications.
ALUMINUM TUBING REPAIRS - continued

Repair Parts
Item No
1. Original material
2. Replacement tube
3. Sleeve

NOTES
A. All dimensions are in inches.
B. All rivets are 3D pitch.
C. Total number of rivets required - 18 each. Nine on each side of sleeve centerline.
D. Form shop heads by hammering lightly. Shop heads to be approximate height of manufactured head.
E. Use same type material as original for replacement tube and sleeve.
F. Repair is applicable to structure tubing only.

Figure 1. Structural Aluminum Tube Repairs
ALUMINUM TUBING REPAIRS - continued

Table 1. Aluminum Tubing Repair Dimensions

<table>
<thead>
<tr>
<th>TUBE (Items 1 and 2)</th>
<th>SLEEVE (Item 3)</th>
<th>RIVET TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA</td>
<td>WALL</td>
<td>DIA</td>
</tr>
<tr>
<td>0.50</td>
<td>0.035</td>
<td>0.625</td>
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<td>0.75</td>
<td>0.065</td>
<td>0.875</td>
</tr>
<tr>
<td>0.875</td>
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</tr>
<tr>
<td>1.0</td>
<td>0.065</td>
<td>1.125</td>
</tr>
<tr>
<td>1.25</td>
<td>0.065</td>
<td>1.25</td>
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<td>1.875</td>
<td>0.058</td>
<td>2.0</td>
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</table>

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
RUBBER SEAL REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0074 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers the various rubber seal materials and methods of repair. For the purpose of this DMWR, only minor damage will be considered for repair. Replace the seal if damage exceeds minor limits.

RUBBER SEAL REPAIR

Repair damaged seals as depicted in Figure 1, Sheet 1 of 4. The type of cement required depends on the composition of the seal material. Refer to WP 0074 00 for selection of appropriate adhesive. Damage to seals consisting of one or more integral parts, such as retainers or cloth covers, will be impractical to repair in most cases and the seal should be replaced.
Repair Parts

1. Insert. Section of original type seal.
2. Splice. Rubber sheet of same composition as seal. Tube may be substituted if of proper diameter or split to fit.
3. Splice alternate. Sponge rubber of same composition as seal, may be used when no other material is available.
4. Film. Clear plastic to restore moisture protection on sponge seals with facings.

NOTES

A. All dimensions are in inches.
B. Peel damaged area from structure. Nest section of original type seal with damaged area. Cut out damaged area and through section of original material on 45 degrees angle to obtain maximum faying surface.
C. Install a splice, and center as shown. All faying surfaces to be coated with the applicable adhesive. Refer to WP 0074 00 for information on adhesive selection. Repair shown is applicable to hollow seals only.
D. Seals shown on subsequent sheets, without a material symbol, are made of silicone rubber.

Figure 1. Rubber Seal Repairs (Sheet 1 of 4)
RUBBER SEAL REPAIR – continued

Figure 1. Rubber Seal Repairs (Sheet 2 of 4)
RUBBER SEAL REPAIR – continued

VS80561
VS80536
VS80549
VS80540
VS80572-1
BAC1530-9
VS80556
BAC1530-13
VS80551
VS80555
VS80569
VSH0570-2
VSH0570-1
VS80547-5

○ SPONGE SILICONE RUBBER
g BLACK SILICONE RUBBER
g BLACK NEOPRENE RUBBER
■ GRAY NEOPRENE RUBBER
△ BUNA-N RUBBER
● MISCELLANEOUS USE
○ GENERAL-PURPOSE CEMENT

INCHES

Figure 1. Rubber Seal Repairs (Sheet 3 of 4)
RUBBER SEAL REPAIR – continued

VS80555

VS80546

VS80520

VS80524

VS80529

VS80502-1

VS80508

VS80507-1

VS80548

VS80543

VS80573

VS80542

VS80533

VS80511

VS80550-1

VS8050-1

VS80567-1

VS80552

VS80561

VS80541

VS80515

BAC1530-38

VS80535

VS80545

VS80532

VS80557

VS80562

VS80560

Figure 1. Rubber Seal Repairs (Sheet 4 of 4)

END OF WORK PACKAGE
## DEPOT MAINTENANCE WORK REQUIREMENT

**CH-47D HELICOPTER**

**CANVAS AND WEBBING REPAIRS**

### INITIAL SETUP

**Test Equipment:**
As Required

**Tools and Special Tools:**
As Required

**Material/Parts:**
Thread (Item 185, WP 0157 00)

**Personnel Required:**
As Required

### CANVAS AND WEBBING REPAIR

Repair canvas and webbing as shown in Figure 1.

### References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- ASTM-D-6193
- WP 0157 00

### Equipment Conditions:
As Required

### Special Environmental Condition:
As Required
CANVAS AND WEB REPAIR

Holes or worn areas less than 0.50

Circle darn. Notes C and E. No reinforcement patch required.

Holes or tears 0.500 to 0.750 diameter or length

Reinforcement patch. Same material and weight as original. Locate on underside of hole or tear before darning.

Zig-zag or circular darn. Notes C and E.

Tears less than 0.50 long

Zig-zag darn. Notes C and E. No reinforcement patch required.

Figure 1. Canvas and Webbing Repair (Sheet 1 of 2)
CANVAS AND WEBBING REPAIR – continued

REPAIR FOR HOLES AND TEARS EXCEEDING 0.750 DIAMETER IN CANVAS

STITCHING MIN 2 ROWS, ROW DISTANCE 0.375 TO 0.500 NOTES C AND E

ZIG-ZAG DARN, HOLE-TYPE DAMAGE MAY BE CUT AWAY AFTER PATCH IS ATTACHED

MAX 0.125 AND PARALLEL TO EDGE OF PART BEING REPAIRED

REINFORCEMENT PATCH. SAME MATERIAL AND WEIGHT AS ORIGINAL. LOCATE ON EITHER SIDE OF PART BEING REPAIRED.

MIN 2.0 BEFORE TUCKING EDGES OF PATCH UNDER

REPLACEMENT OF WEB-STRAP HARDWARE

STITCHING, START STITCH HERE AND CONTINUE SEWING IN DIRECTION OF ARROWS, ROW DISTANCE 0.375, NOTES C AND E

INSERT NOTE D

HARDWARE NOTE B

ORIGINAL WEB-STRAP

NOTES

A. All dimensions are in inches.
B. Use same part number hardware as original.
C. Stitching to be in accordance with ASTM-D-6193, five to eight stitches per inch depending upon weight of material. Use fewer stitches per inch for material heavier than original.
D. Insert to be same material and weight as original.
E. Use thread (Item 185, WP 0157 00). Color to match color of original.

Figure 1. Canvas and Webbing Repair (Sheet 2 of 2)

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
NOSE EXTERIOR REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Walkway Material (Item 193, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0053 00
WP 0078 00
WP 0080 00
WP 0081 00
WP 0083 00
WP 0086 00
WP 0087 00
WP 0093 00
WP 0094 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package details repair procedures for the following helicopter exterior nose section components. Refer to Figure 1.

1. Upper and Lower Cabin Doors
2. Forward Transmission Fairing
3. Barrier Panel
4. Work Platforms
5. Escape Hatch
6. Pilot and Copilot Doors
7. Forward Weather Protective Cover (Rain Shield)
8. Nose Door
Figure 1. Exterior Nose Section
NOTE

Refer to Table 1 for index number reference.

Figure 2. Upper and Lower Cabin Door (Sheet 1 of 2)
DRILL 0.1990 DIAMETER (NO. 8) HOLE IN PLY WOOD PAD AND INSTALL SCREW AN520-10R30, NUT MS20364-1032 WASHER AN960D10 (1 UNDER HEAD AND 1 UNDER NUT) (TYPICAL 13 PLACES)

MAINTAIN 0.42 MINIMUM EDGE DISTANCE

END OF NEW ANGLE

NEW ANGLE

PLYWOOD PAD

GUSSET

EXISTING ANGLE

RIVET MS20426AD4 (TYPICAL)

RIVET MS20470AD4 (TYPICAL)

VIEW B-B

SECTION A-A

TRIM EDGE OF GUSSET AS SHOWN (TYPICAL BOTH ENDS OF STEP)

1.55

0.25

0.18R

1.19

0.85

9.00

0.85

1.19

END OF NEW ANGLE

Figure 2. Upper and Lower Cabin Door (Sheet 2 of 2)
Table 1. Upper And Lower Cabin Doors

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seal</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Outer Skin</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Inner Skin</td>
<td>0.032 2024-T4</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Seal</td>
<td>Note C</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Seal Filler</td>
<td>Note D</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Pane</td>
<td>Note E</td>
<td>--</td>
<td>0091 00</td>
</tr>
<tr>
<td>7</td>
<td>Seal Filler</td>
<td>Note G</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Seal</td>
<td>Note F</td>
<td>--</td>
<td>--</td>
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<td>9</td>
<td>Seal</td>
<td>Note H</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Outer Skin</td>
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<td>0.025 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Inner Skin</td>
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<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Step</td>
<td>Note I</td>
<td>--</td>
<td>0083 00</td>
</tr>
<tr>
<td>13</td>
<td>Gusset</td>
<td>0.040 2024 T4 clad</td>
<td>0.050 2024 T3 Clad</td>
<td>0087 00</td>
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<tr>
<td>14</td>
<td>Angle</td>
<td>ALCOA 22509 7075-T6</td>
<td>--</td>
<td>0088 00</td>
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<tr>
<td>15</td>
<td>Seal</td>
<td>Note J</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>16</td>
<td>Zee</td>
<td>0.050 2024-T4</td>
<td>0.063 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with new seal, 114S1621-9.
C. Replace with new seal, 114S1621-5.
D. Replace with new seal filler, 114S1621-7.
E. The windowpane is made of 0.080-inch thick acrylic sheet, MIL-P-25690.
F. Replace with new seal, 114S2901-16.
G. Replace with new seal filler, 114S2901-15.
H. Replace with new seal, 114S1621-11.
I. The step assembly is a sandwich honeycomb structure. The top skin is 0.020-inch 2024-T4 clad aluminum alloy. The core is 0.540-inch, 4.3-1/4-20NP-3003 aluminum honeycomb. The bottom skin is 0.016-inch 7075-T6 clad aluminum alloy.
J. Replace with new seal, 114S1620-43.
NOTE

Refer to Table 2 for index number reference.

Figure 3. Forward Transmission Fairing (Sheet 1 of 2)
REPAIRS – continued

Figure 3. Forward Transmission Fairing (Sheet 2 of 2)
### Table 2. Forward Transmission Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Splice</td>
<td>0.080 7075-T6 Bare</td>
<td>0.090 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.080 7075-T6 Clad</td>
<td>0.090 7075-T6 Clad</td>
<td>Note C, 0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Tee</td>
<td>ALCOA 22981 7075-T6</td>
<td>0.025 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
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<tr>
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<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>Note C, 0087 00</td>
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<td>Former Stiffener</td>
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<td>0.032 2024-T3 Clad</td>
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<td>Stiffener</td>
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<tr>
<td>7</td>
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<td>8</td>
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<td>2-Ply Glass Cloth</td>
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<tr>
<td>9</td>
<td>Channel</td>
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<td>Note C, 0087 00</td>
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<tr>
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<td></td>
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<td>0.063 2024-T3 Clad</td>
<td>Note C, 0087 00</td>
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<tr>
<td>11</td>
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<td>0.025 2024-T3 Clad</td>
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<tr>
<td>12</td>
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<td>0087 00</td>
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<tr>
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<td>Former</td>
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<td>0087 00</td>
</tr>
<tr>
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<td></td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>Note C, 0087 00</td>
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<tr>
<td>14</td>
<td>Stiffener</td>
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<td>0.032 2024-T3 Clad</td>
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</tr>
<tr>
<td></td>
<td>Tee</td>
<td>BAC23760, 7075-T6</td>
<td>0.024 4130</td>
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<tr>
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<td>Extrusion</td>
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<tr>
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<td></td>
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<td>0.050 2024-T3 Clad</td>
<td>Note C, 0087 00</td>
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<tr>
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<td>Tee</td>
<td>BAC 0505-23760</td>
<td>0.040 7075-0</td>
<td>Note C, 0087 00</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.

B. The skin is laminated polyester No. 181 impregnated glass cloth MIL-P-8013, Type I, reinforced with 60 ends, 830 glass cloth roving, impregnated with resin in accordance with MIL-R-7575.

C. This part is used on aircraft serial numbers Serial Numbers 92-0367 and 92-0368.
NOTE

Refer to Table 3 for index number reference.

Figure 4. Barrier Panel
### Table 3. Barrier Panel

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seal</td>
<td>VS80872-2</td>
<td>Note B</td>
<td>0095 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Cover</td>
<td>0.032 2024-T3 Clad</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Web</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Web</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Cover</td>
<td>0.080 &amp; 9049.5 Kydex</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
</tbody>
</table>

#### NOTES
A. All dimensions are in inches.
B. Replace with same material as original.

#### NOTE
Refer to Table 4 for index number reference.

---

![Figure 5. Work Platforms (Sheet 1 of 2)](image)
NOTE
FOR AIRCRAFT SERIAL NUMBERS 92-0367 AND 92-0368

NOTE
SCREW MS24694S51
NUT NAS1330S3K116
(TYPICAL 2 PLACES)

NOTE
114S1903-79 LEFT HAND
114S1903-80 RIGHT HAND

NOTE
114S1903-91
114S1903-82

NOTE
114S1903-83
BRACKET
114S1903-83
SHIM 114S1903-77

NOTE
0.28 INCH TYPICAL
NOTE
0.72 INCH TYPICAL
NOTE
SCREW AN509-10R9

VIEW C-C

VIEW B-B

Figure 5. Work Platforms (Sheet 2 of 2)
### Table 4. Work Platforms

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Spoiler Angle</td>
<td>0.050 2024-T3 Clad</td>
<td>Note H</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Core Lower</td>
<td>0.750 BMS4-4, 4-15N Form B</td>
<td>Note J</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Core Insert</td>
<td>0.710 BMS4-4, 3-2 ON, Form B</td>
<td>Notes B &amp; J</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Skin</td>
<td>Pre-impregnated Glass Fiber</td>
<td>Note D or Note G &amp; Note J</td>
<td>0081 00</td>
</tr>
<tr>
<td>5</td>
<td>Core</td>
<td>0.0710,5.4-3/16-20N5052</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>Core Upper</td>
<td>0.750 BMS4-4, 4-10N Form B</td>
<td>Notes B &amp; J</td>
<td>0083 00</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Screen</td>
<td>0.041 Dia Cloth 0.50 X 0.50 Mesh 316 Stainless Steel</td>
<td>Note I</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Skin</td>
<td>Pre-impregnated Glass Fiber</td>
<td>Note D or Note E &amp; Note J</td>
<td>0081 00</td>
</tr>
<tr>
<td>8</td>
<td>Hinge</td>
<td>MS20001PH6</td>
<td>Note C</td>
<td>0093 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.

B. The platform area is of sandwich honeycomb.

C. Machine to configuration of original damaged section.

D. Laminated: consisting of one continuous layer of BP407-120A next to the core, two plies of BP407-181A and two plies of BP407-120A in the upper area, and one continuous ply of BP407-120A on the outside of the lay-up.

E. Laminated: consisting of two plies of BMS8-79, Type 1581 or 7781 in lower area and three plies of BMS8-79, Type 120 in upper area including one ply of continuous BMS8-79, Type 120 next to core and one ply of continuous BMS8-79 Type 120 on outside of lay-up.

F. Apply walkway material (Item 193, WP 0157 00), as directed in WP 0078 00, following repairs to this area or as required by wear.

G. Laminated: consisting of two plies of BMS-79, Type 1581 or 7781 in lower area and three plies of BMS8-79, Type 120 in upper area including one ply of continuous BMS8-79, Type 120 on outside of lay-up plus one ply of spun nylon fabric scoured and heat set (Style SN52).

H. Replace with new spoiler angle, 114S1981-1 LH or -2 RH.

I. Replace with material similar to original.

J. This material is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE
Refer to Table 4 for index number reference.

Figure 6. Escape Hatch
### Table 5. LH and RH Escape Hatch

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seal</td>
<td>Note D</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Skin</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Seal</td>
<td>Note C</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Windowpane</td>
<td>Note B</td>
<td>--</td>
<td>0091 00</td>
</tr>
<tr>
<td>5</td>
<td>Seal Filler</td>
<td>Note F</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Pan</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Seal Filler</td>
<td>Note E</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Doubler</td>
<td>0.050 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. The windowpane is made of 0.080-inch thick acrylic sheet, MIL-P-25690.
C. Replace with new seal, 114S2904-044.
D. Replace with new seal, 114S1619-21.
E. Replace with new seal filler, 114S1619-23.
F. Replace with new seal filler, 114S2901-05.

### NOTE

Refer to Table 6 for index number reference.
Table 6. Pilot and Copilot Doors

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Outer Skin</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Inner Pan</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Doubler</td>
<td>0.020 2024-T4 Clad</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Seal</td>
<td>0.125 Syn Rubber Sheet</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Pane</td>
<td>0.150 Acrylic Plastic</td>
<td>Note E</td>
<td>0091 00</td>
</tr>
<tr>
<td>6</td>
<td>Pane</td>
<td>0.150 Acrylic Plastic</td>
<td>Note E</td>
<td>0091 00</td>
</tr>
<tr>
<td>7</td>
<td>Pane</td>
<td>0.187 Acrylic Plastic</td>
<td>Note E</td>
<td>0091 00</td>
</tr>
<tr>
<td>8</td>
<td>Seal</td>
<td>Molded Silicon Rubber</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Frame</td>
<td>Aluminum Alloy Casting</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Seal</td>
<td>0.090 Silicone Rubber Sponge</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Support</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Damage to doublers necessitates replacement of damaged portion with same material as original.
C. Replace with new seal, same as original.
D. Replace with new seal, 114S5668-1 or -2.
E. Refer to WP 0091 00 for repair and refinishing of pane assemblies.
F. Replace with new part, same as original.
G. The LH door is shown. Repair materials and referenced repair figures are same for RH door.
NOTE

Refer to Table 7 for index number reference.

Figure 8. Forward Weather Protective Cover (Sheet 1 of 3)
REPAIRS – continued

NOTES
A. All dimensions are in inches.
B. Remove attaching hardware. Use heat 200 degrees F to 250 degrees F (93 degrees C to 121 degrees C) to remove damaged stiffener. Bond new stiffeners, 114R6057-3, to cover, using scrim cloth (Item 155, WP 0157 00) and adhesive (Item 24, WP 0157 00). Install attaching hardware after adhesive has cured.
C. Torque nuts from 18 to 20 inch-lbs above friction torque.

Figure 8. Forward Weather Protective Cover (Sheet 2 of 3)
Table 7. Forward Weather Protective Cover

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cover</td>
<td>Note C</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>0.090 2024-T3 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Boot Assy</td>
<td>--</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Ring</td>
<td>0.063 6061-T6 Clad</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Stiffener</td>
<td>0.032 6061-T4</td>
<td>Note B</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.

B. No cracks allowed. Fabricate replacement part from 0.190-inch thick corrosion resistant steel; Condition A, Annealed, MIL-S-25043. If corrosion resistant steel is not available, use original material as alternate.

C. The core of the cover is 0.50-inch thick expanded perforated honeycomb MIL-L-7438, 3-3¼- ISN (50-52). Replace damaged sections with section corresponding to the original. The skin over core and remainder of cover are laminates of impregnated glass cloth, (Item 78, WP 0157 00).

D. If repair not feasible, replace with boot assembly, 114R6055-1.

E. Replace with new ring.

NOTE

Refer to Table 8 for index number reference.
REPAIRS – continued

Table 8. Forward Weather Protective Cover

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cover</td>
<td>Pre-Preg Glass Fabric Type 1581 or 7781</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Collar</td>
<td>Nema Grade G-10 Laminate</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Ring Assy</td>
<td>BMA8-79 Glass Fiber Pre-Preg Type 1581 or 7781</td>
<td>Note D</td>
<td>0081 00</td>
</tr>
<tr>
<td>4</td>
<td>Core</td>
<td>Stock 0.75 BMS8-124,CI Type I Grade 4</td>
<td>0.75 BMS8-124,CI Type I Grade 4</td>
<td>0053 00</td>
</tr>
<tr>
<td>5</td>
<td>Boot Assy</td>
<td>Note E</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Top and bottom skin are made of four plies of fiberglass type 1581 or 7781.
C. The collar is made of two plies of Nema Grade G-10 laminated fiber cloth top and bottom.
D. Replace with new ring assembly, 414R6001-5.
E. If repair not feasible, replace with boot assembly, 114R6055-17.

NOTE

Refer to Table 9 for index number reference.

Figure 9. Nose Door
REPAIRS – continued

Table 9. Nose Door

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hinge</td>
<td>NOTE D</td>
<td>--</td>
<td>0093 00</td>
</tr>
<tr>
<td>2</td>
<td>Skin, Outer</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Skin, Inner</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Strut</td>
<td>0.050 Smls Tube 0.035 6061-T6</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Housing</td>
<td>Note C</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>6</td>
<td>Shaft</td>
<td>0.31 Sq Rolled Bar 2024-T4</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Angle</td>
<td>0.320 2024-T4 Clad</td>
<td>Note G</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.

B. Refer to WP 0080 00 for fuselage sealing when repairs are made on the nose compartment door assembly.

C. The housing is made of six plies of No.181 impregnated glass cloth, MIL-P-8013, Type I, for impregnated glass cloth structures. Refer to WP 0081 00 for repair procedures.

D. The hinge is made of 2024-T4 aluminum alloy extrusion. Refer to WP 0093 00 for repair of hinges.

E. Replace with new shaft, P/N 114S1632-35.

F. Refer to WP 0094 00 for tube repairs.

G. Replace with new angle, 114S1632-17 LH or -18 RH.

H. Replace with new angle, 114S1632-19 LH or -20 RH.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
COCKPIT ENCLOSURE REPAIRS

INITIAL SETUP

Test Equipment: As Required

Tools and Special Tools: As Required

Material/Parts: As Required

Personnel Required: As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0086 00
WP 0087 00
WP 0088 00
WP 0095 00

Equipment Conditions: As Required

Special Environmental Condition: As Required

SCOPE

This work package covers repair of the cockpit enclosure structure components.

1. Figure 1, Cockpit Enclosure
2. Figure 2, Upper Cockpit Enclosure
3. Figure 3, Lower Cockpit Enclosure
REPAIRS

NOTE
Refer to Table 1 for index number reference.

Figure 1. Cockpit Enclosure

Table 1. Cockpit Enclosure

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Web</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>7</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Seal</td>
<td>Molded Silicone Rubber</td>
<td>Note B &amp; Note C</td>
<td>0095 00</td>
</tr>
</tbody>
</table>
Table 1. Cockpit Enclosure - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</thead>
<tbody>
<tr>
<td>9</td>
<td>Post</td>
<td>ALCOA T364 7075-T6 0.065 WX100X1.75 4130</td>
<td>ALCOA T364 7075-T6 0.065 WX100X1.75 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Stiffener</td>
<td>0.032 2024-T4 Bare</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Tee Fitting</td>
<td>145SS107 Note D</td>
<td>145SS107 Note D</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Fitting</td>
<td>0.080 4130 Norm</td>
<td>0100 4130 Norm</td>
<td>0088 00</td>
</tr>
<tr>
<td>13</td>
<td>Channel</td>
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<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>14</td>
<td>Web</td>
<td>0.036 4130 Norm</td>
<td>0.050 4130 Norm</td>
<td>0086 00</td>
</tr>
<tr>
<td>15</td>
<td>Web</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>16</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Bare</td>
<td>0086 00</td>
</tr>
<tr>
<td>17</td>
<td>Stiffener</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>18</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>19</td>
<td>Stiffener</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>20</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>21</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>22</td>
<td>Stiffener</td>
<td>0.032 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>23</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>24</td>
<td>Gusset Upper</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>25</td>
<td>Gusset</td>
<td>0.036 4130 Norm Heat Treat</td>
<td>0.050 4130 Norm Note D</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Repair with original material.
C. If damage is other than minor, replace with new seal, 114SS5664-7 LH or -8 RH.
D. Heat-treat to 125 to 145 KSI.
E. Replace with new fitting, 145S1837-1.
F. This part is used on aircraft serial number 92-0367 and 92-0368.
NOTE
Refer to Table 2 for index number reference.

Figure 2. Upper Cockpit Enclosure
Table 2. Upper Cockpit Enclosure

<table>
<thead>
<tr>
<th>INDEX NO</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fitting</td>
<td>4340 Normalized Steel</td>
<td>Note G</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Link</td>
<td>4340 Normalized Steel</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Shim</td>
<td>0.033 AL Laminate</td>
<td>Note C</td>
<td>Note D</td>
</tr>
<tr>
<td>4</td>
<td>Isolator</td>
<td>--</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Fitting</td>
<td>4340 Normalized Steel</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Link</td>
<td>4130-T Steel</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Bracket</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 CLAD</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Former</td>
<td>0.065 W 4130-T2 Steel</td>
<td>0.065 W 4130-T2 Steel</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace tube using same material.
C. Replace entire part with BAC1534-33 material of the same size and shape.
D. Repair is limited to replacing the entire isolator assembly IAW TM 55-1520-240-23.
E. Replace with new fitting, 145S1883-1.
F. Replace with new fitting, 145S1837-1.
G. Replace with new fitting, 145S1882-3 LH and -4 RH.
H. Replace with new fitting, 145S1884-5 LH and -4 RH.
NOTE

Refer to Table 3 for index number reference.

Figure 3. Lower Cockpit Enclosure
Table 3. Lower Cockpit Enclosure

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>ALCOA 22509</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>ALCOA 22477</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Stiffener</td>
<td>ALCOA 22477</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>ALCOA 22509</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Bare</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Filler</td>
<td>0.040 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Clad</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
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<td>AND10138-10003</td>
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<td>VS80572-3</td>
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NOTES

A. All dimensions are in inches.
B. Replace or repair with original material.

END OF WORK PACKAGE
### INITIAL SETUP

**Test Equipment:**
As Required

**Tools and Special Tools:**
As Required

**Material/Parts:**
As Required

**Personnel Required:**
As Required

### References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0087 00

### Equipment Conditions:
As Required

### Special Environmental Condition:
As Required

### SCOPE

This work package covers repair for the nose structure components.
NOTE

Refer to Table 1 for index number reference.

![Figure 1. Nose Structure](image-link)

**Table 1. Nose Structure**

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<td>--</td>
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### Table 1. Nose Structure - continued

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<td>Note B</td>
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### NOTES

A. All dimensions are in inches.
B. No repair, replace with original material.

**END OF WORK PACKAGE**
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
LOWER CONSOLE STRUCTURE REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0086 00
WP 0087 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair of the lower console, forward and aft, structural components.
NOTE
Refer to Table 1 for index number reference.

Figure 1. Lower Console, Forward
Table 1. Lower Console, Forward

<table>
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<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<td>Note B</td>
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<td>Note B</td>
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<td>Clip</td>
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<td>Note B</td>
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</table>

NOTES
A. All dimensions are in inches.
B. No repair, replace with original material.
C. No repair, replace with new part, TC342.
NOTE

Refer to Table 2 for index number reference.

Figure 2. Lower Console, Aft
REPAIR - continued

Table 2. Lower Console, Aft

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<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</tr>
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<td>Note B</td>
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<td>0.050 2024-T3 Clad</td>
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<td>Note B</td>
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<td>18</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>19</td>
<td>Filler</td>
<td>0.025 2024-T4 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>20</td>
<td>Web, Partition</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>21</td>
<td>Support, Rail</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>22</td>
<td>Spacer</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. No repair, replace with original material.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Primer, Epoxy (Item 140, WP 0157 00)
Steel, Sheet (Item 168, WP 0157 00)
Steel, Sheet (Item 169, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0078 00
WP 0080 00
WP 0083 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0102 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair of the nose tub formers and right longeron. Refer to Figure 1.

1. Right Nose Tub Longeron
2. Floor Former, sta's 51 (Canted), 70, 95, 120, 140, and 160
3. Cockpit Floor Structure; refer to WP 0102 00 for repair procedures.
Figure 1. Nose Tub

NOTE

Refer to Table 1 for index number reference.

Figure 2. Floor Former, Sta 51 (Canted)
**Table 1. Floor Former, Sta 51 (Canted)**

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td></td>
<td>Cap</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>ALCOA 9802 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td></td>
<td>Cap</td>
<td>ALCOA 11892 7075-T6 Extr</td>
<td>0.063 4130 Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.302 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td></td>
<td>Web</td>
<td>0.040 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td></td>
<td>Web</td>
<td></td>
<td>Note C</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Stiffener</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>ALCOA 9802 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Stiffener</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td></td>
<td>Stiffener</td>
<td>VS70754-2 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td></td>
<td>Stiffener</td>
<td></td>
<td>Note C</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Stiffener, Doubler</td>
<td>0.032 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td></td>
<td>Stiffener, Doubler</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0088 88</td>
</tr>
<tr>
<td></td>
<td>Stiffener, Doubler</td>
<td></td>
<td>Note C</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Replace fittings with sections of original material.
C. This part is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE

Refer to Table 2 for index number reference.

SERIAL NUMBERS
92-0367 AND 92-0368

Figure 3. Floor Former, Sta 70
## Table 2. Floor Former, Sta 70

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skirt</td>
<td>0.020 310 CRES</td>
<td>0.025 301 Cres</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Fitting</td>
<td>ALCOA 76959 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>Reynolds 11416 7075-T6 Bare</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Stiffener</td>
<td>0.025 2024-T4 Bare</td>
<td>0.032 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>ALCOA 18546 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Web</td>
<td>0.020 7075-T6 Bare</td>
<td>0.025 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Cap</td>
<td>ALCOA 67590 7075-T6</td>
<td>0.063 4130 Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Stiffener</td>
<td>BAC 1503-2731 7075-T6 Extr</td>
<td>0.050 4130 Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Channel</td>
<td>0.050 2024-T3</td>
<td>0.050 2024-T3 Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Stiffener</td>
<td>Harvey 15048 7075-T6 Extr</td>
<td>0.050 4130 Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>13</td>
<td>Doubler</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad Note C</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Replace fittings with sections of original material.
C. This part is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE

Refer to Table 3 for index number reference.

Figure 4. Floor Former, Sta 95

Table 3. Floor Former, Sta 95

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Support</td>
<td>AND10134-1201 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>0.063 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Web</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td></td>
<td>Web</td>
<td>0.050 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad Note C</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>AND10134-1205 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>AND10134-1003 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td></td>
<td>Stiffener</td>
<td>AND10133-0601 7075-T6 Extr</td>
<td>0.050 4130 Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Web</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>
## REPAIR - continued

### Table 3. Floor Former, Sta 95 - continued

<p>| | | |</p>
<table>
<thead>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>9</td>
<td>Skirt</td>
<td>0.050 7075-T6 Bare</td>
</tr>
<tr>
<td>10</td>
<td>Cap</td>
<td>ALCOA 80759 7075-T6</td>
</tr>
<tr>
<td></td>
<td>Cap</td>
<td>511 Extr</td>
</tr>
<tr>
<td>11</td>
<td>Stiffener</td>
<td>AND10133-0601 7075-T6</td>
</tr>
<tr>
<td>12</td>
<td>Stiffener</td>
<td>ALCOA 22653 7075-T6</td>
</tr>
<tr>
<td></td>
<td>Stiffener</td>
<td>AND10133-1201 7075-T6 Extr</td>
</tr>
<tr>
<td>13</td>
<td>Stiffener</td>
<td>ALCOA 59675 7075-T6</td>
</tr>
<tr>
<td>14</td>
<td>Web</td>
<td>0.050 7075-T6 Bare</td>
</tr>
<tr>
<td>15</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Bare</td>
</tr>
<tr>
<td>16</td>
<td>Web</td>
<td>0.040 7075-T6 Bare</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.

B. Replace fittings with sections of original material.

C. This part is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE

Refer to Table 4 for index number reference.

Figure 5. Floor Former, Sta 120
Table 4. Floor Former, Sta 120

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
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<th>WORK PACKAGE</th>
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<td>1</td>
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<td>0.100 7075-T6 Clad</td>
<td>0088 00</td>
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<tr>
<td>2</td>
<td>Channel</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Channel</td>
<td>0.063 2024-T3 Clad</td>
<td>0.070 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Support</td>
<td>AND10134-1205 7075-T6 Clad</td>
<td>0.100 7075-T6 Clad Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Web</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Cap</td>
<td>ALCOA 2129 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Cap</td>
<td>ALCOA 27076 7075-T6</td>
<td>0.050 4130 NOTE C</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>12</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad Note C</td>
<td>0086 00</td>
</tr>
<tr>
<td>13</td>
<td>Angle</td>
<td>ALCOA 9802 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Web</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>15</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>16</td>
<td>Web</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace fittings with sections of original material.
C. This part is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE

Refer to Tables 5 and 6 for index number reference.

Figure 6. Floor Formers, Sta 140 and Sta 160 (Sheet 1 of 2)
### Table 5. Floor Former, Sta 140

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>ALCOA 12756 7075-T6</td>
<td>0.160 4130 0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Web</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Attachment</td>
<td>Reynolds 7075-T6 6447</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>PHS90104 2025-T6 6447</td>
<td>NOTE B</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Stiffener</td>
<td>ALCOA 22981 7075-T6</td>
<td>0.063 4130 0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>ALCOA 12883 7075-T6</td>
<td>0.063 4130 0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Plate</td>
<td>0.080 7075-T6 Bare</td>
<td>0.090 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Replace damaged section with a corresponding section of original material.
C. Replace with new attachment 114S1835-5.
D. Bonded sandwich honeycomb structural assembly
E. Replace with new bracket 114E4054-9.

### Table 6. Floor Former, Sta 160

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attachment</td>
<td>0.250 7075-T6 Bare</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Cap</td>
<td>VS90302 7075-T6</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Bracket</td>
<td>0.025 2024-T4 Clad</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>ALCOA 7075-T6</td>
<td>0.100 4130 0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>VS90526 7057-T6</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Core</td>
<td>0.255 3.0 3/8 20N-3003</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Skin</td>
<td>0.020 7075-T6 Bare</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Doubler</td>
<td>0.016 7075-T6 Bare</td>
<td>0.020 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>0.080 7075-T6 Bare</td>
<td>0.090 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Angle</td>
<td>ALCOA 7075-T6</td>
<td>0.050 4130 0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>ALCOA 7075-T6</td>
<td>0.087 4130 0.087 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Replace damaged section with a corresponding section of original material.
C. Replace with new attachment 114S1835-5.
D. Bonded sandwich honeycomb structural assembly
E. Replace with new bracket 114E4054-9.
NOTE

Refer to Tables 7 and 8 for index number reference.

Figure 6. Floor Formers, Sta 140 and Sta 160 (Sheet 2 of 2)
Aircraft Serial No. 92-0367 and 92-0368
REPAIR - continued

Table 7. Floor Former, Sta 140 – Note E

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>ALCOA 12756 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Web</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Attachment</td>
<td>Reynolds 7075-T6 6447</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Plate</td>
<td>0.080 7075-T6 Bare</td>
<td>0.090 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Doubler</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>PHS90104 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>ALCOA 12883 7075-T6</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Stiffener</td>
<td>ALCOA 12883 7075-T6</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace damaged section with same material as original.
C. Replace with new attachment 114S1833-5.
D. Bonded sandwich honeycomb structural assembly
E. Floor beams, sta 140 and sta 160, containing these parts are used on aircraft serial numbers 92-0367 and 92-0368.

Table 8. Floor Former, Sta 160 – Note E

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attachment</td>
<td>0.250 7075-T6 Bare</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Cap</td>
<td>VS90 302 7075-T6</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Doubler</td>
<td>0.016 7075-T6 Bare</td>
<td>0.020 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>ALCOA 11638 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>VS90526 7075-T6</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Core</td>
<td>0.255 0.005 X AL</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Honeycomb BMS4-4, 6-20N Form B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Skin</td>
<td>0.020 7075-T6 Bare</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Attachment</td>
<td>0.025 7075-T6 Bare</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>
Table 8. Floor Former, Sta 160 – Note E - continued

<table>
<thead>
<tr>
<th>10</th>
<th>Angle</th>
<th>ALCOA 7075-T6</th>
<th>0.071 4130</th>
<th>0088 00</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Angle</td>
<td>0.080 7075-T6 Bare</td>
<td>0.090 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace damaged section with same material as original.
C. Replace with new attachment 114S1833-5.
D. Bonded sandwich honeycomb structural assembly
E. Floor beams, sta 140 and sta 160, containing these parts are used on aircraft serial numbers 92-0367 and 92-0368.

RIGHT LOWER NOSE TUB LONGERON REPAIR – Refer to Figure 7

1. Remove lower cabin door, 114S1620-57, including two hinge and stop fittings, 114S1865-1.
2. Remove forward RH floor panel assembly, 114S2554-7, -27, or -32.
3. Remove two forward lower door coamings including brackets (aluminum coaming 114S1623-13 and fiberglass coaming 114S1623-19).
4. Remove doorsill assembly, 114S1622-3, at bottom of door opening.
5. Remove two bolts NAS264-15, washers MS20002C4 and MS20000-4, and nuts EB048, used to join upper and lower tension fittings at sta 120, WL minus 30, and BL 48 RH.
6. Remove tiedown ring and adapter assembly, 114S2604-2, and tiedown receptacle, 114S2711-1, at sta 124 and BL 44 RH.
7. If required, due to tool limitation, additional access to work area may be obtained by unfastening and peeling back the skin at laps along sta 120 and WL minus 30.
8. Inspect all adjacent areas, to the cracked longeron, for damage.
9. Repair horizontal flange of longeron as follows:
   a. Unfasten and raise floor doubler, 114S1553-37 or -43, from tie-down beam. Begin at sta 120 and work aft until doubler can be raised enough to provide access to floor plate, 114S1553-27.
   b. Remove floor plate from horizontal flange of longeron. Remove rivets beginning at sta 120 and working aft. Remove a minimum of 16 rivets.

CAUTION

Do not damage supporting structure beneath floor plate.

   c. Cut floor plate at approximately sta 126 between outboard edge and BL 46 RH.
   d. Remove cut portion of floor plate from sta 119 aft to the cut.
   e. Make a repair angle from steel sheet (Item 168, WP 0157 00) or steel sheet (Item 169, WP 0157 00).
RIGHT LOWER NOSE TUB LONGERON REPAIR – Refer to Figure 7 - continued

NOTE

Finished angle size may vary because of location. Use stock size 18.4 inches long and 4.7 inches wide. Shape repair angle same as removed section of floor plate except in areas shown.

f. Fit repair angle to longeron. Locate 16 holes aft of crack and 8 holes forward. Locate 4 holes for rivets forward of sta 120. Locate three holes for rivets where repair angle overlaps floor plate. Locate tension fittings hardware bolts holes.

g. Drill and deburr holes as required.

h. Apply dissimilar metal protection to the repair angle, refer to WP 0078 00.

i. Apply fuselage sealing, refer to WP 0080 00.

j. Position the repair angle on the longeron and install the rivets.

WARNING

EPOXY PRIMER

k. Install rivets wet, use epoxy primer (Item 140, WP 0157 00).

l. Install two bolts NAS624-15, washers MS20002C4 and MS20002-4, and nuts EB048, in upper and lower tension fittings. Torque nuts to 90 to 100 inch-pounds.

m. Position floor doubler, 114S1553-37 or -43, and ti edown receptacle, 114S2711-1. Apply dissimilar metal protection to the repair angle, refer to WP 0078 00.

n. Install rivets, MS2047B6 and USAF461-15 and -6, in floor doubler and receptacle.

10. Repair vertical flange on longeron as follows:

a. Temporarily install outside skin in its original position.


c. Make a repair strip from steel sheet (Item 168, WP 0157 00) or steel sheet (Item 169, WP 0157 00).

NOTE

The finished dimensions of strap vary due to exact location of crack.

d. Drill a minimum of 27 holes in strap for installation of 11 rivets, BACR15DN5AD, aft of crack, 12 rivets, BACR15DN5AD, forward of crack, and 4 rivets, USAF461-5, at sta 120. Pick up rivet hole pattern from existing holes in skin.

e. Fit strap to skin. Fill gaps under strap at skin laps using 0.020-inch thick shim stock.

f. Provide dissimilar metal protection for strap and shims, refer to WP 0078 00.

g. Apply fuselage sealing, refer to WP 0080 00.

h. Install strap, shims, and rivets.
RIGHT LOWER NOSE TUB LONGERON REPAIR – Refer to Figure 7 - continued

**WARNING**

EPOXY PRIMER

**NOTE**

Install rivets wet with epoxy primer (Item 140, WP 0157 00).

i. Install rivets, as required, in skin laps and door coaming. Maintain original rivet pattern.

**NOTE**

Maintain fuselage sealing, refer to WP 0080 00. Install attaching screws wet with epoxy primer (Item 140, WP 0157 00).

j. Install doorsill assembly, 114S1622-3, and two forward lower door coamings (aluminum 114S1623-13 and fiberglass 114S1623-19). Six additional holes will be required in repair angle to install door coaming brackets in their original positions. Refer to WP 0080 00 for sealing requirements.

k. Install tie-down rings and adapter assembly, 114S2406-2.

l. Install forward RH floor panel assembly, 114S2554-7, -27 or -32.

m. Install lower cabin door, 114S1620-57, and two hinge and stop fittings, 114S1865-1 and -3.

n. Refinish repaired areas, refer to WP 0078 00.
RIGHT LOWER NOSE TUB LONGERON REPAIR – Refer to Figure 7 - continued

Figure 7. Right Lower Nose Tub Longeron (Sheet 1 of 2)
RIGHT LOWER NOSE TUB LONGERON REPAIR – Refer to Figure 7 - continued

Figure 7. Right Lower Nose Tub Longeron (Sheet 2 of 2)

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
COCKPIT FLOOR STRUCTURE REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Paint, Non-skid (Item 125, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0083 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair of the cockpit floor structural components. Refer to Figure 1.

Figure 1. Cockpit Floor
NOTE

Refer to Table 1 for index number reference.

Table 1. Cockpit Floor, Top View

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heel Slide</td>
<td>0.025 17-7 PH Cres</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Angle</td>
<td>0.050-7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.040 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Cover</td>
<td>0.050 AZ31B-H24 Mag</td>
<td>0.050 AZ31B-H24Mag</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Web</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Web</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>7</td>
<td>Door</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Top Skin</td>
<td>0.020 2024-T4 Clad (Rigidized)</td>
<td>Notes C &amp; D</td>
<td>0083 00</td>
</tr>
</tbody>
</table>
Table 1. Cockpit Floor, Top View - continued

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Core</td>
<td>304-1/4-15N-3003</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>10</td>
<td>Bottom Skin</td>
<td>0.016 7075-T6 Clad</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with new heel slide, 114S1551-171.
C. Refer to WP 0083 00 for typical sandwich honeycomb structure repair.
D. Apply non-skid paint (Item 125, WP 0157 00) if repairs are made within walkway or if existing coating is worn.

NOTE

Refer to Table 2 for index number reference.

Figure 3. Cockpit Floor, Bottom View
### Table 2. Cockpit Floor, Bottom View

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>0.063 7075-T6 Bare</td>
<td>0.071 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Cover Rest</td>
<td>0.050 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Channel</td>
<td>0.050 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
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<td>AND10136-1603 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>AND10133-0301 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Angle</td>
<td>BAC1530-2731 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Cap</td>
<td>AND10133-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Stiffener</td>
<td>ALCOA 22885 7075-T6</td>
<td>0.063 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Channel</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Cap</td>
<td>ALCOA 33495 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

**NOTE**

All dimensions are in inches.

**END OF WORK PACKAGE**
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
NOSE FRAMES REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
- Adhesive (Item 32, WP 0157 00)
- Cloth, Glass (Item 78, WP 0157 00)
- Cellophane Sheet (Item 55, WP 0157 00)
- Gloves (Item 108, WP 0157 00)

Personnel Required:
As Required

References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0081 00
- WP 0086 00
- WP 0087 00
- WP 0088 00
- WP 0101 00
- WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair procedures for the following nose section components. Refer to Figure 1.

1. Former, sta 160
2. Former, sta 150
3. Former, sta 140
4. Former, sta 130
5. Former, sta 120
6. Side Former, sta 110 LH
7. Bulkhead, sta 95
8. Trough Assembly
9. Former, sta 100
10. Cabin Door Coaming
Figure 1. Nose Section Formers
NOTE

Refer to Table 1 for index number reference.

Figure 2. Former, Sta 160
### Table 1. Former, Sta 160

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Doubler</td>
<td>0.063 7075-T6 Bare</td>
<td>0.080 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Clip</td>
<td>0.050 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>AND10134-1006 7075-T6</td>
<td>0.063 4130</td>
<td>NOTE D</td>
</tr>
<tr>
<td>5</td>
<td>Doubler</td>
<td>0.063 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>NOTE D</td>
</tr>
<tr>
<td>6</td>
<td>Splice Angle</td>
<td>0.071 301 ½ Cres</td>
<td>Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Attachment</td>
<td>7075-T6 Forging</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Zee</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Doubler</td>
<td>0.050 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>NOTE D</td>
</tr>
<tr>
<td>10</td>
<td>Web</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>11</td>
<td>Cap</td>
<td>ALCOA 14202 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Cap</td>
<td>ALCOA 16871 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>13</td>
<td>Cap</td>
<td>ALCOA 60278 7075-T6</td>
<td>0.200 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Stiffener</td>
<td>ALCOA 31543 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>15</td>
<td>Splice Plate</td>
<td>0.063 301 ½ H Cres</td>
<td>Note C</td>
<td>0090 00</td>
</tr>
<tr>
<td>16</td>
<td>Filler</td>
<td>0.040 301 ½ H Cres</td>
<td>Note C</td>
<td>0090 00</td>
</tr>
<tr>
<td>17</td>
<td>Stiffener</td>
<td>ALCOA 27695 7075-T6</td>
<td>0.036 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Angle</td>
<td>ALCOA 45827 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>20</td>
<td>Web</td>
<td>0.063 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with new attachment, 114S2867-1.
C. Damage other than minor, replace with new part, same as original material.
D. This is part used on aircraft serial numbers 92-0367 and 92-0368.
NOTE
Refer to Table 2 for index number reference.

Figure 3. Former, Sta 150

Table 2. Former, Sta 150

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Former</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Bracket</td>
<td>AND10133-060 7075-T6</td>
<td>AND10133-060 7075-T6</td>
<td>Note B</td>
</tr>
<tr>
<td>3</td>
<td>Former</td>
<td>0.040 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Strap</td>
<td>0.040 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>5</td>
<td>Former</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace if repair is not practical. Manufacture using original material listed in Table 2.
NOTE
Refer to Table 3 for index number reference.

Figure 4. Former, Sta 140
Table 3. Former, Sta 140

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Former</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Bracket</td>
<td>AND10133-060 7075-T6</td>
<td>AND10133-060 7075-T6</td>
<td>Note B</td>
</tr>
<tr>
<td>3</td>
<td>Former</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Strap</td>
<td>0.040 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>5</td>
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<td>0.040 7075-T6 Bare</td>
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NOTES
A. All dimensions are in inches.
B. Replace if repair is not practical. Manufacture using original material listed in Table 3.
C. Refer to Work Package 0088 00 for repair procedures.
D. Damage other than minor, repair with original material.
NOTE

Refer to Table 4 for index number reference.

Figure 5. Former, Sta 130

Table 4. Former, Sta 130

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
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<th>WORK PACKAGE</th>
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NOTES

A. All dimensions are in inches.
B. Replace if repair is not practical. Manufacture using original material listed in Table 4.
NOTE

Refer to Table 5 for index number reference.

Figure 6. Former, Sta 120
### Table 5. Former, Sta 120

<table>
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<td>Note F</td>
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<td>2014-T6</td>
<td>Note D</td>
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</table>

### NOTES

A. All dimensions are in inches.
B. Replace with new fitting, 145S1806-1.
C. Replace with new fitting, 145S1842-1.
D. Replace with new fitting, 114S1824-1 upper, 114S1824-3 lower.
E. Replace with new fitting, 114S1832-1 fwd, 114S1151-72 aft.
F. Replace with new fitting, 114S1832-3 fwd, 114S1831-3 aft.
NOTE
Refer to Table 6 for index number reference.

![Diagram of Side Former, Sta 110, LH Side]

Table 6. Side Former Sta 110, LH Side

<table>
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<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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NOTE
All dimensions are in inches.
NOTE
Refer to Table 7 for index number reference.

Figure 8. Bulkhead, Sta 95 (Sheet 1 of 2)
### Table 7. Bulkhead, Sta 95

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<th>ORIGINAL MATERIAL</th>
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<th>WORK PACKAGE</th>
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### NOTES

A. All dimensions are in inches.
B. Replace with new fitting, 1451801-1.
Figure 8. Bulkhead, Sta 95, Aircraft Serial Numbers 92-0367 and 92-0368 (Sheet 2 of 2)
Table 8. Bulkhead Sta 95, Aircraft Serial Numbers 92-0367 and 92-0368

<table>
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<tr>
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<th>NOMENCLATURE</th>
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Table 8. Bulkhead Sta 95, Aircraft Serial Numbers 92-0367 and 92-0368 - continued

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NOTES
A. All dimensions are in inches.
B. Replace with new fitting, 145S1801-4.
C. This table and Figure 8 show material for aircraft serial numbers 92-0367 and 92-0368.
NOTE

Refer to Table 9 for index number reference.

Figure 9. Trough Assembly
Table 9. Trough Assembly

<table>
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<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<td>Note D</td>
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NOTES
A. All dimensions are in inches.
B. Damage other than minor, replace with 145S1830-1.
C. Damage other than minor, replace with 145S1839-1.
D. Damage other than minor, replace with 145S1876-1.
E. Damage other than minor, replace with 145S1881-3.
F. Replace or repair with original material.
NOTE

Refer to Table 10 for index number reference.

Figure 10. Former, Sta 100

Table 10. Former, Sta 100

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<td>0.050 2024-T4 Clad</td>
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<td>Note B</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. If repair is not practical, replace with original material.
NOTES
A. All dimensions are in inches.
B. Patch, glass cloth material, (Item 78, WP 0157 00). Refer to WP 0081 00 for repair procedures.

Figure 11. Cabin Door Coaming

CABIN DOOR COAMING REPAIR
1. The coaming is made of molded six ply, laminated, plastic impregnated glass cloth. Formed aluminum alloy 6060-T6 parts are riveted to the lower sides and bottom of coaming.
CABIN DOOR COAMING REPAIR – continued

2. An angle made of 2024-T4 clad aluminum alloy is riveted to body skin across top of door opening.

3. Repair damage to impregnated glass cloth parts such as slight voids, small wrinkles, or holes that can be filled with Type A rivet.

4. Repair minor damage to formed metal parts such as nicks, dents, and scratches by burnishing. Fill small holes with Type A rivet.

5. Damage shall not destroy sealing quality of coaming and must not interfere with door operation.

CABIN DOOR COAMING, FORWARD LOWER CORNER REPAIR

Repair damage to formed metal parts not affecting a radius by patching. Repair cracks in forward lower corner of coaming as follows:

NOTE

The coaming may be cracked because the lower side longeron is cracked. Refer to work package 0101 00 for repair procedures.

1. Stop drill cracks and remove damaged material. Sand, roughen, and clean area to be repaired.

2. Cut a patch of glass cloth (Item 78, WP 0157 00). This patch shall be bonded to existing coaming and shall be covered by two stainless steel plates. Patch is used to provide a watertight seal.

3. Fabricate two splice plates from 0.020-inch thick 301 stainless steel 1/4 or 1/2 hard. Drill necessary holes in splice plates and coaming. Do not install rivets at this time.

WARNING

ADHESIVE

4. Impregnate patch of glass cloth with prepared adhesive (Item 32, WP 0157 00) wearing gloves (Item 108, WP 0157 00).

5. Install glass cloth patch over damage, removing air pockets by pressing a piece of cellophane sheet (Item 55, WP 0157 00) over the repair.

6. Place splice plates on patch using MS20600AD blind rivets.

7. Cure patch with heat lamp (10 to 12 inches from patch) until exposed portions of patch are hard and tack-free.

REPLACEMENT OF DAMAGE

Extensive damage to forward or aft coaming shall be repaired by splicing in a section of original coaming.

NOTE

Loss of more than 50 percent of length of member or numerous isolated damages are considered extensive damage and shall be replaced.

END OF WORK PACKAGE

0103 00-21/(22 blank)
# INITIAL SETUP

**Test Equipment:**
As Required

**Tools and Special Tools:**
As Required

**Material/Parts:**
As Required

**Personnel Required:**
As Required

---

## References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0086 00
- WP 0087 00
- WP 0088 00

---

## Equipment Conditions:
As Required

---

## Special Environmental Condition:
As Required

---

## SCOPE

This work package covers repair of beam assemblies, BL 18, sta 95 to sta 120.
NOTE
Refer to Table 1 for index number reference.

Figure 1. Right Hand Beam Assembly, BL 18, Sta 95 to Sta 120
### Table 1. Right Hand Beam Assembly, BL 18, Sta 95 to Sta 120

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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**NOTES**

A. All dimensions are in inches.
B. Replace or repair with original and clad material.
C. Damage other than minor, replace with 145S1868-2.
NOTE

Refer to Table 2 for index number reference.

Figure 2. Left Hand Beam Assembly, BL 18, Sta 95 to Sta 120
# REPAIR - continued

## Table 2. Left Hand Beam Assembly, BL 18, Sta 95 to Sta 120

<table>
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<th>ORIGINAL MATERIAL</th>
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<tr>
<td>17</td>
<td>Channel</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>18</td>
<td>Channel</td>
<td>0.063 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Support</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Stiffener</td>
<td>0.063 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>21</td>
<td>Gusset</td>
<td>0.071 7075-T6 Bare</td>
<td>0.071 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

## NOTES

A. All dimensions are in inches.
B. Replace or repair with original and clad material.
C. This part is used on aircraft serial numbers 92-0367 and 92-0368.
D. Damage other than minor, replace with 145S1867-2.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0087 00
WP 0088 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package details repair procedures for the forward hydraulic support. Figure 2., along with Table 2, prescribes procedures specific to aircraft serial numbers 92-0367 and 92-0368.
NOTE

Refer to Table 1 for index number reference.

Figure 1. Forward Hydraulic Support
REPAIR - continued

Table 1. Forward Hydraulic Support

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Support</td>
<td>0.063 301 ¼ HD Cres</td>
<td>0.063 301 ¼ HD Cres</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Strut</td>
<td>0.071 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Support</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Support</td>
<td>0.063 CRES 17-7 PH HT-TR 180-200 KSI</td>
<td>0.071 CRES 17-7 PH HT-TR 180-200 KSI</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Strut</td>
<td>AND10133-0701 7075-T6</td>
<td>0.063 7075-T6</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Support</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Brace</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Bracket</td>
<td>0.063 301 ¼ HD Cres</td>
<td>0.080 301 ¼ HD Cres</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTE
All dimensions are in inches.
NOTE
Refer to Table 2 for index number reference.

FORWARD HYDRAULIC SUPPORT

Figure 2. Forward Hydraulic Support
REPAIR - continued

Table 2. Forward Hydraulic Support

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Support</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>2</td>
<td>Support</td>
<td>0.063 301 ¼ HD Cres</td>
<td>0.063 301 ¼ HD Cres</td>
<td>Note B</td>
</tr>
<tr>
<td>3</td>
<td>Channel</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>4</td>
<td>Support</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>0.063 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>7</td>
<td>Bracket</td>
<td>0.036 301 ¼ HD Cres</td>
<td>0.063 301 ¼ HD Cres</td>
<td>Note B</td>
</tr>
<tr>
<td>8</td>
<td>Strut</td>
<td>0.071 2024-T3 Clad</td>
<td>0.080 2024-T3 Clad</td>
<td>Note B</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. This part is used on aircraft serial numbers 92-0367 and 92-0368. Refer to WP 0087 00 and WP 0088 00 for repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT  
CH-47D HELICOPTER  
HEATING AND VENTILATION DUCTING REPAIRS

<table>
<thead>
<tr>
<th>INITIAL SETUP</th>
<th>References:</th>
</tr>
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<tbody>
<tr>
<td>Test Equipment:</td>
<td>TM 1-1500-204-23 Series</td>
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<tr>
<td>As Required</td>
<td>TM 55-1520-240-23 Series</td>
</tr>
<tr>
<td></td>
<td>WP 0081 00</td>
</tr>
<tr>
<td></td>
<td>WP 0086 00</td>
</tr>
<tr>
<td></td>
<td>WP 0095 00</td>
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<table>
<thead>
<tr>
<th>Tools and Special Tools:</th>
<th>Equipment Conditions:</th>
</tr>
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<tr>
<td>As Required</td>
<td>As Required</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material/Parts:</th>
<th>Special Environmental Condition:</th>
</tr>
</thead>
<tbody>
<tr>
<td>As Required</td>
<td>As Required</td>
</tr>
</tbody>
</table>

SCOPE

This work package provides repair procedures for the heat and ventilation ductwork in the cockpit, heater assembly, and the cabin.
NOTE

Refer to Table 1 for index number reference.

Figure 1. Cockpit Heat and Ventilation Ducting
Table 1. Cockpit Heat and Ventilation Ducting

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Duct</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>2</td>
<td>Outlet Duct</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>3</td>
<td>Outlet Duct</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>4</td>
<td>Duct</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Notes B &amp; E</td>
<td>0081 00</td>
</tr>
<tr>
<td>5</td>
<td>Nozzle</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Notes C, D, &amp; E</td>
<td>0081 00</td>
</tr>
<tr>
<td>6</td>
<td>Elbow</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Notes C, D, &amp; E</td>
<td>0081 00</td>
</tr>
<tr>
<td>7</td>
<td>Duct</td>
<td>0.020 3003-H14 Tube</td>
<td>0.025 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Duct</td>
<td>0.049 6061-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Valve Assy</td>
<td>0.049 6061-T6 Tube</td>
<td>Note H</td>
<td>0081 00</td>
</tr>
<tr>
<td>10</td>
<td>T-Duct</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Notes C, F, &amp; G</td>
<td>0081 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. An area 1.50-inches long, each end, is reinforced with two additional plies of original material.
C. An area 1.25-inches long, each end, is reinforced with two additional plies of original material.
D. An area 1.50 to 1.60-inches long, each end, is reinforced with an additional ply of original material.
E. An additional two plies of original material reinforce the flange.
F. An area 1.75-inches long, each end, is reinforced with an additional ply.
G. An additional two plies of original material reinforce the curved portion of the elbow end.
H. Damage other than minor, replace with new part.
NOTE
Refer to Table 2 for index number reference.

Figure 2. Heater Assembly– Heat and Ventilation Ducting
### Table 2. Heater Assembly Ducting

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transition Assy</td>
<td>114E406-28</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Retainer</td>
<td>VS80507-2</td>
<td>Note C</td>
<td>0095 00</td>
</tr>
<tr>
<td>3</td>
<td>Screen</td>
<td>Square 4 Mesh Wire Cloth 0.035 AL Alloy</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Exhaust</td>
<td>114E4076</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Air Inlet</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Notes D &amp; E</td>
<td>0081 00</td>
</tr>
<tr>
<td>6</td>
<td>Heater</td>
<td>B52C98</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Distributor</td>
<td>3 Ply No. 128 Glass Cloth</td>
<td>Notes F &amp; G</td>
<td>0081 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Refer to TM 55-1520-240-23 for repair procedures.
C. Damage other than minor, replace with new part.
D. An area 1.50-inches long, each end, is reinforced with two additional plies of original material.
E. An additional two plies of original material reinforce the flange.
F. An area 1.25-inches long, each end, is reinforced with two additional plies of original material.
G. An additional two plies of original material reinforce the curved portion of the elbow end.
NOTE

Refer to Table 3 for index number reference.

Figure 3. Cabin Section – Heat and Ventilation Ducting
REPAIR – continued

Table 3. Cabin Section - Heat and Ventilation Ducting

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Back Plate</td>
<td>0.012 2024-T3 Clad</td>
<td>0.016 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Valve Assy</td>
<td>0.065 6061-T6 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Duct</td>
<td>0.012 2024-T4 Clad</td>
<td>Note C</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Elbow</td>
<td>3 Ply No. 128 Glass Cloth</td>
<td>Note D</td>
<td>0081 00</td>
</tr>
<tr>
<td>5</td>
<td>Transition Elbow Assy</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Note D</td>
<td>0081 00</td>
</tr>
<tr>
<td>6</td>
<td>Transition Adapter</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Note D</td>
<td>0081 00</td>
</tr>
<tr>
<td>7</td>
<td>Channel</td>
<td>0.016 2024-T3 Clad</td>
<td>0.020 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Buffer Board</td>
<td>0.125 2024-T3 Clad</td>
<td>0.125 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace part with new valve assembly, 114E4060-29.
C. Damage other than minor, replace with new part.
D. An area 1.25-inches long, each end, is reinforced with an additional two plies of original material.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN EXTERIOR REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0083 00
WP 0086 00
WP 0087 00
WP 0091 00
WP 0093 00
WP 0095 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the following exterior cabin components. Refer to Figure 1.

1. Cabin Crown Walkway
2. Tunnel Covers
3. Cabin Windows

Figure 1. Cabin Exterior
NOTE

Refer to Table 1 for index number reference.

Figure 2. Cabin Crown Walkway

Table 1. Cabin Crown Walkway

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AL Alloy Sheet</td>
<td>0.016 2024-T4 CLAD</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Core</td>
<td>0.50 3.4-1/4-15N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Doubler</td>
<td>0.012 7075-T6 CLAD</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Skin</td>
<td>0.012 7075-T4 CLAD</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Doubler</td>
<td>0.016 7075-T6 CLAD</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Edge Member</td>
<td>NOTE C</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Drain Cup</td>
<td>6061 AL ALLOY</td>
<td>Note D</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Member of bonded assembly, repair using original material.
C. Scotch ply-two layers cross type XP-114 (0.028-inch thick) and one layer cross ply Type 1002 (0.020-inch thick) non-woven continuous filament.
D. Replace with 414S2503-35 typical, 15 places.
NOTE

Refer to Table 2 for index number reference.

Figure 3. Tunnel Cover - Glass Cloth Type (Sheet 1 of 2)
NOTE

All dimensions are in inches.

Figure 3. Tunnel Cover - Glass Cloth Type (Sheet 2 of 2)
REPAIR - continued

Table 2. Tunnel Cover - Glass Cloth Type

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cover</td>
<td>2 PLY. NO. 181 Glass Cloth</td>
<td>--</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Step Plate</td>
<td>0.016 7075-T6 Clad</td>
<td>NOTE B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Support Assy</td>
<td>4 PLY. NO. 181 Glass Cloth</td>
<td>NOTE D</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>4 PLY. NO. 181 Glass Cloth</td>
<td>NOTE D</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Seal</td>
<td>--</td>
<td>NOTE C</td>
<td>095 00</td>
</tr>
<tr>
<td>6</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Gusset</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace step plate with 114S2905-137.
C. Replace with new seal VS80544.
D. Unless otherwise noted, the tunnel covers are similar in materials and methods of construction.
NOTE
Refer to Table 3 for index number reference.

NOTE
All dimensions are in inches

Figure 4. Tunnel Cover – Honeycomb Sandwich Type (Sheet 1 of 2)
NOTE
Refer to Table 3 for index number reference.

Figure 4. Tunnel Cover - Honeycomb Sandwich Type (Sheet 2 of 2)
Table 3. Tunnel Cover - Honeycomb Sandwich Type

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin</td>
<td>0.020 2024-T3 Clad</td>
<td>0.020 2024-T3 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Doubler</td>
<td>0.050 2024-T3 Clad</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Filler</td>
<td>0.050 2024-T3</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>BAC1503-2731</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Seal</td>
<td>114S2905-323</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Seal</td>
<td>VS80572-1</td>
<td>Note C</td>
<td>0095 00</td>
</tr>
<tr>
<td>7</td>
<td>Skin</td>
<td>0.016 2024-T3 Clad</td>
<td>0.016 2024-T3 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Pan</td>
<td>0.050 2024-T42 Clad</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>9</td>
<td>Doubler</td>
<td>0.020 2024-T3 Clad</td>
<td>0.020 2024-T3 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>10</td>
<td>Retainer</td>
<td>0.020 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>11</td>
<td>Pin</td>
<td>MS20253-2-740</td>
<td>MS20253-2-740</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Hinge</td>
<td>MS20257-4-7</td>
<td>Note I &amp; K</td>
<td>0093 00</td>
</tr>
<tr>
<td>13</td>
<td>Doubler</td>
<td>0.032 2024-T3 Clad</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>14</td>
<td>Stud</td>
<td>BACS21AR1</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>15</td>
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<td>Nylon Webbing</td>
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<td>18</td>
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<td>0.032 2024-T3 Clad</td>
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<td>19</td>
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<td>0083 00</td>
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<td>20</td>
<td>Spring</td>
<td>114S3910-161</td>
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<td>21</td>
<td>Grommet</td>
<td>GA5-312</td>
<td>Note H</td>
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<td>0.560 5052 Flex-Core</td>
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<td>0083 00</td>
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<td>0083 00</td>
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<td>Note E</td>
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<tr>
<td>26</td>
<td>Support</td>
<td>114S2633-1</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>27</td>
<td>Hinge</td>
<td>MS2000-PH-12</td>
<td>Note J</td>
<td>0093 00</td>
</tr>
<tr>
<td>28</td>
<td>Bearing</td>
<td>MS20200K3L</td>
<td>Note H</td>
<td>--</td>
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<tr>
<td>29</td>
<td>Strut</td>
<td>A297-1</td>
<td>Note H</td>
<td>--</td>
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<tr>
<td>30</td>
<td>Shield</td>
<td>BACT6159-0</td>
<td>Note H</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Honeycomb sandwich repair, refer to WP 0083 00.
C. Replace with same material as original.
D. Replace with new pan 114S2915-92 or -94 in cover assembly 114S2915-70 or -75, or new pan 114S2915-92 or -93 in cover assembly 114S2915-72 or -77.
E. Part of bonded assembly. Replace with same material as original.
F. Replace with new grip 114S2915-52.
G. Replace with new strap 114S2915-79.
H. Replace with new part same as original.
I. Replace with new hinge assembly 114S2915-60 on cover assembly or 114S2915-59 on fuselage structure. Apply faying surface sealant between hinge half, fuselage, and tunnel cover.
NOTE

All dimensions are in inches.

Figure 5. Tunnel Cover Hinge
NOTE

All dimensions are in inches.

Figure 6. Tunnel Cover Pan
NOTE

Refer to Table 4 for index number reference.

Figure 7. Cabin Windows
REPAIR - continued

Table 4. Cabin Windows

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seal Filler</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Seal</td>
<td>Note C</td>
<td>--</td>
<td>0095 00</td>
</tr>
<tr>
<td>3</td>
<td>Pane</td>
<td>Note D</td>
<td>0.040 2024-T4 Clad</td>
<td>0091 00</td>
</tr>
<tr>
<td>4</td>
<td>Frame</td>
<td>0.040 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Strap</td>
<td>Note E</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace with new seal filler 173S2904-5.
C. Replace with new seal 173S2904-4.
D. The windowpane is made of .080-inch thick acrylic sheet, MIL-P-25690.
E. Replace with new strap 114S2901-11.
F. Negligible damage to the aluminum frame is limited to nicks, dents, or scratches, which can be removed by burnishing, or to small holes, which can be filled with a Type A rivet. Damage must not interfere with the removal, installation, or function of the windowpane.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FORWARD POD STA 160 TO STA 187 REPAIR

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0081 00
WP 0086 00
WP 0087 00
WP 0088 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair of the following forward pod, sta 160 to sta 187, and components. Refer to Figure 1.

1. Formers, sta 170 to sta 187
2. Electrical Compartment Access Door

Figure 1. Forward Pod, Sta 160 to Sta 187
NOTE

Refer to Table 1 for index number reference.

Figure 2. Formers, Sta 170 and Sta 187
Table 1. Formers, Sta 170 and Sta 187

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Filler</td>
<td>181 Glass Cloth</td>
<td>Note C</td>
<td>0081 00</td>
</tr>
<tr>
<td>2</td>
<td>Former</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Support</td>
<td>0.040 2024-T3 Bare</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Support</td>
<td>ALCOA 59409 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Support</td>
<td>ALCOA 59409 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Support</td>
<td>ALCOA 59409 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Bracket</td>
<td>BAC 1503-1420 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Cap</td>
<td>Reynolds 11730 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Web</td>
<td>0.020 2024-T3 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
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<tr>
<td>10</td>
<td>Support</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
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<tr>
<td>11</td>
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<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Cap</td>
<td>ALCOA 22008 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>13</td>
<td>Angle</td>
<td>Reynolds 19292 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Support</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Web</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>16</td>
<td>Support</td>
<td>ALCOA 44076 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>17</td>
<td>Angle</td>
<td>ALCOA 44076 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Angle</td>
<td>ALCOA 44076 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Support</td>
<td>AND10134-1204 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Angle</td>
<td>ALCOA 22885 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>21</td>
<td>Angle</td>
<td>ALCOA 28546 7075-T6</td>
<td>Note B</td>
<td>--</td>
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<tr>
<td>22</td>
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<td>0.063 2024-T3 Clad</td>
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<tr>
<td>23</td>
<td>Filler</td>
<td>181 Glass Cloth</td>
<td>Note C</td>
<td>0081 00</td>
</tr>
<tr>
<td>24</td>
<td>Cap</td>
<td>ALCOA 22008</td>
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<tr>
<td>26</td>
<td>Support</td>
<td>0.032 2024-63 Clad</td>
<td>0.040 2024-T3 Clad</td>
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</table>

NOTES
A. All dimensions are in inches.
B. Repair not practical, replace part.
C. Four ply, No. 181 polyester impregnated cloth
NOTE
Refer to Table 2 for index number reference.

Figure 3. Electrical Compartment Access Door

Table 2. Electrical Compartment Access Door

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<tr>
<td>1</td>
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<td>0.040 2024-T3 Clad</td>
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<tr>
<td>2</td>
<td>Skin, Inner</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
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<tr>
<td>3</td>
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<td>ALCOA 13816 7075-T6</td>
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<td>Skin, Outer</td>
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<td>0.025 2024-T3 Clad</td>
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NOTE
All dimensions are in inches.

END OF WORK PACKAGE
## DEPOT MAINTENANCE WORK REQUIREMENT

**CH-47D HELICOPTER**

**FUEL POD AND ACCESS PANELS REPAIRS**

### INITIAL SETUP

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<thead>
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<th>References:</th>
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<tr>
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<td>TM 55-1520-240-23 Series</td>
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<td>WP 0088 00</td>
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<td>WP 0095 00</td>
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<td>WP 0157 00</td>
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### SCOPE

This work package covers repair of fuel pod formers, T caps, strakes, isolator panel, landing gear access door, and refuel relief valve support. Refer to Figure 1.

![Figure 1. Fuel Pod](attachment:image.png)
NOTE

Refer to Table 1 for index number reference.

Figure 2. Former, Sta’s 189, 238, 262, 372, 389, and 438

Table 1. Former, Sta’s 189, 238, 262, 372, 389 and 438

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</tr>
<tr>
<td>2</td>
<td>Cap</td>
<td>AND10137-0707 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
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<tr>
<td>3</td>
<td>Core</td>
<td>0.640, 3.1-3/16-10N 3003</td>
<td>Note E</td>
<td>0083 00</td>
</tr>
<tr>
<td>3a</td>
<td>Core</td>
<td>0.640, 3.4-1/4-15N 3003</td>
<td>Note E</td>
<td>0083 00</td>
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<tr>
<td>4</td>
<td>Skin</td>
<td>7075-T6 Clad</td>
<td>Note E</td>
<td>0083 00</td>
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<tr>
<td>5</td>
<td>Adapter</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Adapter</td>
<td>Note C</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Cap</td>
<td>ALCOA 22008 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7a</td>
<td>Cap</td>
<td>VS90332 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with adapter, 114S5836-2.
C. Damage other than minor, replace with adapter, 114S5831-1.
D. Damage other than minor, replace with adapter, 114S5838-1.
E. Sandwich honeycomb construction, repair using original material, refer to WP 0083 00.

Item No. 3 - Used at sta’s 189, 238, 372, 389, and 438 only.
Item No. 3a - Used at sta 260 only.
Item No. 7 - Used at sta’s 238, 262, 372, 389, and 438 only.
Item No. 7a - Used at sta 189 only.

0109 00-2
REPAIR - continued

REPAIR PARTS
1. REINFORCEMENT 0.060, 4130
2. REINFORCEMENT 0.032, 4130
3. REPLACEMENT VS90529, 7075-T6

WARNING
EPOXY PRIMER

NOTES
A. All dimensions are in inches.
B. Remove the damaged tee cap back to the centerline of the next fuselage frame.
C. Insulate dissimilar metals, refer to WP 0078 00.
D. To prevent chafing of the fuel tank, apply anti-chafing tape, refer to WP 0079 00. Apply two coats of epoxy primer, (Item 140, WP 0157 00) to all bare metal parts.
E. Attachment holes shown are for reference only. Use hole finder to determine the exact location of the attachment holes with pod temporarily installed on helicopter.

Figure 3. Forward Pod Tee Cap Repair

REPAIR OF FUEL POD TEE CAP EXTUSION

NOTE

The following procedures require removal and installation of the pod from the helicopter to facilitate repair.

1. Remove sections of damaged tee cap back to and in line with nearest primary former.
2. Replace it with a corresponding length of new extrusion or formed equivalent, and clamp in place.
REPAIR OF FUEL POD TEE CAP EXTRUSION - continued

3. Drill 0.161-inch diameter holes in extrusion using existing rivet locations in pod skin and temporarily fasten extrusion in place.

4. Remove five rivets through existing extrusion and pod skin.

5. Fabricate a splice angle from 0.060–inch 4130 steel 6 ¾ inches long, 2 inches wide, and 77 degrees (see Figure 3).

6. Position splice angle as shown to pick up five rivet holes each side of splice joint and clamp in place.

   NOTE
   Splice angle must fit contour of extrusion.

7. Drill five holes each side, using a 0.161-inch diameter drill.

   WARNING
   EPOXY PRIMER

8. Remove all clamps, temporary fasteners, and replacement parts. Deburr all holes. Apply two coats of epoxy primer (Item 140, WP 0157 00) to all exposed metal and faying surfaces in repair area.

9. Install replacement parts and splice angle, using rivets. Position heads as shown.

10. Install pod on helicopter temporarily and locate pod attachment holes in replacement parts with a hole finder.

11. Remove pod from helicopter and drill required attachment holes in tee cap using a 1/4-inch diameter drill.

12. Locate and drill four 0.161-inch diameter holes, each side of splice, in area of splicing angle. Space holes to avoid interference with pod attachment holes.

13. Countersink and deburr holes.

14. Fabricate a flat splice plate from 0.032-inch 4130 steel, 71/2-inches long and 3/4-inch wide.

15. Position splice plate to pick up holes drilled in step 12. Space rivets 7/8-inch if a pattern does not exist.

16. Drill 0.161-inch diameter holes through splice plate and lower leg of tee cap.

   WARNING
   EPOXY PRIMER

17. Remove splice plate, deburr holes, and apply two coats of epoxy primer (Item 140, WP 0157 00) to exposed metal and faying surfaces of splice plate.

18. Install splice plate using rivets at location as shown.

19. To prevent chafing of the fuel tank, apply anti-chafing tape, refer to WP 0079 00, over all repair protrusions.
NOTE
Refer to Table 2 for index number reference.

Figure 4. Fuel Pod Strake

Table 2. Fuel Pod Strake

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strake</td>
<td>0.050 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Cap</td>
<td>0.025 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Strake Tail Piece</td>
<td>6 Ply No.181-75 Glass Cloth</td>
<td>Note C</td>
<td>0081 00</td>
</tr>
<tr>
<td>4</td>
<td>Strake Nose Piece</td>
<td>6 Ply No. 181-75 Glass Cloth</td>
<td>Note C</td>
<td>0081 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. External repairs not permitted. Use insertion type repairs.
C. Repair with original material.
NOTE

Refer to Table 3 for index number reference.

Figure 5. Isolator Panel Assembly
## Table 3. Isolator Panel Assembly

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
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<td>0.020 2024-T3 Clad</td>
<td>0.020 2024-T3 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Upper Skin</td>
<td>2 Ply No. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>3</td>
<td>Hinge Pin</td>
<td>MS20253-2-5500</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Hinge Half</td>
<td>MS20001PH5-5500</td>
<td>Note C</td>
<td>0093 00</td>
</tr>
<tr>
<td>5</td>
<td>Film</td>
<td>Tedlar Film</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Lower Skin</td>
<td>2 PLY NO. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>7</td>
<td>Isolator</td>
<td>6063-T6</td>
<td>Note D</td>
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<tr>
<td>8</td>
<td>Core</td>
<td>8.1-1/8 X 20N 3003 MIL-C-7438</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>9</td>
<td>Edge Strip</td>
<td>0.125 Silicone Rubber</td>
<td>0.125 Silicone Rubber Strip of Sheet AMS3345 or AMS3346</td>
<td>0095 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Sandwich honeycomb construction, repair or replace with original material. Refer to WP 0083 00.
C. Replace hinge half with MS20001PH5-5000 and pin MS20253-2-5500.
D. If damage is other than minor, replace with new isolator, 114SS674-1.
E. Tedlar film is bonded to upper and lower surfaces of isolator panels.
NOTE

Refer to Table 4 for index number reference.

Figure 6. Forward Landing Gear Access Door
REPAIR OF FUEL POD TEE CAP EXTRUSION - continued

Table 4. Forward Landing Gear Access Door

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Skin</td>
<td>0.016 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Core</td>
<td>0.590, 2.3-1/4-10N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Skin</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Core</td>
<td>0.509, 2.3-1/4-10N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Bracket</td>
<td>ALCOA 22991</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Bracket</td>
<td>0.063 7075-T6 Clad</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Skin</td>
<td>0.016 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>9</td>
<td>Core</td>
<td>0.590, 2.3-1/4-10N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>10</td>
<td>Skin</td>
<td>0.016 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>11</td>
<td>Core</td>
<td>0.590, 23.4-1/8-60N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>12</td>
<td>Skin</td>
<td>0.016 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Sandwich honeycomb construction, refer to WP 0083 00.
C. Repair or replace with original material.
REPAIR OF FUEL POD TEE CAP EXTRUSION - continued

NOTE

Refer to Table 5 for index number reference.

Table 5. Refuel Relief Valve Support

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Web</td>
<td>0.040 2024-T3 Clad</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Clip</td>
<td>0.090 2024-T3 Clad</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Clip</td>
<td>0.080 2024-T3 Clad</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Face Plate</td>
<td>0.125 7075-T6 Clad</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>0.063 2024-T3 Clad</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Clip</td>
<td>0.050 2024-T3 Clad</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Gusset</td>
<td>0.050 2024-T3 Clad</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Frame</td>
<td>0.063 2024-T3 Clad</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Bracket</td>
<td>0.063 2024-T3 Clad</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Bracket</td>
<td>BAC1503-11780 Extr.</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Repair or replace with original material.

END OF WORK PACKAGE
## DEPOT MAINTENANCE WORK REQUIREMENT

**CH-47D HELICOPTER**

**CABIN CROWN TUNNEL REPAIRS**

### INITIAL SETUP

<table>
<thead>
<tr>
<th>Test Equipment:</th>
<th>As Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools and Special Tools:</td>
<td>As Required</td>
</tr>
<tr>
<td>Material/Parts:</td>
<td>Primer, Epoxy (Item 140, WP 0157 00)</td>
</tr>
<tr>
<td>Personnel Required:</td>
<td>As Required</td>
</tr>
</tbody>
</table>

### References:

- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0086 00
- WP 0087 00
- WP 0088 00
- WP 0148 00

### Equipment Conditions:

- As Required

### Special Environmental Condition:

- As Required

### SCOPE

This work package covers repairs for the following cabin crown tunnel structural components. Refer to Figure 1.

1. Tunnel Smoke Baffle
2. Rescue Hoist Beam
3. Litter Strap Support
4. Blade Fold Support
5. Drive Shaft Support
6. Dome Light Bracket
7. Locating Fixture, Drive Shaft Support Brackets (Not shown in Figure 1)
8. Installation of Drive Shaft Support Bracket Locating Fixture (Not shown in Figure 1)
9. Locating of Drive Shaft Mounting Hole - Alternate Method (Not shown in Figure 1)
Figure 1. Cabin Crown Tunnel
NOTE

Refer to Table 1 for index number reference.

Figure 2. Tunnel Smoke Baffle
### Table 1. Tunnel Smoke Baffle

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flange Upper</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Bracket</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Flange Outbd</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Clip</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>BAC1503 1420 7075-T6</td>
<td>Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Block, Hyd.</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Angle</td>
<td>BAC1503-1420 7075-T6</td>
<td>Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Block, Hyd.</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Flange Outbd</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Clip</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Bracket</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Replace items 7 and 9 with TA3050-0006.
C. Replace or repair with original material.
NOTE

Refer to Table 2 for index number reference.

Figure 3. Rescue Hoist Beam

Table 2. Rescue Hoist Beam

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cover</td>
<td>0.016 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Channel</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Channel</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Fitting</td>
<td>1.0 DIA 7075-T6 Rd Bar</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Closing Plate</td>
<td>0.032 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>7</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with new fitting, 114S2839-1.
REPAIR – continued

NOTE

Refer to Table 3 for index number reference.

Figure 4. Litter Strap Support

Table 3. Litter Strap Support

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Angle</td>
<td>0.032 7075-T6</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Bracket</td>
<td>0.063 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.025 7075-T6 Clad</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Gusset</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Gusset</td>
<td>0.032 2024-T4 Clad</td>
<td>Note D</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. The RH beam is shown. The LH beam is similar in construction. Repair data listed is applicable to both configurations.
C. Replace with new gusset, 114S2351-23 LH and RH.
D. Replace with new gusset, 114S2351-21 LH and RH.
E. Replace with new angle, 114S2351-29 LH and 114S2351-31 RH.
REPAIR – continued

NOTES
A. All dimensions are in inches.
B. Rivets symbol: &plus; denotes new rivet locations; use rivet, MS20470AD5.
C. Section A-A, detail on new angle. Make from 0.050-inch 2024-T3 clad aluminum. Bend radius 0.19-inch.

Figure 5. Blade Fold Support
**NOTE**

Refer to Tables 4 and 5 for index number reference.

Figure 6. Drive Shaft Supports, Sta’s 160, 260, 360, 210, 310, and Sta 410

**Table 4. Drive Shaft Supports Sta’s 160, 260, and Sta 360**

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Support</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Bracket</td>
<td>0.032 2024-T4</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Support</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Bracket</td>
<td>0.080 2024-T4 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Bracket</td>
<td>0.080 2024-T4 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Bracket</td>
<td>0.080 2024-T4 Clad</td>
<td>Note D</td>
<td>--</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.

B. Replace with new bracket 114S2352-37 LH and 114S2352-38 RH for sta 160 only; 114S2352-39 LH and 114S2352-40 RH for sta 260 only; and 114S2352-41 LH and 114S2352-42 RH for sta 360.

C. Replace with new bracket 114S2745-1.

D. Replace with new bracket 114S2352-35 LH and 114S2352-36 RH for sta’s 210, 310, and 410.
Table 5. Drive Shaft Supports Sta’s 210, 310, and Sta 410

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Support</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Bracket (2 Reqd)</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Bracket (2 Reqd)</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Bracket</td>
<td>0.080 2024-T4 Clad</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Support</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Bracket</td>
<td>0.080 2024-T4 Clad</td>
<td>Note D</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with new bracket 114S2352-37 LH and 114S2352-38 RH for sta 160 only; 114S2352-39 LH and 114S2352-40 RH for sta 260 only; and 114S2352-41 LH and 114S2352-42 RH for sta 360.
C. Replace with new bracket 114S2745-1.
D. Replace with new bracket 114S2352-35 LH and 114S2352-36 RH for sta’s 210, 310, and 410.
NOTES

A. All dimensions are in inches.
B. It may be necessary to relocate a drain tube standoff adjacent to the repair bracket.
C. Repair bracket - make from 0.032-inch 2024-T3 clad aluminum.
D. Repair clip - make from 0.032-inch 2024-T3 clad aluminum.

Figure 7. Dome Light Bracket
NOTE

This locating fixture may also be used to repair drive shaft supports at sta's 160, 210, and sta 410.

Figure 8. Locating Fixture, Drive Shaft Support Brackets
REPAIR – continued

installation of drive shaft support bracket locating fixture, 114G1410-1

1. Gain access to three adjacent drive shaft supports. Remove applicable drive shafts, if installed. Refer to TM 55-1520-240-23.

2. Place forward locator assembly, 114G1410-2, on cabin crown walkway.

3. Place aft locator assembly, 114G1410-3, on cabin crown walkway.

**CAUTION**

Improper hardware will reduce accuracy of locating fixture and may cause excessive misalignment of helicopter drive system.

4. Install locator assembly, 114D1410-5, on forward end of locator assembly 114G1410-2. Use two bolts, NAS1306-25, and two nuts, AN315C6R.

5. Install locator assembly, 114G1410-6, on aft end of locator assembly 114G1410-3. Use two bolts, NAS1306-25, and two nuts, AN315C6R.
6. Install locator assembly, 114G1410-8, on forward end of locator assembly 114G1410-3. Use two bolts, NAS1306-25, and two nuts, AN135C6R.

**CAUTION**

Improper installation of locator assembly can cause damage to drive shaft support brackets.

**NOTE**

Locator assembly 114G1410-7 is to be used on helicopters equipped with 114S2717 series drive shaft support brackets. Locator assembly 114G1410-8 is to be used on helicopters equipped with 114S2352 series brackets.

Do not install locator assembly 114G1410-7 as a substitute for locator assembly 114G1410-8.

7. Carefully lower aft locator assembly, 114G4140-3, onto the four applicable drive shaft support brackets. Attach locator assembly to brackets using pins, CL-8-LP, as required.

**CAUTION**

Do not lower aft end of forward locator assembly prior to installation of attaching hardware.

8. Carefully place forward locator assembly, 114G1410-2, and attached parts on the two applicable drive shaft supports.

9. Attach forward locator assembly to aft locator assembly. Use four bolts, NAS1306-25, and four nuts, AN315C6R.

10. Attach forward locator assembly to drive shaft support brackets. Use locating pins, CL-7-LP, as required.

11. Install swing clamp, CL-1SWA-3, on locator assembly 114G1410-5. Use four screws, MS16998-27.

12. Install bushing plates, 114G1410-38, on locator assembly 114G1410-1 or 114G1410-8, if required. Use four bolts, AN4C15A.

13. Check that all fasteners are tight and that all locating pins are properly installed.

**USE OF DRIVE SHAFT SUPPORT BRACKET LOCATING FIXTURE 114G1410-1.**

The locating fixture may be used to locate and drill mounting holes in any drive shaft support bracket on the cabin crown. The fixture may also be used when replacing entire brackets. Operations may be performed on two brackets at the same time. If more than two brackets on any three adjacent drive shaft supports require rework, the drive system alignment check fixture 114G1168-2 must be used. Refer to WP 0148 00. Specific procedures for the application of the locating fixture will vary with each repair. In general proceed as follows:


2. Level the aircraft.
USE OF DRIVE SHAFT SUPPORT BRACKET LOCATING FIXTURE 114G1410-1 - continued.

3. Make sure the locating fixture is securely attached to at least four undamaged supports brackets. Attach the fixture to a fifth bracket if only one repair is required.

**CAUTION**

The presence of personnel on the cabin crown panel can cause up to 0.050-inch deflections of the aircraft structure.

4. Clear the aircraft of all unnecessary personnel.

5. Drill a hole through the new or repaired brackets. The hole must have a diameter of 0.3125-inch plus 0.0070-inch or minus 0.0010-inch.

6. Carefully disassemble and remove fixture. Removal is the reverse of installation, except it is not necessary to remove bushing plates, 114G1410-38, the swing clamp, CL-1-SWA-3, or their attaching hardware.

7. Carefully clean components of fixture prior to placing them in container, 114G1410-4. Foreign matter remaining on mating surfaces of fixture may cause interference and misalignment on reassembly.

**WARNING**

8. Deburr holes drilled in support bracket and apply epoxy primer (Item 140, WP 0157 00).
ALTERNATE METHOD OF LOCATING DRIVE SHAFT MOUNTING HOLE

Refer to Figure 10 for alternate method of locating drive shaft mounting hole.

NOTES

A. All dimensions are in inches.
B. Doubler shown on LH bracket, RH installation is opposite.
C. If Fixture 114G1410-1 has not been used to locate holes, perform main rotor group alignment check IAW WP 0148 00 after repairs are complete.

Figure 10. Locating Drive Shaft Mounting Hole - Alternate Method

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN INTERIOR REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Primer, Epoxy (Item 140, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0083 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair of the following cabin interior components. Refer to Figure 1, Sheet 1 and Sheet 2.

1. Formers sta's 160 and 440
2. Formers sta's 200, 240, 280, 320, 360, and 400
3. Bottom Formers sta's 240, 260, 400, and 420
4. Side Formers
5. Partial Former sta 260
7. Beams WL minus 16
8. Beams WL 0
9. Troop Seat Back Rest and Litter Pole Beams WL 29
10. Forward Landing Gear Support Beam
Figure 1. Cabin Interior (Sheet 1 of 2)
Figure 1. Cabin Interior (Sheet 2 of 2)
NOTE
Refer to Table 1 for index number reference.

Table 1. Former, Sta 160

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>ALCOA 59159 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Angle</td>
<td>0.063 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>ALCOA 30934 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>VS90110 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTE
All dimensions are in inches.
NOTE
Refer to Table 2 for index number reference.

Table 2. Former, Sta 200

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Web</td>
<td>0.050 2024-T4 Bare</td>
<td>0.063 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Fitting</td>
<td>2014-T6</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>0.125 4130</td>
<td>0.160 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Stiffener</td>
<td>ALCOA 30670 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Angle</td>
<td>AND1033-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Fitting</td>
<td>0.250 7075-T6 Bare</td>
<td>Note C</td>
<td>--</td>
</tr>
</tbody>
</table>

Figure 3. Former, Sta 200
Table 2. Former, Sta 200 - continued

<table>
<thead>
<tr>
<th></th>
<th>Bonded Panel</th>
<th>0.255, 3.0-3/8-20N-3003</th>
<th>Note B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Cap</td>
<td>Reynolds 6033 6075-T6</td>
<td>0.125 4130</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. The bonded assembly is sandwich honeycomb construction.
C. Fitting is integral part of the bonded assembly. Damage other than minor necessitates replacement of bonded assembly.
D. Replace with new fitting, 114S2836-1 LH or 114S2836-2 RH.
NOTE

Refer to Table 3 for index number reference.

Figure 4. Former, Sta 240
### Table 3. Former, Sta 240

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Fitting</td>
<td>2014-T6</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Web</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>AND10133-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>AND10135-1002 7075-T6</td>
<td>0.071 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Strap</td>
<td>0.090 7075-T6 Bare</td>
<td>0.190 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Fitting</td>
<td>2014-T6</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>11</td>
<td>Cap</td>
<td>VS90115 7075-T6</td>
<td>0.125 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Web</td>
<td>0.063 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>13</td>
<td>Cap</td>
<td>VS90115 7075-T6</td>
<td>0.125 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>14</td>
<td>Cap</td>
<td>Reynolds 7825 7075-T6</td>
<td>0.190 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Cap</td>
<td>AND10134-1007 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>16</td>
<td>Angle</td>
<td>0.040 7075-T6 Bare</td>
<td>0.190 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>17</td>
<td>Angle</td>
<td>AND10133-1004 7075-T6</td>
<td>0.190 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Fitting</td>
<td>7075-T6 Forging</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>19</td>
<td>Angle</td>
<td>AND10133-1004 7075-T6</td>
<td>0.190 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Bonded Panel</td>
<td>0.405, 3.02-3/8-20N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>21</td>
<td>Doubler (Fwd)</td>
<td>0.020 7075-T6 Bare</td>
<td>0.020 7075-T6 Bare</td>
<td>0083 00</td>
</tr>
<tr>
<td>22</td>
<td>Doubler, Aft</td>
<td>0.016 7075-T6 Bare</td>
<td>0.016 7075-T6 Bare</td>
<td>0083 00</td>
</tr>
<tr>
<td>23</td>
<td>Shim</td>
<td>0.020 7075-T6 Bare</td>
<td>0.020 7075-T6 Bare</td>
<td>0083 00</td>
</tr>
<tr>
<td>24</td>
<td>Angle</td>
<td>7075-T6</td>
<td>AND10133-1004 x 11.0</td>
<td>0088 00</td>
</tr>
<tr>
<td>25</td>
<td>Doubler, Splice</td>
<td>0.020 7075-T6 Bare</td>
<td>0.020 7075-T6 Bare</td>
<td>0083 00</td>
</tr>
<tr>
<td>26</td>
<td>Strap</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Bare</td>
<td>0083 00</td>
</tr>
<tr>
<td>27</td>
<td>Angle</td>
<td>AND10133-1004 7075-T6</td>
<td>0.190 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>28</td>
<td>Angle</td>
<td>AND10133-0040 7075-T6</td>
<td>0.190 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>29</td>
<td>Angle</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>30</td>
<td>Fitting</td>
<td>7075-T6 Forging</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>31</td>
<td>Cap</td>
<td>AND10134-1007</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>32</td>
<td>Doubler (Aft)</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Bare</td>
<td>0083 00</td>
</tr>
</tbody>
</table>
REPAIR – continued

Table 3. Former, Sta 240 - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>Cap</td>
<td>Reynolds 7825 7075-T6</td>
<td>0.0190 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>34</td>
<td>Cap</td>
<td>VS90115 7075-T6</td>
<td>0.125 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>35</td>
<td>Cap</td>
<td>VS90115 7075-T6</td>
<td>0.125 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>36</td>
<td>Web</td>
<td>0.063 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. The bonded assembly is sandwich honeycomb construction. Repair with original material.
C. The fitting is a part of the bonded assembly. Damage other than minor necessitates replacement of the bonded assembly.
D. Replace with new fitting, 114S2836-1 LH or 114S2836-2 RH.
NOTE

Refer to Tables 4 through 7 for index number reference according to Sta number.

Figure 5. Bottom Former, Cargo Hook Installation, Sta’s 240, 260, 400, and 420
### Table 4. Bottom Former, Cargo Hook Installation, Sta 240

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Doubler, Fwd</td>
<td>0.020 7075-T6 Bare</td>
<td>0.020 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Reinforcement Strap</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>NOTE B</td>
</tr>
<tr>
<td>3</td>
<td>Insert</td>
<td>0.500 7075-T6 Bare</td>
<td>0.500 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Doubler, Aft</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Doubler, Aft</td>
<td>0.016 7075-T6 Bare</td>
<td>0.016 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Face Sheet</td>
<td>0.020 7075-T6 Bare</td>
<td>0.025 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Core</td>
<td>0.405, 3.0-3/8-20N-3003</td>
<td>0.405, 3.0-3/8-20N-3003</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Reinforcement Strap</td>
<td>0.190 7075-T6 Bare</td>
<td>0.190 7075-T6 Clad</td>
<td>Note B</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.

B. Replace with same material as original.

### Table 5. Bottom Former, Cargo Hook Installation, Sta 260

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Doubler, Fwd</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Insert</td>
<td>0.375 7075-T6 Bare</td>
<td>0.375 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Face Plate</td>
<td>0.020 7075-T6 Bare</td>
<td>0.025 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Core</td>
<td>0.255, 3.0-3/8-20N-3003</td>
<td>0.255, 3.0-3/8-20N-3003</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Doubler, Aft</td>
<td>0.020 7075-T6 Bare</td>
<td>0.020 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Reinforcement Strap</td>
<td>0.190 7075-T6 Bare</td>
<td>0.190 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>7</td>
<td>Reinforcement Strap</td>
<td>0.125 7075-T6 Bare</td>
<td>0.125 7075-T6 Clad</td>
<td>Note B</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.

B. Replace with same material as original.
REPAIR – continued

### Table 6. Bottom Former, Cargo Hook Installation, Sta 400

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Doubler, Fwd</td>
<td>0.020 7075-T6 Bare</td>
<td>0.020 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Reinforcement Strap</td>
<td>0.125 7075-T6 Bare</td>
<td>0.125 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>3</td>
<td>Insert</td>
<td>0.375 7075-T6 Bare</td>
<td>0.375 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Doubler, Aft</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Doubler, Aft</td>
<td>0.016 7075-T6 Bare</td>
<td>0.016 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Face Plate</td>
<td>0.020 7075-T6 Bare</td>
<td>0.025 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Core</td>
<td>0.255, 3.0-3/8-20N-3003</td>
<td>0.225, 3.0-3/8 20N-3003</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Reinforcement Strap</td>
<td>0.375 7075-T6 Bare</td>
<td>0.375 7075-T6 Clad</td>
<td>Note B</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Replace with same material as original.

### Table 7. Bottom Former, Cargo Hook Installation, Sta 420

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Doubler, Fwd</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Insert</td>
<td>0.375 7075-T6 Bare</td>
<td>0.375 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Face Plate</td>
<td>0.020 7075-T6 Bare</td>
<td>0.025 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Core</td>
<td>0.255, 3.0-3/8-20N-3003</td>
<td>0.255, 3.0-3/8-20N-3003</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Doubler, Aft</td>
<td>0.020 7075-T6 Bare</td>
<td>0.025 7075-T6 Bare</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Reinforcement Strap</td>
<td>0.375 7075-T6 Bare</td>
<td>0.375 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>7</td>
<td>Reinforcement Strap</td>
<td>0.125 7075-T6 Bare</td>
<td>0.125 7075-T6 Clad</td>
<td>Note B</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Replace with same material as original.
NOTE

Refer to Tables 8 through 11 for index number reference according to Sta number.

Figure 6. Bottom Former, Cargo Hook Installation, Sta’s 240, 260, 400, and 420 - Aircraft Serial Numbers 92-0367 and 92-0368
**Table 8. Bottom Former, Cargo Hook Installation, Sta 240 – Aircraft Serial Numbers 92-0367 and 92-0368**

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>BAC1505-10132 7075-T6</td>
<td>BACP1505-132 7075-T6</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Doubler, Aft</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Doubler, Aft</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Face Plate</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Core</td>
<td>Stock 0.405 Porm BMS4-4, 6-20N Form B 0.005 AL Honeycomb</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>VS90308 7075-T6</td>
<td>VS90308 7075-T6</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Doubler, Fwd</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Insert</td>
<td>0.500 7075-T6 Bare</td>
<td>0.500 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Replace with same material as original.

**Table 9. Bottom Former, Cargo Hook Installation, Sta 260 – Aircraft Serial Numbers 92-0367 and 92-0368**

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Face Sheet</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
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<td>0.050 7075-T6 Clad</td>
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</tr>
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</tr>
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**NOTES**

A. All dimensions are in inches.
B. Replace with same material as original.
**Table 10. Bottom Former, Cargo Hook Installation, Sta 400 – Aircraft Serial Numbers 92-0367 and 92-0368**

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<td>0.032 7075-T6 Clad</td>
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<td>0.040 7075-T6 Clad</td>
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</tr>
<tr>
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<td>Cap</td>
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<td>VS90303 7075-T6 Bare</td>
<td>0083 00</td>
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<td>0.040 7075-T6 Clad</td>
<td>0083 00</td>
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<tr>
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<td>0.025 7075-T6 Clad</td>
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</tr>
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</table>

**NOTES**
A. All dimensions are in inches.
B. Replace with same material as original.

**Table 11. Bottom Former, Cargo Hook Installation, Sta 420 – Aircraft Serial Numbers 92-0367 and 92-0368**

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<td>BAC1505-100119 7075-T6511</td>
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<td>0.032 7075-T6 Clad</td>
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</tr>
<tr>
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<td>Core</td>
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<td>Note B</td>
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<td>VS90303 7075-T6 Bare</td>
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<td>0.032 7075-T6 Clad</td>
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**NOTES**
A. All dimensions are in inches.
B. Replace with same material as original.
NOTE

Refer to Table 12 for index number reference.

Figure 7. Former, Sta’s 280 and 320

MS022783
Table 12. Formers, Sta's 280 and 320

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
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<th>WORK PACKAGE</th>
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</thead>
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<td>Cap</td>
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<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Support</td>
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<td>BAC1503 7075-T6</td>
<td>0088 00</td>
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<td>0.063 2024-T3 Clad</td>
<td>0088 00</td>
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<td>HARVEY 15078 7075-T6</td>
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<td>ALCOA 9802 7075-T6</td>
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<td>0.160 4130</td>
<td>0088 00</td>
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<td>ALCOA 9802 7075-T6</td>
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<td>0.160 4130</td>
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<tr>
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<td>Fitting</td>
<td>2014-T6</td>
<td>NOTE D</td>
<td>--</td>
</tr>
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<td>Angle</td>
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<td>ALCOA 9802 7075-T6</td>
<td>0088 00</td>
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<td>0.063 2024-T3 Clad</td>
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<td>0088 00</td>
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<tr>
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<td>Notes B &amp; C</td>
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<td>0088 00</td>
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<td>Note E</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. The bonded assembly is sandwich honeycomb construction. Repair with original material.
C. Damage to integral parts of assembly other than minor necessitates replacement of bonded assembly.
D. Replace with new fitting, 114S2836-1 LH or 114S2836-2 RH, if damage is greater than minor.
E. Replace with new fitting, 114S2409-23 LH or 114S2409-24 RH if damage is greater than minor.
NOTE

Refer to Tables 13 and 14 for index number reference according to Sta number.

Figure 8. Former, Sta’s 360 and 400
## Table 13. Former, Sta 360

<table>
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<td>0.063 2024-T3 Clad</td>
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<td>0.160 4130</td>
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</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. The bonded assembly is sandwich honeycomb construction. Repair with original material.
C. Integral part of bonded assembly. Damage other than minor necessitates replacement.
D. Replace with new fitting, 114S2836-1 LH or 114S2846-2 RH if damage is greater than minor.
E. Replace with new attachment if damage is greater than minor.
### Table 14. Former, Sta 400

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</thead>
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<td>--</td>
</tr>
<tr>
<td>19</td>
<td>Angle</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Angle</td>
<td>AND10133-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>21</td>
<td>Angle</td>
<td>AND10133-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>22</td>
<td>Doubler</td>
<td>0.032 7075-T6 Bare</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>23</td>
<td>Angle</td>
<td>AND10134-1405 7075-T6</td>
<td>AND10134-1405 X 6.6</td>
<td>0088 00</td>
</tr>
<tr>
<td>24</td>
<td>Bonded Assy</td>
<td>0.255.3.0-3/8-20N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>25</td>
<td>Doubler</td>
<td>0.032 7075-T6 Bare</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>26</td>
<td>Angle</td>
<td>AND10133-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>27</td>
<td>Angle</td>
<td>AND10133-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>28</td>
<td>Angle</td>
<td>AND10134-1405 7075-T6</td>
<td>AND10134-1405 X 6.6</td>
<td>0088 00</td>
</tr>
<tr>
<td>29</td>
<td>Angle</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>30</td>
<td>Attachment</td>
<td>0.250 7075-T6</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. The bonded assembly is sandwich honeycomb construction. Repair with original material.
C. Integral part of bonded assembly. Damage other than minor necessitates replacement.
D. Replace with new fitting 114S2836-1 LH or 114S2836-2 RH if damage is greater than minor.
NOTE
Refer to Table 15 for index number reference.

STATIONS 212, 225, 270, 293, 306, 333, 346, 413, AND 426

STATIONS 180 AND 419

STATIONS 372 AND 389

STATIONS 189, 238, 262, AND 372

Figure 9. Side Former, Sta’s 180, 189, 212, 225, 238, 262, 270, 293, 306, 333, 346, 372, 372,
389, 413, 419, and 426
REPAIR – continued


<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Former</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2.</td>
<td>Former</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Tension Fitting</td>
<td>--</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Former</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>AND10134-0702 2024 T6 Clad</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. In all cases, the LH former is shown. The RH former is similar in construction. Original and repair materials are applicable to both.
C. Replace with new fitting, 114S2857-1 LH or 114S2857-2 RH.

NOTE

Refer to Table 16 for index number reference.

Figure 10. Partial Former, Sta 260
REPAIR – continued

Table 16. Partial Former, Sta 260

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>Harvey 16119 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Cap</td>
<td>Reynolds 19273 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Support</td>
<td>ALCOA 62564 7075-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>Harvey 00301-3 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Web</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. The LH former is shown. The RH former is similar in construction. Original and repair materials are applicable to both.
C. Replace with new support, 114S2106-19 LH or 114S2106-20 RH.

NOTE
Refer to Tables 17 through 21 for index number reference according to Sta number.

Figure 11. Crown Former, Sta's 180, 220, 260, 300, 340, 380, and 420
### Table 17. Crown Former, Sta 180

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clip</td>
<td>ALCOA 52966 7075-T6</td>
<td>0.090 4130 Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Cap</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Cap</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.

B. For damage other than minor, replace clip with new part, 114S2716-1.

### Table 18. Crown Former, Sta's 220, 300, and 420

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clip</td>
<td>ALCOA 52966 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Cap</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

**NOTE**

All dimensions are in inches.
### Table 19. Crown Former, Sta 260

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clip</td>
<td>ALCOA 52966 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>VS90109 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>ALCOA 22981 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Clip</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Cap</td>
<td>AND10136-2001 7075-T6</td>
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<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Stiffener</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>13</td>
<td>Cap</td>
<td>0.063 2024-T4 Clad</td>
<td>0.071 4130</td>
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</tr>
<tr>
<td>14</td>
<td>Cap</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

**NOTE**

All dimensions are in inches.

### Table 20. Crown Former, Sta 340

<table>
<thead>
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<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clip</td>
<td>ALCOA 52966 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Clip</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Stiffener</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Cap</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Cap</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

**NOTE**

All dimensions are in inches.
REPAIR – continued

Table 21. Crown Former, Sta 380

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clip</td>
<td>ALCOA 52966 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Cap</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Cap</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTE

All dimensions are in inches.
NOTE
Refer to Table 22 for index number reference.

Figure 12. Frame, Sta 440

Table 22. Frame, Sta 440

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>VS90110 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Gusset</td>
<td>0.063 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Gusset</td>
<td>0.063 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTE
All dimensions are in inches.
NOTE
Refer to Table 23 for index number reference.

Figure 13. Beams, WL Minus 16

Table 23. Beams, WL minus 16

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Web</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Seat Rail</td>
<td>VS90517 MAG ZK60A-T5</td>
<td>Note C</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. All webs and seat rail supports are similar in construction. Original and repair material, and figure references, are applicable to all web and seat rail supports.
C. If the seat rail support (Index No. 2) is damaged, a length of extrusion machined to the configuration of the original section should be used.
NOTE
Refer to Table 24 for index number reference.

Figure 14. Beams, WL 0
## Table 24. Beams, WL 0

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stringer, RH</td>
<td>VS90315 7075-R6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Fitting</td>
<td>7075-T6 Extrusion</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Fitting</td>
<td>7075-T6 Extrusion</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>AND10133-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Fitting</td>
<td>7075-T6 Extrusion</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Fitting</td>
<td>7075-T6 Extrusion</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Stringer, LH</td>
<td>VS90315 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Filler</td>
<td>0.063 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Fitting</td>
<td>7075-T6 Extrusion</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Fitting</td>
<td>7075-T6 Extrusion</td>
<td>Note E</td>
<td>--</td>
</tr>
</tbody>
</table>

## NOTES

A. All dimensions are in inches.
B. Web (Index No. 2) and Cap (Index No. 5) LH and RH are of similar construction. Original and repair material are applicable to both LH and RH parts.
C. Replace with new fitting 114S2818-7 LH or 114S2818-8 RH.
D. Replace with new fitting 114S2818-9 LH or 114S2818-10 RH.
E. Replace with new fitting 114S2818-5 LH or 114S2818-6 RH.
NOTE
Refer to Table 25 for index number reference.

Table 25. Troop Seat Back Rest and Litter Pole Beams, WL 29

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fitting</td>
<td>7075-T6 Forging</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Beam</td>
<td>0.020 7075-T6 Clad</td>
<td>0.032 7075-R6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Fitting</td>
<td>7075-T6 Forging</td>
<td>Note C</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace with new fitting 114S2837-3 LH or 114S2837-2 RH.
C. Replace with new fitting 114S2837-1 LH or 114S2837-5 RH.
D. The LH beam is shown. The RH beam is similar in construction. Repair data is applicable to both.
NOTE

Refer to Table 26 for index number reference.

Figure 16. Forward Landing Gear Support Beams

Table 26. Forward Landing Gear Support Beams

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin</td>
<td>0.050 7075-T6 Clad</td>
<td>0.063 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>T-Section</td>
<td>VS90311 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Access Door</td>
<td>0.125 7075-T6 Bare</td>
<td>0.125 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.250 7075-T6 Bare</td>
<td>0.250 7075-T6 Clad</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Fitting Assy</td>
<td>2014-T6 Forging</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>T-Section</td>
<td>VS90314 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>AND10133-0601 7075-6T</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with new T-section of original material.
C. Replace with new fitting, 114S2818-1LH, -2 RH.
D. Patching is permissible. If the damage requires repair by insertion, the access door must be replaced.
E. This part is used on aircraft serial numbers 92-0367 and 92-0368.

END OF WORK PACKAGE
# DEPOT MAINTENANCE WORK REQUIREMENT
## CH-47D HELICOPTER
### CABIN TUB EXTERIOR REPAIRS

## INITIAL SETUP

**Test Equipment:**  
As Required

**Tools and Special Tools:**  
As Required

**Material/Parts:**  
- Primer, Epoxy (Item 140, WP 0157 00)  
- Corrosive Preventive Compound (Item 89, WP 0157 00)

**Personnel Required:**  
As Required

## References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0077 00
- WP 0078 00
- WP 0081 00
- WP 0083 00
- WP 0086 00
- WP 0087 00
- WP 0095 00
- WP 0157 00

## Equipment Conditions:
As Required

## Special Environmental Condition:
As Required

## SCOPE

This work package covers repair procedures for the lower rescue hatch coaming and lower rescue hatch door. Refer to Figure 1.

1. Lower rescue hatch coaming
2. Lower rescue hatch door
Figure 1. Cabin Tub Exterior
NOTE

Refer to Table 1 for index number reference.

Table 1. Lower Rescue Hatch Coaming

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coaming</td>
<td>Note C</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>2</td>
<td>Aft Rail</td>
<td>0.040 6061-T6 Bare</td>
<td>0.040 6061-T6 Bare</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Seal</td>
<td>--</td>
<td>Note D</td>
<td>0095 00</td>
</tr>
<tr>
<td>4</td>
<td>Retainer</td>
<td>VS90415 6061-T6</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Retainer</td>
<td>VS90415 6061-T6</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>0.032 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Coaming</td>
<td>0.020 2024-T6 Clad</td>
<td>0.020 2024-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Coaming</td>
<td>0.020 2024-T6 Clad</td>
<td>0.020 2024-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Side Rail</td>
<td>0.040 6061-T6 Bare</td>
<td>0.040 6061-T6 Bare</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with a section same as the original.
C. The coaming is made of three plies of plastic impregnated glass cloth.
D. Replace with new seal, 114SS658-5.
REPAIR - continued

MODIFICATION OF RESCUE HOIST COAMING TO ALLOW INSPECTION

The lower rescue hatch areas, LH and RH, sta 320 to sta 360, WL minus 37, cannot be properly cleaned, painted, or inspected due to installation of coaming, P/N’s 114S29-6-129 and 114S29-6-130. In some cases, the referenced coaming P/N’s are not installed.

1. Inspect areas or installation of coaming (Item 7, Figure 2).
2. If installed, remove coaming and inspect area for corrosion, dirt, mud, and other foreign objects.
3. Clean area of corrosion, dirt, mud, loose paint, and foreign objects.
4. Repair or replace any damaged parts found during inspection.

**WARNING**

5. Treat (refer to WP 0077 00), prime with epoxy primer (Item 140, WP 0157 00), paint (refer to WP 0078 00), and apply CPC (Item 89, WP 0157 00).
6. Modify coaming to approximately 0.020 x 3.2 x 7.0 inches, at center point of installation of bracket, P/N 114S2906-95. Refer to Figure 2 for modification of coaming.
7. Install only the center coaming using rivets in existing holes. Do not install forward and aft coaming to facilitate inspection and assist with corrosion control.

---

**Figure 2. Lower Rescue Hatch Coaming (Sheet 2 of 2)**
REPAIR – continued

NOTE
Refer to Table 2 for index number reference.

Figure 3. Lower Rescue Hatch Door

Table 2. Lower Rescue Hatch Door

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inner Skin</td>
<td>0.012 7075-T6 Clad</td>
<td>0.012 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Core</td>
<td>1.0, 3.4-1/4-15N-3003</td>
<td>1.0, 3.4-1/4-15N-3003</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Rail</td>
<td>114S2902-19</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Outer Skin</td>
<td>0.016 7075-T6 Clad</td>
<td>0.016 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Core</td>
<td>1.0, 4.3-1/4-20N-3003</td>
<td>1.0, 4.3-1/4-20N-3003</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Rail</td>
<td>114S2902-21</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Core</td>
<td>1.0, 2.3-1/4-10N-3003</td>
<td>1.0, 2.3-1/4-10N-3003</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Rail</td>
<td>114S2902-19</td>
<td>Note B</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace with new rail, 114S2902-19

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN TUB FORMER AND BEAM REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0081 00
WP 0083 00
WP 0085 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0111 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair of the following cabin tub formers and beams. Refer to Figure 1.

1. Cargo Tiedown Adaptors, BL 0 and BL 20
2. Cargo Tiedown Adaptors, BL 44, sta 120 to sta 174
3. Cargo Tiedown Adaptors, BL 44, sta 174 to sta 485
4. Beams, BL 45, sta 160 to sta 200
5. Rescue Hoist Cutout Beams, sta 320 to sta 360
6. Center Cargo Hook Hatch, Hand Hold
7. Forward and Aft Cargo Hook Fittings
8. Floor Formers
Figure 1. Cabin Tub Formers and Beams
NOTE

Refer to Table 1 for index number reference.

Figure 2. Cargo Tiedown Adapter Beam, BL 0
Table 1. Cargo Tiedown Adapter Beam, BL 0

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Plate</td>
<td>0.100 2024-T3 Clad</td>
<td>Note J</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Beam</td>
<td>2024-T4 Bare Extr</td>
<td>Note D</td>
<td>0087 00</td>
</tr>
<tr>
<td></td>
<td>Beam</td>
<td>2024-T4 BAC1510-920</td>
<td>Notes D &amp; K</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note G</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Mount</td>
<td>--</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Plate</td>
<td>0.050 2024-T3</td>
<td>Note J</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Beam</td>
<td>2024-T4 BARE</td>
<td>Note I</td>
<td>0087 00</td>
</tr>
<tr>
<td></td>
<td>Beam</td>
<td>2024-BAC1510-920</td>
<td>Note K</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. All receptacles between sta 180 and sta 300 are 114S2893-7.
C. All receptacles between sta 420 and sta 481 are 114S2893-12.
D. Damage other than minor, replace with new beam, 114S2567-7.
E. Replace with new receptacle 114S2893-12 or 114S2893-11 on aircraft serial numbers 92-0367 and 92-0368.
F. Replace with new receptacle 114S2893-1 for aircraft serial numbers 92-0367 and 92-0368.
G. Replace with new receptacle 114S2893-8 or 114S2893-4 for aircraft serial numbers 92-0367 and 92-0368.
H. Replace with new mount, 114SS669-1.
I. Damage other than minor, replace with new beam 114S2568-4 or 114S2567-6 for aircraft serial numbers 92-0367 and 92-0368.
J. Replace with new part, same as original.
K. This material is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE

Refer to Table 2 for index number reference.

Figure 3. Cargo Tiedown Adapter Beam, BL 20
Table 2. Cargo Tiedown Adapter Beam, BL 20

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Plate</td>
<td>0.100 2024-T3</td>
<td>Note I</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Beam</td>
<td>2024 BAC1510 920 73511</td>
<td>Note C</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Notes D &amp; J</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Adapter</td>
<td>--</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Seal Support</td>
<td>BAC1517-1459 7075-T6 0.063 4130</td>
<td>--</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Mount</td>
<td>--</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Plate</td>
<td>0.050 2024-T3 Clad</td>
<td>Note I</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Beam</td>
<td>2024 BAC1510-920-T3511</td>
<td>Note H</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. All receptacles between sta 180 and sta 400 are 114S2893-7. For exception see Note J.
C. Damage other than minor, replace with new beam, 114S2569-13 LH, 114S2568-14 RH (sta 121 to sta 430), or 114S2569-15 LH and RH (sta 430 to sta 485).
D. Replace with new receptacle, 114S2893-11.
E. Replace with new adapter, 114S2559-55.
F. Replace with new receptacle, 114S2893-7.
G. Damage other than minor, replace with new beam, 114S2569-6 LH and RH.
H. Replace with new mount, 114SS669-1.
I. Replace with new part same material as original.
J. Receptacle, 114S2893-1, is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE
Refer to Table 3 for index number reference.

Figure 4. Cargo Tiedown Adapter Beam, BL 44, Sta 120 to Sta 174

Table 3. Cargo Tiedown Adapter Beam, BL 44, Sta 120 to Sta 174

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Beam</td>
<td>2024-T4 Bare</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td></td>
<td>Beam</td>
<td>BAC1510-921</td>
<td>Note F</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Plate</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Bracket</td>
<td>0.050 7075-T6 Bare</td>
<td>Note E</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Channel</td>
<td>AND10137-2405 7075-T6</td>
<td>Note E</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Doublcer</td>
<td>0.050 2024-T3 Clad</td>
<td>Note E</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Damage other than minor, replace with new beam, 114S1555-30 LH or 114S1555-31 RH and 114S1555-43 LH or 114S1555-44 RH for aircraft serial numbers 92-0367 and 92-0368.
C. Replace with new receptacle, 114S2893-15.
D. Replace with new receptacle, 114S2893-13.
E. Damage other than minor, replace with new part, same as original.
F. This material is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE
Refer to Table 4 for index number reference.

Figure 5. Cargo Tiedown Adapter Beam, BL 44, Sta 174 to Sta 485
Table 4. Cargo Tiedown Adapter Beam, BL 44, Sta 174 to Sta 485

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Retainer</td>
<td>0.032 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Seal</td>
<td>0.063 Urethane Sheet</td>
<td>0.063 Urethane Sheet</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Spacer</td>
<td>0.040 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0090 00</td>
</tr>
<tr>
<td>6</td>
<td>Plate</td>
<td>0.040 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>7</td>
<td>Longeron</td>
<td>VS90305 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Plate</td>
<td>0.050 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Beam</td>
<td>2024-T4 Bare</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Access Panel</td>
<td>0.100 MAG AZ31B-H24</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Beam</td>
<td>2024-T4 Bare</td>
<td>Note E</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Damage other than minor, replace with new beam, 114S2570-49 LH or 114S2570-14 RH.
D. Replace with new receptacle, 114D2893-9 LH or 114D2893-18 RH. Aircraft serial numbers 92-0367 and 92-0368 replace with new receptacle, 114S2893-5 LH or 114S2893-17 RH.
E. Damage other than minor, replace with new beam, 114S2570-51 LH or 114S2570-52 RH. Aircraft serial numbers 92-0367 and 92-0368 with damage other than minor, replace with new beam, 114S2570-51 LH of 114S2570-52 RH.
F. Replace with new access panel, 114S5657-1.
G. Between sta 360 and sta 420, all receptacles are 114S2893-14.
Figure 6. Cargo Tiedown Adapter Beam Splice
NOTE
Refer to Table 5 for index number reference.

NOTE
All dimensions are in inches.

Figure 7. Cabin Tub Beam, BL 45, Sta 160 to Sta 200
### Table 5. Cabin Tub Beam, BL 45, Sta 160 to Sta 200

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fitting</td>
<td>--</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Fitting</td>
<td>--</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>Reynolds 10270 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Fitting</td>
<td>--</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Fitting</td>
<td>--</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>Reynolds 10270 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Clip</td>
<td>AND10136-2001 7075-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Web</td>
<td>0.071 7075-T6 Clad</td>
<td>0.071 7075-T6 Clad</td>
<td>0085 00 &amp; 0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Cap</td>
<td>ALCOA 62564 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Fitting</td>
<td>--</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Fitting</td>
<td>--</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0085 00 &amp; 0086 00</td>
</tr>
<tr>
<td>13</td>
<td>Cap</td>
<td>ALCOA 85491 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Clip</td>
<td>ALCOA 62564 7075-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>15</td>
<td>Web</td>
<td>0.063 7075-T6 Clad</td>
<td>0.063 7075-T6 Clad</td>
<td>0085 00 &amp; 0086 00</td>
</tr>
<tr>
<td>16</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0085 00 &amp; 0086 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.

B. Damage other than minor, replace fittings (Item No’s. 1, 2, 4, 5, 10, and 11, Figure 7) with new parts.

- Item No. 1 - 114S2840-1 LH, 114S2840-11 RH.
- Item No. 2 - 114S2840-19 LH, 114S2840-21RH.
- Item No. 4 - 114S2840-5 LH, 114S2840-23 RH.
- Item No. 5 - 114S2840-6 LH, 114S2840-25 RH.
- Item No. 10 - 114S2840-5 LH, 114S2840-27 RH.
- Item No. 11 - 114S2840-7 LH, 114S2840-28 RH.

C. Replace clips with a corresponding length of original material extrusion.
NOTE

Refer to Table 6 for index number reference.

Figure 8. Rescue Hoist Cutout Beams, Sta 320 to Sta 360

Table 6. Rescue Hoist Cutout Beams, Sta 320 to Sta 360

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fitting</td>
<td>--</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Beam</td>
<td>VS90537 7075-T6</td>
<td>0.250 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Cover</td>
<td>--</td>
<td>Note C</td>
<td>0081 00</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>AND10136-2006 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Beam</td>
<td>VS90538 7075-T6</td>
<td></td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Clip</td>
<td>ALCOA 33811 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Fitting</td>
<td>--</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Fitting</td>
<td>--</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Cap</td>
<td>AND10136-2006 7075-T6</td>
<td>0.160 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>
Table 6. Rescue Hoist Cutout Beams, Sta 320 to Sta 360 - continued

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Web</td>
<td>0.125 7075-T6 Clad</td>
<td>0.125 7075-T6 Clad</td>
</tr>
<tr>
<td>11</td>
<td>Beam</td>
<td>--</td>
<td>Note G</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. The LH beam is shown. The RH beam is similar in construction. Repair data listed is applicable to both configurations.
C. The cover is made of four plies of plastic impregnated glass cloth.
D. Replace with new fitting, 114S2841-1.
E. Replace with new fitting, 114S2841-2.
F. Replace with new fitting, 114S2831.
G. Refer to Figure 11 and Table 9.
NOTE

Refer to Table 7 for index number reference.

Figure 9. Center Cargo Hook Hatch, Hand Hold

Table 7. Center Cargo Hook Hatch, Hand Hold

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coaming</td>
<td>0.040 2024-T4 Clad</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Angle</td>
<td>321 CRES 0.100</td>
<td>Notes B &amp;C</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Handle</td>
<td>321 CRES 0.75D X 0.188 Wall</td>
<td>Notes B &amp; C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Gusset</td>
<td>0.040 2024-T4 Clad</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Repair or replace with original material.
C. Use filler metal, ER347, when welding handle (tube) (Item No. 3, Figure 9) to angle (Item No. 2, Figure 9).
NOTE
Refer to Table 8 for index number reference.

Figure 10. Forward and Aft Cargo Hook Fittings
### Table 8. Forward and Aft Cargo Hook Fittings

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clip</td>
<td>AND10134-1601 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Clip</td>
<td>AND10134-1601 7075-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Clip</td>
<td>AND10133-2401 7075-T6</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Clip</td>
<td>AND10134-1601 7075-T6</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Clip</td>
<td>AND10134-1601 7075-T6</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Clip</td>
<td>AND10133-2401 7075-T6</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Clip</td>
<td>AND10133-2401 7075-T6</td>
<td>Note G</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Bushing</td>
<td>--</td>
<td>Note I</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Beam</td>
<td>Forging 7075-T736</td>
<td>Note J</td>
<td>--</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with new clip, 145S2617-3.
C. Damage other than minor, replace with new clip, 145S2617-4.
D. Damage other than minor, replace with new clip, 145S2617-5.
E. Damage other than minor, replace with new clip, 145S2617-6.
F. Damage other than minor, replace with new clip, 145S2617-7.
G. Damage other than minor, replace with new clip, 145S2617-8.
H. Damage other than minor, replace with new clip, 145S2617-9.
I. Damage other than minor, replace with new bushing, 145S2809-1.
J. Damage other than minor, replace with new beam, 145S2821-2.
NOTE
Refer to Table 9 for index number reference.

Figure 11. Center Cargo Hook Beam
Table 9. Center Cargo Hook Beam

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bushing, Sleeve</td>
<td>--</td>
<td>Notes E &amp; G</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Beam</td>
<td>--</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Shim</td>
<td>--</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Support, Trolley</td>
<td>--</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Bearing</td>
<td>--</td>
<td>Notes B &amp; G</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with new bearing, 414SS654-1.
C. Damage other than minor, replace with new support, 114S2834-3.
D. Damage other than minor replace with new shim, 145S2616-2.
E. Damage other than minor, replace with new bushing, MS21241-16C020.
F. Damage other than minor, replace with new beam, 414S2640-2.
G. Beam 414S2640, maximum bushing (2 ea) wear is 0.1007-inch. Maximum trunnion (2 ea) wear 0.137-inch.
NOTE

Refer to Table 10 for index number reference.

Figure 12. Former, Sta's 180, 220, 300, and 420

Table 10. Former, Sta's 180, 220, 300, and 420

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>VS90302 7075-T6</td>
<td>VS90302 7075-T6</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Plate</td>
<td>0.032 301 CRES 3/4 HD</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Pad</td>
<td>Nylon # 101</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>VS90303 7075-T6</td>
<td>VS90303 7075-T6</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Skin</td>
<td>0.020 7075-T6</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Core</td>
<td>0.255 MIL-C-7438 3.0 3/8-20N-3003</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Tee</td>
<td>VS90303 7075-T6</td>
<td>Note E</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Do not repair. Replace with new plate, 114S2734-4.
C. Do not repair. Replace with new pad, 114S2733-33.
D. Bonded sandwich honeycomb construction. Repair with original material.
E. Do not repair. Replace with original material.
REPAIR - continued

NOTE

Refer to Table 11 for index number reference.

![Figure 13. Former, Sta 260](image)

Table 11. Former, Sta 260

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Angle</td>
<td>ALCOA 59574 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Angle</td>
<td>ALCOA 59574 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Plate</td>
<td>0.032 301CRES 3/4 HD</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>VS90306 7075-T6</td>
<td>VS90306 7075-T6</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Pad</td>
<td>Nylon # 101</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Core</td>
<td>0.225 MIL-C-7438 3.0-3/8-20N-3003</td>
<td>Note E</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Cap</td>
<td>VS90306 7075-T6</td>
<td>VS90306 7075-T6</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Skin</td>
<td>0.020 7075-T6</td>
<td>Note E</td>
<td>0083 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>AND 10134-1402 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Angle</td>
<td>AND 10134-1402 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Do not repair. Replace with original material.
C. Do not repair. Replace with new plate, 114S2734-4.
D. Do not repair. Replace with new pad, 114S2733-33.
E. Bonded sandwich honeycomb construction. Repair with original material.
F. Refer to WP 0111 00, Figure 5 and Figure 6, for forward cargo hook former repair procedures.
NOTE

Refer to Table 12 for index number reference.

Figure 14. Former, Sta 340

Table 12. Former, Sta 340

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>VS90302 7075-T6</td>
<td>VS90302 7075-T6</td>
<td>0088 00</td>
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<tr>
<td>2</td>
<td>Pad</td>
<td>Nylon # 101</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Tee</td>
<td>VS90603 7075-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Skin</td>
<td>0.020 7075-T6</td>
<td>Note D</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Core</td>
<td>0.225 MIL-C-7438 3.0</td>
<td>Note D</td>
<td>0083 00</td>
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<td></td>
<td>3/8-20N-3003</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Cap</td>
<td>VS90303 7075-T6</td>
<td>VS90303 7075-T6</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are inches.
B. Do not repair. Replace with new pad, 114S2733-33.
C. Do not repair. Replace with original material.
D. Bonded sandwich honeycomb construction. Repair with original material.
NOTE
Refer to Table 13 for index number reference.

Figure 15. Former, Sta 420

Table 13. Former, Sta 420

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Filler</td>
<td>MAG ALY AZ 31B-H24</td>
<td>MAG ALY AZ 31B-H24</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Cap</td>
<td>VS90306 7075-T6</td>
<td>VS90306 7075-T6</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Core</td>
<td>0.225 MIL-C-7438 3.0-3/8-20N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Skin</td>
<td>0.020 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>VS90306 7075-T6</td>
<td>VS90306 7075-T6</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Doubler</td>
<td>0.016 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Tee</td>
<td>VS90303 7075-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Bonded sandwich honeycomb construction. Repair with original material.
C. Do not repair. Replace with original material.
D. Refer to WP 0111 00, Figure 5 and Figure 6, for aft cargo hook former repair procedures.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CABIN FLOORING REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Primer, Epoxy (Item 140, WP 0157 00)
Sealing Compound (Item 162, WP 0157 00)
Paint, Non-Skid (Item 125, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0078 00
WP 0083 00
WP 0086 00
WP 0087 00
WP 0093 00
WP 0095 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the cabin floor panels with web damage, web and one leg damage, web and two legs damaged, cargo rail damage, the hatch door framing, and non-skid paint application after repair. The Depot/Contractor may find magnesium floor panels installed in some aircraft. If found, advise the Contracting Officer and request permission to upgrade the cabin flooring to aluminum alloy panels in the interest of corrosion prevention.

FLOORING REPAIRS

1. Negligible Damage Repairs
   a. Dents, nicks, and scratches can be removed by burnishing.
   b. Holes up to 1/4-inch diameter can be plugged with a rivet.

2. Corrosion Damage - Maximum Allowed Limits
   a. Panel Surfaces
      (1) 15 percent reduction of thickness.
      (2) 1-inch holes provided they are sealed for water tightness and clear legs of panel.
   b. Panel legs - 10 percent reduction in thickness only. Missing material must be repaired.
   c. Channel tie down dishes, splices, and attaching parts - 10 percent reduction in thickness.
   d. Overall - 25 percent of entire panel affected by any or all of the above, is allowable.

3. Damage Necessitating Replacement - Loss of a major section of a panel or numerous isolated repairs to a panel.
FLOORING REPAIRS - continued

4. Panel Web Repairs
   a. Non-flush patches may be used on all areas of the floor panels.
   b. Make all patch material same as original material of panel. Material thickness can be 0.100-inch thick.
   c. Holes with a maximum dimension of two inches may be patched with an overlap of 0.64-inch and a single row of rivets spaced 0.60 to 0.70-inch apart. Larger patches require a one-inch overlap and two staggered rows of rivets with 0.32-inch edge distance and 0.70 to 0.80-inch spacing. The corner radius of the patch is 0.12-inch minimum. Continuity of the integral understructure must be maintained.

   ![WARNING](epoxy_primer.png)
   **EPOXY PRIMER**

   d. Apply two coats of epoxy primer (Item 140, WP 0157 00) to each faying surface of the patch prior to assembly.

   ![WARNING](sealing_compound.png)
   **SEALING COMPOUND**

   e. Sealing compound (Item 162, WP 0157 00) must be used on all faying surfaces of the patch, and a fillet of sealer applied along all edges. Wipe the fillet to a 45 degree or slightly concaved cross section.

5. Floor and Ramp Panel Installation
   a. Floor must be sealed. Refer to WP 0080 00.
   b. After completion of repairs, reapply non-skid paint, (Item 125, WP 0157 00), to areas depicted in Figure 5.
NOTE
Refer to Table 1 for index number reference.

Figure 1. Cabin Flooring

Table 1. Cabin Flooring

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-12</td>
<td>Panel</td>
<td>Note B</td>
<td>Note C</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Beams</td>
<td>Reference Only</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Access Plate</td>
<td>7075-T6 AL ALY QQ-A-287</td>
<td>Note C</td>
<td>0086 00</td>
</tr>
<tr>
<td>15</td>
<td>Utility Hatch</td>
<td>Note E</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>16</td>
<td>Receptacle</td>
<td>Reference Only</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>17</td>
<td>Plates</td>
<td>7075-T6 AL ALY QQ-A-287</td>
<td>Notes C &amp; D</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Material BAC 1510 AL ALY EXTR 7075-173511.
C. Repair material, same as original.
D. Plates at sta 240 and sta 360 are same material as at sta 120.
E. Hatch is sandwich honeycomb construction.
NOTES

1. Repair patch, use same material as original.
2. Web reinforcement 0.080-inch 2024-T3 clad material.
3. Make leg filler from AND10136-1303, 2024-T4 clad material.
4. Make web-leg reinforcement from 0.080-inch 2024-T3 clad material.
5. All dimensions are in inches.
6. Insulate dissimilar metals. Refer to WP 0078 00.

Figure 2. Cabin Flooring – Web and One-Leg Damage Repair
FLOORING REPAIRS - continued

NOTES

1. Repair rail using aluminum alloy extrusion 7075-T73511.
2. Replacement part, make from original material.
3. Reinforcement 0.080-inch 2024-T4 clad.
4. Reinforcement 0.080-inch 2024-T3 clad.
5. All dimensions are in inches.

Figure 3. Cabin Flooring – Cargo Rail and Web with Two-Leg Damage Repair
NOTE
Refer to Table 2 for index number reference.

Figure 4. Hatch Door and Framing
Table 2. Hatch Door and Framing

<table>
<thead>
<tr>
<th>INDEX NO</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<tbody>
<tr>
<td>1</td>
<td>Hatch</td>
<td>Note C</td>
<td>--</td>
<td>0083 00</td>
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<tr>
<td>2</td>
<td>Rail, Skid</td>
<td>VS90515 MAG AD9ER60A-T5</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Latch Assy</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Seal</td>
<td>VS80551</td>
<td>Note D</td>
<td>0095 00</td>
</tr>
<tr>
<td>5</td>
<td>Bracket</td>
<td>0.020 CRES 301</td>
<td>Note D</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Seal</td>
<td>VS80551</td>
<td>Note D</td>
<td>0095 00</td>
</tr>
<tr>
<td>7</td>
<td>Frame Assembly</td>
<td>AND10133-0701</td>
<td>Note D</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Hinge Pin</td>
<td>MS20253P2-3600</td>
<td>Note D</td>
<td>0093 00</td>
</tr>
<tr>
<td>9</td>
<td>Stop</td>
<td>0.50 2024-T4 Rd Bar</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Bracket</td>
<td>0.020 CRES 301</td>
<td>Note D</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Plate Assy, Hinge</td>
<td>0.063 2024-T4 Clad</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Hinge Half</td>
<td>MS20001PH4</td>
<td>Note D</td>
<td>0093 00</td>
</tr>
<tr>
<td>13</td>
<td>Plate, Ident</td>
<td>Note E</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Hinge Half</td>
<td>VS2017-1</td>
<td>Note D</td>
<td>0093 00</td>
</tr>
<tr>
<td>15</td>
<td>Hinge Half</td>
<td>MS20001PH3</td>
<td>Note D</td>
<td>0093 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace damaged latch with 34P1-156-531.
C. Hatch is sandwich honeycomb construction. Repair with original material.
D. Repair or replace with original material.
E. Replace with new plate, AN7510-2.
Figure 5. Cabin Flooring – Non-Skid Paint Application Area

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Cloth, Glass (Item 78, WP 0157 00)
Walkway Material (Item 193, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0078 00
WP 0083 00
WP 0086 00
WP 0087 00
WP 0093 00
WP 0095 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair of the following exterior aft section components – Refer to Figure 1.

1. Lower Pylon Leading Edge Fixed Fairing
2. Lower Pylon Leading Edge Hinged Fairing
3. Drive Shaft and Engine Mechanical Transmission Fairing
4. Engine Air Inlet Fairing
5. Engine Top Access Cover
6. Engine Exhaust Cone
7. Engine Side Access Cover
8. Engine Access and Fairing and Engine Shelf and Wash
9. Aft Landing Gear Fairing
10. Work Platform and Aft Landing Gear Pod Fairing
11. Aft Landing Gear Pod Fairing
12. Aft Landing Gear Access Panel
13. Aft Pod, sta 460 to sta 482
14. Aft Pod Access Panel
15. Engine Inlet Screen and Bypass Screen – Not shown in Figure 1
Figure 1. Aft Section Exterior
NOTE

Refer to Table 1 for index number reference.

Figure 2. Lower Pylon Leading Edge Fixed Fairing (Sheet 1 of 2)
### Table 1. Lower Pylon Leading Edge Fixed Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin</td>
<td>3-PLY, NO 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>2</td>
<td>Rib</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Edge Member</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Pan</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Rib</td>
<td>0.025 6061-T6 Bare</td>
<td>0.032 6061-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Rib</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Gusset</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
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<tr>
<td>9</td>
<td>Pan</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Rib</td>
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<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Cap</td>
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<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Beam</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.

B. Repair with reinforced plastic impregnated glass cloth (Item 78, WP 0157 00).

C. Fabricate repair strips and install within flanges of ribs to correct the gap between hinged and fixed fairings. Refer to Figure 2, Sheet 1.
REPAIR - continued

NOTES

A. All dimensions are in inches.

B. Make repair strap from 0.040-inch 2024-T3 clad. Basic dimensions are 1.45 x 24.3 inches.

C. Apply antichafing tape, refer to WP 0079 00, to exposed surface of repair strap.

D. Trim repair strap after installation, as required, to provide a proper fit with the fairing.

Figure 2. Lower Pylon Leading Edge Fixed Fairing (Sheet 2 of 2)
NOTE
Refer to Table 2 for index number reference.

Figure 3. Lower Pylon Leading Edge Hinged Fairing
Table 2. Lower Pylon Leading Edge Hinged Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Outer Skin</td>
<td>3-PLY, NO. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>2</td>
<td>Channel</td>
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<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
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<tr>
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<td>Rib</td>
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<td>0.032 2024-T3 Clad</td>
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<tr>
<td>4</td>
<td>Hinge</td>
<td>MS20001P12</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Bumper</td>
<td>Note D</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Doubler</td>
<td>0.025 2024-T3 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>7</td>
<td>Outer Skin</td>
<td>3-Ply, No. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>8</td>
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<td>0.020 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Core</td>
<td>0.550 Grade 3.0 Plastic</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>10</td>
<td>Inner Skin</td>
<td>3-Ply, No. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>11</td>
<td>Edge Strip</td>
<td>0.016 2024-T3 Clad</td>
<td>0.020 2024-T3 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>12</td>
<td>Edge Strip</td>
<td>0.020 2024-T3 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>13</td>
<td>Inner Skin</td>
<td>3-Ply, No. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>14</td>
<td>Core</td>
<td>0.550 Grade 3.0 Plastic</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>15</td>
<td>Angle</td>
<td>BAC 1503-2731 7075-T6</td>
<td>Note F</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. The skin is laminated plastic impregnated glass cloth (Item 78, WP 0157 00).
C. Honeycomb material is nonmetallic core, Nomex Class IV, or Type I Grade 3.0.
D. Replace damaged bumper with new bumper, P/N 600-045-2.
E. Replace damaged hinge with new hinge, MS20001P12 and pin, MS20253-2.
F. Replace with new angle made from original material.
NOTE
Refer to Table 3 for index number reference.

Figure 4. Drive Shaft and Engine Mechanical Transmission Fairing

Table 3. Drive Shaft and Engine Mechanical Transmission Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hat</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Inner Skin</td>
<td>Note B</td>
<td>6061-T6</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Inner Skin</td>
<td>0.032 6061-T6 Bare</td>
<td>0.050 6061-T6 Bare</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Outer Skin</td>
<td>0.032 6061-T6 Bare</td>
<td>0.050 6061-T6 Bare</td>
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<tr>
<td>6</td>
<td>Outer Shell</td>
<td>Note B</td>
<td>6061-T6</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. The outer and inner skins vary in thickness between 0.025 and 0.040-inch. The inner skin may be 0.060-inch maximum thickness at the nose section. Repair should be made using the same material and thickness as original.
NOTE

Refer to Table 4 for index number reference.

Figure 5. Engine Air Inlet Fairing
Table 4. Engine Air Inlet Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<td>VS60904-6061-T6</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Bracket</td>
<td>0.050 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Chafing Strip</td>
<td>Note E</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Cover</td>
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<td>0.032 6061-T6 Clad</td>
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</tr>
<tr>
<td>5</td>
<td>Baffle Support</td>
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<td>0.063 6061-T6 Clad</td>
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<tr>
<td>6</td>
<td>Pin</td>
<td>VS10106-4C4</td>
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<tr>
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<td>Baffle ring</td>
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<td>0.032 6061-T6</td>
<td>0087 00</td>
</tr>
<tr>
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<td>0.040 6061-T6</td>
<td>0.040 6061-T6</td>
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<tr>
<td>9</td>
<td>Inner Strip</td>
<td>0.040 321 CRS</td>
<td>0.040 321 CRS</td>
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<td>10</td>
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<td>0.040 321 CRS</td>
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<tr>
<td>11</td>
<td>Fairing Inner</td>
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<tr>
<td>12</td>
<td>Fairing Outer</td>
<td>Note B</td>
<td>--</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Material stock size and thickness, as required. Finished part thickness to be no less than .025 or more than .040-inch.
C. Replace pin if damaged or missing.
D. Damage other than minor, replace with new ring.
E. Fluoro silicone rubber with glass cloth, MIL-R-25988
F. Original material, BAC5010 Type 4 Grade 1, as per MIL-I-8500.
NOTE

Refer to Table 5 for index number reference.

Figure 6. Engine Top Access Cover
### Table 5. Engine Top Access Cover

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</thead>
<tbody>
<tr>
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<td>MS20257HP4-7200</td>
<td>MS20257HP4-7200</td>
<td>0093 00</td>
</tr>
<tr>
<td>2</td>
<td>Pin, Hinge</td>
<td>MS20253-2-7200</td>
<td>AN235-2</td>
<td>0093 00</td>
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<tr>
<td>3</td>
<td>Hinge Half</td>
<td>MS20257PH4-7200</td>
<td>MS20257PH4-7200</td>
<td>0093 00</td>
</tr>
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<td>4</td>
<td>Door</td>
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<td>Lead, Elec.</td>
<td>Note G</td>
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<tr>
<td>6</td>
<td>Spring</td>
<td>Note F</td>
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<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Bracket</td>
<td>0.032 2024-T4 Clad</td>
<td>Note S</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Rod Assy</td>
<td>Note E</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Lock</td>
<td>Note D</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Bushing</td>
<td>Note C</td>
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<td>--</td>
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</tr>
<tr>
<td>13</td>
<td>Hinge Half Assy Top</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Screen</td>
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<td>Note S</td>
<td>--</td>
</tr>
<tr>
<td>15</td>
<td>Screen</td>
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<td>Note S</td>
<td>--</td>
</tr>
<tr>
<td>16</td>
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<tr>
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<td>Hinge Half Assy Top</td>
<td>Note B</td>
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<td>--</td>
</tr>
<tr>
<td>19</td>
<td>Former</td>
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<td>0.040 2024-T3 Clad</td>
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<td>0.020 301 Cres ¼ Hd</td>
<td>0087 00</td>
</tr>
<tr>
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<td>0.020 301 Cres ¼ Hd</td>
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<td>0.040 2024-T3 Clad</td>
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<td>27</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>28</td>
<td>Hinge Half Assy Top</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>29</td>
<td>Latch Assembly</td>
<td>Note H</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>30</td>
<td>Door</td>
<td>0.032 2024-T4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>31</td>
<td>Bushing, Flanged</td>
<td>Note J</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>32</td>
<td>Fitting</td>
<td>Note I</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>33</td>
<td>End, Turnbuckle</td>
<td>Note M</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>34</td>
<td>Body, Turnbuckle</td>
<td>Note N</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>35</td>
<td>End, Turnbuckle</td>
<td>Note O</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>36</td>
<td>Spacer</td>
<td>Note P</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>37</td>
<td>Bushings</td>
<td>Note Q</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>38</td>
<td>Fitting</td>
<td>Note R</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>39</td>
<td>Bushing</td>
<td>Note L</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>40</td>
<td>Fitting</td>
<td>Note K</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>
NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with new 114P8012-1 LH, -2 RH fwd or 114P8014-9 LH or -10 RH aft.
C. Damage other than minor, replace with new NAS 77-4-11 fwd or NAS 75-4-007 aft.
D. Replace lock if broken with new P/N 53951.
E. Damage other than minor, replace with new 234S8042-2.
F. Replace if broken, with new spring, P/N 114P8039-2.
G. Make from #12 wire and two terminals, MS25036-111.
H. Replace if broken, with new latch assembly, H5000-2-032-064.
I. Damage other than minor, replace with new 234S8101-19 LH or -20 RH.
J. Damage other than minor, replace with new NAS 77-4-011.
K. Damage other than minor, replace with new 234S8103-6.
L. Damage other than minor, replace with new NAS 75-4-017.
M. Damage other than minor, replace with new MS21254-5RS.
N. Damage other than minor, replace with new MS21251B5S.
O. Damage other than minor, replace with new MS21254-5LL.
P. Damage other than minor, replace with new NAS 43HT4-21.
Q. Damage other than minor, replace with new NAS 75-4-017.
R. Damage other than minor, replace with new 234S8102-11 LH or -12 RH.
S. Damage other than minor, manufacture new part from original material.
REPAIR – continued

NOTE
Refer to Table 6 for index number reference.

Figure 7. Engine Exhaust Cone

Table 6. Engine Exhaust Cone

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cone</td>
<td>0.025 N-155 Steel AMS 5532</td>
<td>0.025 INCONEL AMS 5599</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>0.025 N-625 Steel AMS 5599</td>
<td>0.025 INCONEL AMS 5599</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Splice Plate</td>
<td>0.025 N-155 Sheet AMS 5532</td>
<td>0.025 INCONEL AMS 5599</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>0.025 N-625 Sheet AMS 5599</td>
<td>0.025 INCONEL AMS 5599</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Splice Plate</td>
<td>0.025 N-155 Sheet AMS 5532</td>
<td>0.025 INCONEL AMS 5599</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Ring</td>
<td>VS60904</td>
<td>VS60904</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTE
All dimensions are in inches.
NOTE

Numbered items in Figure 8 correspond to the respective items in Table 7.

Figure 8. Engine Side Access Cover
Table 7. Engine Side Access Cover

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Hinge, Half Note I</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Former</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Stringer</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Hinge, Half Note J</td>
<td>0.020 321 ANL Cres</td>
<td>0.025 301 Cres ¼ Hd</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Former</td>
<td>0.020 321 ANL Cres</td>
<td>0.025 301 Cres ¼ Hd</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Skin, Inner Note G</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Former</td>
<td>0.016 321 ANL CRES</td>
<td>0.020 301 Cres ¼ Hd</td>
<td>0086 00</td>
</tr>
<tr>
<td>11</td>
<td>Latch</td>
<td>Note G</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Stringer</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>14</td>
<td>Pin</td>
<td>Note H</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>15</td>
<td>Former</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>16</td>
<td>Cable</td>
<td>Cable MIL-C-5424</td>
<td>Cable MIL-C-5424</td>
<td>--</td>
</tr>
<tr>
<td>17</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>18</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>19</td>
<td>Latch</td>
<td>Note F</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>20</td>
<td>Hinge, Half Note C</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>21</td>
<td>Hinge, Half Note E</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>22</td>
<td>Latch</td>
<td>Note D</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>23</td>
<td>Skin, Outer Note B</td>
<td>0.025 2024-T4 Clad</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with new H313-4.
C. Damage other than minor, replace with new 114P8011-6.
D. Damage other than minor, replace with new H321-1.
E. Damage other than minor, replace with new 114P8059-1.
F. Damage other than minor, replace with new H313-3.
G. Damage other than minor, replace with new H312-2.
H. Damage other than minor, replace with new MS17984C306.
I. Damage other than minor, replace with new 114P8011-5.
J. Damage other than minor, replace with new 114P8059-2.
NOTE

Numbered items in Figure 9 correspond to the respective items in Table 8.

Figure 9. Engine Access and Fairing
Table 8. Engine Access and Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fairing</td>
<td>Glass Cloth No. 181</td>
<td>Glass Cloth No. 181</td>
<td>0081 00</td>
</tr>
<tr>
<td>2</td>
<td>Seal</td>
<td>Note B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Seal</td>
<td>Note B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Fairing</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Former</td>
<td>0.076 Cres 304 ½ Hd</td>
<td>0.076 Cres 304 ½ Hd</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Seal</td>
<td>Note B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Weld Assy</td>
<td>0.032 5052 H38</td>
<td>0.032 5052 H38</td>
<td>0086 00</td>
</tr>
<tr>
<td>12</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Seal</td>
<td>Note B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Weld Assy</td>
<td>0.032 5052 H38</td>
<td>0.032 5052 H38</td>
<td>0086 00</td>
</tr>
<tr>
<td>15</td>
<td>Adapter</td>
<td>Note E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Doubler</td>
<td>0.040 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>17</td>
<td>Seal</td>
<td>Note B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Seal</td>
<td>Note B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Fairing</td>
<td>0.032 5052 H38</td>
<td>0.032 5052 H38</td>
<td>0086 00</td>
</tr>
<tr>
<td>20</td>
<td>Bumpers</td>
<td>Note C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Seal</td>
<td>Note B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Fairing</td>
<td>Glass Cloth No. 181</td>
<td>Glass Cloth No. 181</td>
<td>0081 00</td>
</tr>
<tr>
<td>23</td>
<td>Hinge Half</td>
<td>MS20001P4</td>
<td>MS20001P</td>
<td>0093 00</td>
</tr>
<tr>
<td>24</td>
<td>Seal</td>
<td>Note B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Fairing</td>
<td>Glass Cloth No.181</td>
<td>Glass Cloth No. 181</td>
<td>0081 00</td>
</tr>
<tr>
<td>26</td>
<td>Pin, Hinge</td>
<td>MS2023P2</td>
<td>MS2023-P2</td>
<td>0095 00</td>
</tr>
<tr>
<td>27</td>
<td>Seal</td>
<td>Note B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Weld Assy</td>
<td>0.032 5052 H38</td>
<td>0.032 5052 H38</td>
<td>0086 00</td>
</tr>
<tr>
<td>29</td>
<td>Screen</td>
<td>Note D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace seal with synthetic rubber, 0.032-inch, MIL-R-6855 CLI GR 40.
C. Replace damaged bumpers with new 201-180401-00.
D. Replace with original material.
E. Damage other than minor, replace with P51001.
NOTE

Numbered items in Figure 10 correspond to the respective items in Table 9.

Figure 10. Engine Shelf and Wash

Table 9. Engine Shelf and Wash

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Doubler</td>
<td>0.025 301 ANL Cres</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Doubler</td>
<td>0.032 301 ANL Cres</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Doubler</td>
<td>0.040 2024-T3 Clad</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Repair or replace with original material.
NOTE
Refer to Table 10 for index number reference.

Figure 11. Aft Landing Gear Fairing

Table 10. Aft Landing Gear Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zee</td>
<td>0.032 2024-T4 CLAD</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Block</td>
<td>Phenolic MIL P 15035 Type FBM.</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Skin</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Doubler</td>
<td>0.025 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Clip</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. If damaged, replace with new block fabricated from original material.
NOTE
Refer to Table 11 for index number reference.

Figure 12. Aft Landing Gear Access Panel, Pod Fairing and Work Platform, and Aft Landing Gear Pod Fairing (Sheet 1 of 2)
NOTE

Refer to Table 11 for index number reference.

Figure 12. Aft Landing Gear Access Panel, Pod Fairing and Work Platform, and Aft Landing Gear Pod Fairing (Sheet 2 of 2)
### Table 11. Aft Landing Gear Access Panel, Pod Fairing and Work Platform, and Aft Landing Gear Pod Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Former</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Cover</td>
<td>3 Ply, No 181 Glass Cloth</td>
<td>3 Ply, No 181 Glass Cloth</td>
<td>0081 00</td>
</tr>
<tr>
<td>3</td>
<td>Doubler</td>
<td>0.025 2024-T4 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Channel</td>
<td>0.050 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Former</td>
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<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Skin</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>7</td>
<td>Angle</td>
<td>8-Ply, No. 181 Glass Cloth</td>
<td>8-Ply, No. 181 Glass Cloth</td>
<td>0081 00</td>
</tr>
<tr>
<td>8</td>
<td>Chafing Strip</td>
<td>0.125 Phenolic Laminate</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Skin, Outer</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>10</td>
<td>Core</td>
<td>1.222 3.4-1/4-15N 3003</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>ALCOA 13637 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Skin</td>
<td>0.016 2024-T4 Clad</td>
<td>0.020 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>13</td>
<td>Skin</td>
<td>0.012 2024-T4 Clad</td>
<td>0.016 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>14</td>
<td>Stiffener</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Skin</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
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<tr>
<td>16</td>
<td>Stiffener</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>17</td>
<td>Stiffener</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>18</td>
<td>Stiffener</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>19</td>
<td>Stiffener</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>20</td>
<td>Edge Member</td>
<td>3-Ply Scotchply</td>
<td>3-Ply Scotchply</td>
<td>0081 00</td>
</tr>
<tr>
<td>21</td>
<td>Core</td>
<td>1.222 23. 4-1/8-60N 3003</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>22</td>
<td>Stiffener</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
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<tr>
<td>23</td>
<td>Stiffener</td>
<td>0.032 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>24</td>
<td>Former</td>
<td>0.025 7075-T6 Clad</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>25</td>
<td>Chafing Strip</td>
<td>Rigid Polyamide</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>26</td>
<td>Skin</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>27</td>
<td>Former</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>28</td>
<td>Channel</td>
<td>0.050 7075-T6 Clad</td>
<td>0.063 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>29</td>
<td>Finger Plate</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>30</td>
<td>Finger Plate</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Damage to doublers necessitates replacement of the damaged portion with original material.
C. Sandwich honeycomb construction, repair with original material.
D. Replace with new length of original material for damage other than negligible.
E. Apply walkway material (Item 193, WP 0157 00), as required.
NOTE
Refer to Table 12 for index number reference.

Figure 13. Pod, Sta 460 to Sta 482

Table 12. Pod, Sta 460 to Sta 482

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>ALCOA 22008 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>ALCOA 22477</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Web</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

0115 00-24
### Table 12. Pod, Sta 460 to Sta 482 - continued

<table>
<thead>
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<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
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<td>5</td>
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<td>ALCOA 22477 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
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<tr>
<td>6</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Step Guard</td>
<td>Note G</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>0.032 7075-T6 Clad</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
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<tr>
<td>10</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
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<tr>
<td>11</td>
<td>Step</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Skin Assy</td>
<td>Note F</td>
<td>--</td>
<td>0083 00</td>
</tr>
<tr>
<td>13</td>
<td>Door</td>
<td>0.032 2024-4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>14</td>
<td>Hinge Assy</td>
<td>Note B</td>
<td>--</td>
<td>0093 00</td>
</tr>
<tr>
<td>15</td>
<td>Jumper</td>
<td>MS25083-2AC3</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>16</td>
<td>Seal, Plain, Encased</td>
<td>MS2523C4R</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>17</td>
<td>Grommet</td>
<td>MS35490-2</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>18</td>
<td>Angle</td>
<td>ALCOA 44076 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Attachment</td>
<td>0.050 7075-T6 Clad</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Stiffener</td>
<td>AND10133-0601 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>21</td>
<td>Bushing, Flange</td>
<td>Note D</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>22</td>
<td>Channel</td>
<td>0.063 7075-T6 Clad</td>
<td>0.071 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>23</td>
<td>Shim</td>
<td>Laminated</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>24</td>
<td>Latch Attach Assy.</td>
<td>Note E</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>25</td>
<td>Clip</td>
<td>0.063 7075-T6 Clad</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>26</td>
<td>Cap</td>
<td>ALCOA 22008 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>27</td>
<td>Stiffener</td>
<td>AND10133-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>28</td>
<td>Attachment</td>
<td>Note C</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>29</td>
<td>Web</td>
<td>0.032 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>30</td>
<td>Bracket</td>
<td>0.040 2024-T4 Clad</td>
<td>0.040 2024-T4 Clad</td>
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<tr>
<td>31</td>
<td>Doubler</td>
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</tr>
<tr>
<td>32</td>
<td>Stiffener</td>
<td>AND10133-0601 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Repair or replace with original material.
C. Damage other than minor, replace with new 114S5807-1 LH or -2 RH.
D. Damage other than minor, replace with new NAS77-5-018.
E. Damage other than minor, replace with new 114S5807-3 LH or -4 RH.
F. Bonded sandwich honeycomb construction, use original material.
G. Damage other than minor, replace with 114S3914-3.
NOTE
Refer to Table 13 for index number reference.

Figure 14. Aft Pod Access Panel
Table 13. Aft Pod Access Panel

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Jumper</td>
<td>Note D</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Step</td>
<td>0.032 20245-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Hinge Assy</td>
<td>MS20001P4</td>
<td>MS20001P4</td>
<td>0093 00</td>
</tr>
<tr>
<td>4</td>
<td>Jumper</td>
<td>Note D</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Door</td>
<td>0.032 2024-T4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
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<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Member, Edge</td>
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<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Skin Assy</td>
<td>Note B</td>
<td>Note C</td>
<td>0083 00</td>
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<td>9</td>
<td>Angle</td>
<td>VS90529</td>
<td>Note C</td>
<td>0088 00</td>
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<tr>
<td>10</td>
<td>Panel Assy</td>
<td>Note B</td>
<td>--</td>
<td>0083 00</td>
</tr>
<tr>
<td>11</td>
<td>Jumper Assy</td>
<td>Note D</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Hinge</td>
<td>VS90528</td>
<td>Note C</td>
<td>0093 00</td>
</tr>
<tr>
<td>13</td>
<td>Hinge Pin</td>
<td>MS202553P3</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Access Door</td>
<td>Note B</td>
<td>--</td>
<td>0083 00</td>
</tr>
<tr>
<td>15</td>
<td>Retainer Assy</td>
<td>0.100 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Sandwich honeycomb construction; repair or replace with original material. Refer to WP 0083 00.
C. Repair or replace with original material.
D. If damaged, replace with new jumper, MS25083-3BB7. Make new jumper from MS25036-111 and MS25036-157 lugs.
NOTE

Refer to Table 14 for index number reference.

Figure 15. Engine Inlet Screen and Bypass Screen
### Table 14. Engine Inlet Screen and Bypass Screen

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lip Assy Upper</td>
<td>Note D</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>2</td>
<td>Screen</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Face Plate</td>
<td>0.063 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Spacer</td>
<td>0.160 2024-T3 Clad</td>
<td>0.160 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Face Plate</td>
<td>0.063 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Retainer</td>
<td>Note C</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Latch Assy</td>
<td>Note G</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Pad</td>
<td>0.125 Nyl Strip L-P-410a</td>
<td>Note H</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Lip Assy Lower</td>
<td>Note D</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>10</td>
<td>Hinge Assy</td>
<td>MS20001P8-7200</td>
<td>MS20001P8-7200</td>
<td>0093 00</td>
</tr>
<tr>
<td>11</td>
<td>Panel Assy Hinged</td>
<td>Note D</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>12</td>
<td>Latch Pin</td>
<td>Note F</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>13</td>
<td>Clip</td>
<td>0.063 304 Cres ½ Hd</td>
<td>0.063 304 Cres ½ Hd</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Latch</td>
<td>MS20001P8</td>
<td>--</td>
<td>0093 00</td>
</tr>
<tr>
<td>15</td>
<td>Latch</td>
<td>MS20001P8</td>
<td>--</td>
<td>0093 00</td>
</tr>
<tr>
<td>16</td>
<td>Eyelet</td>
<td>0.063 304 Cres ½ Hd</td>
<td>0.063 304 Cres ½ Hd</td>
<td>--</td>
</tr>
<tr>
<td>17</td>
<td>Cable Assy</td>
<td>BACC13Y3-100</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>18</td>
<td>Cushion</td>
<td>0.250 BMSI-23 Sii Rub.</td>
<td>Note H</td>
<td>0095 00</td>
</tr>
<tr>
<td>19</td>
<td>Cushion Nose</td>
<td>0.250 BMSI-23 Sii Rub.</td>
<td>Note H</td>
<td>0095 00</td>
</tr>
<tr>
<td>20</td>
<td>Screen Assy Lower</td>
<td>Note D</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>21</td>
<td>Strap</td>
<td>0.040 2024-T4 Clad</td>
<td>0.040 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>22</td>
<td>Screen Assy Fine Mesh</td>
<td>Note E</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.

B. Woven mesh, 304 stainless steel, 0.063-inch wire dia., 0.187-inch opening, double crimp, Federal Spec. RR-W-360A Type 1, Class 1.

C. Damage other than minor, replace with new D1020-1.

D. Pre-impregnated glass reinforcements; maximum panel thickness 0.080-inch.

E. Woven wire mesh, 304 stainless steel per RR-360A, Type E1 Class 1, 14 x 14 mesh, 0.020-inch wire diameter.

F. Damage other than minor, replace with new 234P5052-5 LH or -6 RH.

G. Replace broken latch with new 9170-Rev J.

H. Replace using original material.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT SECTION FORMER REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Aluminum Sheet (Item 42.1, WP 0157 00)
Gloves, Chemical and Oil (Item 106, WP 0157 00)
Primer, Epoxy (Item 140, WP 0157 00)
Steel Sheet (Item 167, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0083 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair procedures for the following aft section formers. Refer to Figure 1.

1. Former, sta 440
2. Former, sta 460
3. Former, sta 482 and Bellcrank Support Fitting Doubler
4. Former, sta 502
5. Former, sta 520
6. Former, sta 534
7. Former, sta 555
8. Former, sta 575
9. Former, sta 594
Figure 1. Aft Section Formers
NOTE

Refer to Table 1 for index number reference.
Table 1. Former, Sta 440

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>0.375 7075-T651</td>
<td>0.375 7075-T651</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Attachment</td>
<td>2014-T6 Forging</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>VS90110 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
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<tr>
<td>5</td>
<td>Cap</td>
<td>VS90114 7075-T6</td>
<td>0.190 4130</td>
<td>0088 00</td>
</tr>
<tr>
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<td>Cap</td>
<td>VS90313 7075-T6</td>
<td>0.190 4130</td>
<td>0088 00</td>
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NOTES

A. All dimensions are in inches.
B. Component of bonded assembly. Repair using procedure for sandwich honeycomb construction. Refer to WP 0083 00.
C. Replace with new attachment, 114S3830-5.
D. Replace with new attachment, 114S3829-1.
NOTE

Refer to Table 2 for index number reference.

Figure 3. Former, Sta 460
### Table 2. Former, Sta 460

<table>
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<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
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### NOTES

A. All dimensions are in inches.
B. The LH formers are shown. The RH formers are similar in construction. The materials listed are applicable to the LH and RH configurations.
C. Bonded assembly is made of sandwich honeycomb construction.
D. With ferry fuel provisions, MWO 55-1520-240-50-6.
NOTE

Refer to Table 3 for index number reference.

Figure 4. Former, Sta 482 and Bellcrank Support Fitting Doubler (Sheet 1 of 4)
Table 3. Former, Sta 482 and Bellcrank Support Fitting Doubler

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
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<th>WORK PACKAGE</th>
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NOTES
A. All dimensions are in inches.
B. For damage other than minor, replace with new fitting, 114S3807-1 LH or 114S3807-2 RH.
C. Insulate dissimilar metals. Refer to WP 0078 00.
D. For damage other than minor, replace with new fitting, 114S3817-39 LH or 114S3817-41 RH.
E. For damage other than minor, replace with new fitting 114S3848-19 LH or 114S3848-21 RH.
F. For damage other than minor, replace with section of original material.
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4

1. Drill out existing rivets. Remove doubler.

2. Drill stop holes at ends of cracks. Use a No. 41 drill bit.

3. Fabricate new doubler. Use steel sheet (Item 167, WP 0157 00) 0.090-inch thick.

4. Fabricate filler if required. Use aluminum sheet 0.040-inch thick (Item 42.1, WP 0157 00).

5. Fit doubler and filler to forward side of frame, sta 482.

6. Drill existing rivet holes in doubler and filler.

7. Drill 17 new rivet holes in doubler. Use No. 11 drill bit.

8. Stiffener (114S3304-49) and flange of doubler. Use No. 11 drill bit.

9. Countersink three holes under support assembly (114S3383) to 100 degrees.

10. Remove doubler and filler. Deburr as required.

**WARNING**

11. Prime parts and drill seven new rivet holes. Use epoxy primer (Item 140, WP 0157 00). Wear gloves (Item 106, WP 0157 00).

12. Install doubler and filler.
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

**FASTENER LEGEND**

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<td><strong>REMOVE EXISTING RIVETS</strong></td>
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**VIEW LOOKING FORWARD STA 482**

**Figure 4. Former, Sta 482 and Bellcrank Support Fitting Doubler (Sheet 2 of 4)**

**Figure 4. Former, Sta 482 and Bellcrank Support Fitting Doubler (Sheet 3 of 4)**
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

Figure 4. Former, Sta 482 and Bellcrank Support Fitting Doubler (Sheet 4 of 4)
NOTE

Refer to Table 4 for index number reference.

Figure 5. Former, Sta 502
Table 4. Former, Sta 502

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</table>

NOTES
A. All dimensions are in inches.
B. For damage other than minor, replace with a new fitting, 114S3816-1 LH or 114S3816-2 RH.
C. For damage other than minor, replace with a new fitting, 114S3819-39 LH or 114S3819-41 RH.
NOTE

Refer to Table 5 for index number reference.

Figure 6. Former, Sta 520

Table 5. Former, Sta 520

<table>
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<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
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<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
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</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Cap</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Stiffener</td>
<td>AND10136-3001 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. The LH former is shown. The RH former is similar in construction. The original and repair materials listed are applicable to LH and RH configuration.
NOTE

Refer to Table 6 for index number reference.

Figure 7. Former, Sta 534 (Sheet 1 of 11)

Table 6. Former, Sta 534

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fitting</td>
<td>2014-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Fitting</td>
<td>2014-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>AND10136-1401 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>
Table 6. Former, Sta 534 - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>AND10136-1401 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>ALCOA 9484 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>ALCOA 43774 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Cap Strip</td>
<td>0.050 Cres Sheet</td>
<td>0.050 Cres Sheet</td>
<td>0087 00</td>
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<tr>
<td>8</td>
<td>Fitting</td>
<td>2014-T6</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Doubler</td>
<td>0.071 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
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<td>Cap</td>
<td>ALCOA 33495 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
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<tr>
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<td>Stiffener</td>
<td>0.063 7075-T6 Bare</td>
<td>0.080 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Doubler</td>
<td>0.071 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>13</td>
<td>Cap</td>
<td>ALCOA 34774 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
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<td>AND10134-1006 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
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<td>15</td>
<td>Fitting</td>
<td>2014-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
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<td>16</td>
<td>Fitting</td>
<td>2014-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>17</td>
<td>Bracket</td>
<td>0.05 301 Cres</td>
<td>0.050 301 Cres</td>
<td>0087 00</td>
</tr>
<tr>
<td>18</td>
<td>Cap</td>
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<td>0.100 4130</td>
<td>0088 00</td>
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<tr>
<td>19</td>
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<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
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<tr>
<td>20</td>
<td>Cap</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
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<tr>
<td>21</td>
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<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
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<tr>
<td>22</td>
<td>Bracket</td>
<td>0.050 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
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<td>23</td>
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<td>0.040 2024-T3 Clad</td>
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<tr>
<td>24</td>
<td>Cap</td>
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<td>0.100 4130</td>
<td>0088 00</td>
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<tr>
<td>25</td>
<td>Angle</td>
<td>AND10134-1006 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
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<td>26</td>
<td>Stiffener</td>
<td>ALCOA 66017 7075-T6</td>
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<td>0088 00</td>
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<tr>
<td>27</td>
<td>Web</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>28</td>
<td>Stiffener</td>
<td>ALCOA 9484 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>29</td>
<td>Cap</td>
<td>VS90312 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
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<tr>
<td>30</td>
<td>Stiffener</td>
<td>ALCOA 9484 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>31</td>
<td>Angle</td>
<td>ALCOA 52735 7075-T6</td>
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<td>0088 00</td>
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<tr>
<td>32</td>
<td>Stiffener</td>
<td>ALCOA 9484 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>33</td>
<td>Reinforcement</td>
<td>0.080 7075-T6 Clad</td>
<td>0.090 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>34</td>
<td>Stiffener</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with new fitting 114S3825-13 and -17 (aft and fwd LH respectively) or -15 and -19 (aft and fwd RH respectively).
C. Replace with new fitting 114S3825-21 and -23 (aft and fwd LH respectively) or -22 and -24 (aft and fwd R/H respectively).
D. Replace with new fitting 114S3848-11 and -17 (aft and fwd LH respectively) or -13 and -15 (aft and fwd RH respectively).
NOTE

Refer to Table 7 for index number reference.

Figure 7. Former, Sta 534 Repair (Sheet 2 of 11)
NOTE

Refer to Table 7 for index number reference.

NOTE

Refer to Sheet 5 for rivet/fastener codes.

Figure 7. Former, Sta 534 Repair (Sheet 3 of 11)
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

NOTE

Refer to Table 7 for index number reference.

Figure 7. Former, Sta 534 Repair (Sheet 4 of 11)
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

RIVET/FASTENER CODES

- 4 NAS1466-04 AND NAS1080-06
- 6 NAS1466-06 AND NAS1080-06
- 7 NAS1466-07 AND NAS1080-06
- 8 NAS1466-08 AND NAS1080-06
- 9 NAS1466-09 AND NAS1080-06
- 10 NAS1466-10 AND NAS1080-06
- 11 NAS1466-11 AND NAS1080-06
- 12 NAS1466-12 AND NAS1080-06
- 10, 11, OR -11, OR -12 AND OR 12 NAS1080-06
- 8 M7885/4-5-4
- 6 M7885/4-5-6
- 7 M7885/4-5-7

Figure 7. Former, Sta 534 Repair (Sheet 5 of 11)
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

NOTE
Refer to Sheet 5 for rivet/fastener codes.

Figure 7. Former, Sta 534 Repair (Sheet 6 of 11)
NOTE

Refer to Sheet 5 for rivet/fastener codes

Figure 7. Former, Sta 534 Repair (Sheet 7 of 11)
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

NOTE
Refer to Sheet 5 for rivet/fastener codes

Figure 7. Former, Sta 534 Repair (Sheet 8 of 11)
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

NOTE
Refer to Sheet 5 for rivet/fastener codes

Figure 7. Former, Sta 534 Repair (Sheet 9 of 11)
NOTE

Refer to Table 7 for index number reference.

NOTES

Refer to Sheet 5 for rivet/fastener codes.

Figure 7. Former, Sta 534 Repair (Sheet 10 of 11)
NOTE

Refer to Table 7 for index number reference.

NOTE

Refer to Sheet 5 for rivet/fastener codes.

Figure 7. Former, Sta 534 Repair (Sheet 11 of 11)
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

### Table 7. Former, Sta 534 Repair

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strap</td>
<td>0.080 301 Cres</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Reinforcement Plate</td>
<td>0.080 301 Cres 1/4H</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Filler</td>
<td>0.050 2024-T3 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Filler</td>
<td>0.050 2024-T3 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Radius Block</td>
<td>0.125 2024-T3 Clad</td>
<td>Notes B &amp; C</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Clip</td>
<td>0.032 2024-T3 Clad</td>
<td>Notes B &amp; C</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Clip</td>
<td>ALCOA 31823 7075-T6 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Cap Strip</td>
<td>0.050 Cres 17-7PH</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Spacer</td>
<td>0.050 7075-T6 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Filler</td>
<td>0.090 2024-T3 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Splice</td>
<td>0.080 7075-T6 Clad</td>
<td>Notes B &amp; C</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Strap</td>
<td>0.080 7075-T6 Clad</td>
<td>Notes B &amp; C</td>
<td>--</td>
</tr>
<tr>
<td>13</td>
<td>Support</td>
<td>0.063 7075-T6 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Bracket</td>
<td>0.040 2024-T4 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>15</td>
<td>Web</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>16</td>
<td>Support Bracket</td>
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<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>17</td>
<td>Doubler</td>
<td>0.032 2024-T4 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>18</td>
<td>Finger Plate</td>
<td>0.032 2024-T4 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Fabricate new part from same material as original.
C. Effective only for MFG Serial No. M3004 thru M3041, (81-23381 thru 81-23389), (82-23762 thru 82-23780), and (83-24102 thru 83-24111). Refer to WP 0164 00.
NOTE

Refer to Table 8 for index number reference.

Figure 8. Former, Sta 555 (Sheet 1 of 2)
NOTE

Refer to Table 8 for index number reference.

Figure 8. Former, Sta 555 (Sheet 2 of 2)
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

Table 8. Former, Sta 555

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fitting</td>
<td>AND10136-1601 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Doubler</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Web</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Doubler</td>
<td>0.040 2024-T42 Clad</td>
<td>0.050 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. This part is used on aircraft serial numbers 92-0367 and 92-0368.

NOTE

Refer to Table 9 for index number reference.

---

**Figure 9. Former, Sta 575 (Sheet 1 of 2)**
NOTE

Refer to Table 9 for index number reference.

Figure 9. Former, Sta 575 (Sheet 2 of 2)

Table 9. Former, Sta 575

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<tr>
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<td>Web</td>
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<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

Table 9. Former, Sta 575 - continued

<p>| | | | |</p>
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<tbody>
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<td>0.063 2024-T42 Bare</td>
<td>0.071 2024-T4 Clad</td>
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<td>0.040 7075-T6 Clad</td>
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</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. This part is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE

Refer to Table 10 for index number reference.

Figure 10. Former, Sta 594
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

Table 10. Former, Sta 594

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>0.050 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
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<tr>
<td>2</td>
<td>Cap</td>
<td>VS90307 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Angle</td>
<td>VS90307 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
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<td>Stiffener</td>
<td>AND10136-1401 7075-T6</td>
<td>Note D</td>
<td>0088 00</td>
</tr>
<tr>
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<td>Cap</td>
<td>VS90311 7075</td>
<td>0.125 4130</td>
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<tr>
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<td>0.090 7075-T6 Clad</td>
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<td>Fitting</td>
<td>2014-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
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<td>Stiffener</td>
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<td>0.080 2024-T3</td>
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</tr>
<tr>
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<td>ALCOA 33495 7075-T6511</td>
<td>0.040 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>13</td>
<td>Cap</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Double Seal Assy</td>
<td>0.063 2024-T3  BAC1521-204</td>
<td>0.063 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>15</td>
<td>Double Stiffener</td>
<td>0.090 7075-0 0.063 2024-T3</td>
<td>0.090 7075-0 0.071 2024-T3</td>
<td>0086 00</td>
</tr>
<tr>
<td>16</td>
<td>Web</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 7075-T6</td>
<td>0086 00</td>
</tr>
<tr>
<td>17</td>
<td>Stiffener</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Cap</td>
<td>AND10136-2006 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Angle</td>
<td>AND10134-1205 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Strap</td>
<td>0.063 Cres 17-7 PH</td>
<td>0.063 Cres 17-7 PH</td>
<td>0088 00</td>
</tr>
<tr>
<td>21</td>
<td>Stiffener</td>
<td>AND10134 1006 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>22</td>
<td>Cap</td>
<td>VS90312 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>23</td>
<td>Channel</td>
<td>0.090 Cres MIL-S-25043, 17-7 PH Cond A 0.050 CRES 17-7 PH</td>
<td>0.090 Cres MIL-S-25043 17-7 PH Cond A 0.050 CRES 17-7 PH</td>
<td>0087 00</td>
</tr>
<tr>
<td>24</td>
<td>Channel</td>
<td>0.090 Cres MIL-S-25043, 17-7 PH Cond A</td>
<td>0.090 Cres MIL-S-25043, 17-7 PH Cond A</td>
<td>0087 00</td>
</tr>
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</table>
STA 482 BELLCRANK SUPPORT FITTING FORMER REPAIR – Refer to Figure 4, Sheet 2 thru Sheet 4 – continued

Table 10. Former, Sta 594 - continued

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Tee</td>
<td>ALCOA 43774 7075-T6511</td>
<td>ALCOA 43774 7075-T6511</td>
</tr>
<tr>
<td>26</td>
<td>Tee</td>
<td>ALCOA 52361 7075-T6511</td>
<td>ALCOA 52361 7075-T6511</td>
</tr>
<tr>
<td>27</td>
<td>Support</td>
<td>Note C</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with a new fitting, 114S3848-33 LH, -35 RH.
C. Replace with a new support, 145S3805-8 LH, -9 RH.
D. For damage other than minor, replace with section of original material.
E. This part is used on aircraft serial numbers 92-0367 and 92-0368.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT  
CH-47D HELICOPTER  
AFT SECTION BEAM REPAIRS

INITIAL SETUP

Test Equipment:  
As Required

Tools and Special Tools:
T-182
114G1411-1

Material/Parts:
Primer, Epoxy (Item 140, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0081 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers repair procedures for the following: Refer to Figure 1.

1. Aft Crown Beams
2. Aft Drive Shaft Support Beam
3. Aft Fuselage Structure and Web
4. Combining Transmission Support
5. Combining Transmission Drip Pan
Figure 1. Aft Section Beams
REPAIR

NOTE

Refer to Table 1 for index number reference.

Figure 2. Aft Crown Beam Sta 440 to Sta 627

Table 1. Aft Crown Beam Sta 440 to Sta 627

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stringer</td>
<td>AND10136-1406 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Angle</td>
<td>0.050 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Cap</td>
<td>0.050 7075-T6 Bare</td>
<td>0.063 70750T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>0.050 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Web</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>7</td>
<td>Cap</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Stiffener</td>
<td>VS70504-2 7075-T6</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Cap</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>Note C</td>
<td>Note D</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Cap</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Web</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. The LH beam is shown. Repair materials are the same for the RH beam.
C. Stiffener and clip are made from 0.040-inch 2024-T3 CLAD.
D. Install angle and clip with hex drive fasteners where angle attaches to inboard cap member (2 places) and where clip attaches to angle at outboard end (2 places).
NOTE

Refer to Table 2 for index number reference.

Figure 3. Aft Drive Shaft Support Beam (Sheet 1 of 2)

Table 2. Aft Drive Shaft Support Beam

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>AND10135-1004 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Gusset</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>ALCOA 13637 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Bracket</td>
<td>0.090 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>ALCOA 13637 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Angle</td>
<td>ALCOA 52735 7075-T6</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Web</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>
REPAIR – continued

Table 2. Aft Drive Shaft Support Beam - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Door</td>
<td>0.040 AZ31B-H24 Mag</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Web</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>11</td>
<td>Cap</td>
<td>AND10134-1401 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace with new angle fabricated from AND10133-1201 extrusion. Refer to Figure 3, Sheet 2 of 2.
C. Replace with new bracket, 114S3365-37 LH or -38 RH.
D. Replace with new door, 114S3365-5.
E. Replace or manufacture from original material.

Figure 3. Aft Drive Shaft Support Beam (Sheet 2 of 2)
REPAIR OF CRACKS IN THE VERTICAL WEB OF THE AFT DRIVE SHAFT SUPPORT BEAM, STA 500
Refer to Figure 3, Sheet 2 of 2

1. Remove existing angle adjacent to damaged area left or right, as applicable. This angle is made of 0.050-inch thick 7075-T6 aluminum alloy extrusion. The angle is attached to the web and gusset with a single row of MS20470AD4 rivets through each leg.

2. Fabricate a new angle from an aluminum extrusion 0.063-inch thick AND10133-1201 7075-T6 or 2024T4. Cut extrusion to 5.65-inches long; trim corners of leg that will be attached to gusset.

WARNING

EPOXY PRIMER

3. Prime new extrusion with two coats of epoxy primer (Item 140, WP 0157 00).

4. Install new angle using 5/32-inch diameter rivets, use existing rivet holes where possible.

Figure 4. Aft Drive Shaft Support Bracket Locating Fixture, 114G1411-1 (Sheet 1 of 2)
INSTALLATION OF AFT DRIVE SHAFT SUPPORT BRACKET LOCATING FIXTURE, 114G1411-1

CAUTION

Fixture, PN 114G1411-1, was issued for use on the CH-47C helicopter. Fixture must be modified by Corpus Christi Army Depot, per Drawing # 90SDSCC-D-0087, so that it is compatible with the CH-47D. Contact Contracting Officer for guidance.

The fixture may be used to locate and drill mounting holes in aft drive shaft support brackets. Operations may be performed on two brackets at the same time. Specific procedures for application of the locating fixture will vary with each repair.

Install locating fixture as follows:

1. Gain access to aft drive shaft cover and support beam. Remove driveshafts if installed.

2. Place forward locator assembly, 114G1411-2, on cabin floor. Position it beneath support beam.
INSTALLATION OF AFT DRIVE SHAFT SUPPORT BRACKET LOCATING FIXTURE, 114G1411-1
- continued

CAUTION
Improper hardware will reduce accuracy of locating fixture and may cause excessive misalignment of helicopter drive system.

3. Attach bracket assembly, 114G1411-6, to forward locator assembly. Use two bolts, NAS 1306-25, and two nuts, AN315C-6R.


5. Install two bushing plates, 114G1411-24, on the drill plate assembly, 114G1411-8. Use two bolts, AN4C-11A for each bushing plate.

6. Place forward locator assembly, 114G1411-2, and attached parts on aft drive shaft support beam. Position locator assembly as far forward as possible. Temporarily rest locator assembly arm on support beam caps.

7. Place aft locator assembly, 114G1411-3, on cabin floor.

8. Attach bracket assembly, 114G1411-6, to aft locator assembly. Use two bolts, NAS 1306-25, and two nuts, AN315C-6R.

9. Slide locator plug, 114G1411-12, into bracket assembly, 114G1411-6.

10. Place aft locator assembly, 114G1411-3, and attached parts on aft drive shaft support beam. Temporarily rest locator assembly arms on support beam caps.

11. Attach forward locator assembly to aft locator assembly. Use two bolts, NAS 1306-25, and two nuts, AN315C-6R.

12. Attach locator assembly, 114G1411-7, to combining transmission coupling. Use three bolts, NAS 1310-12, and three nuts, AN315C-10R.

13. Slide locator plug, 114G1411-12, into aft transmission splines.

14. Install locator pin, CL-8-LP, through an undamaged bracket, if applicable.

15. Check to make sure proper fasteners have been installed and tightened.
USE OF AFT DRIVE SHAFT SUPPORT BRACKET LOCATING FIXTURE, 114G1411-1

**CAUTION**

Improper torque on transmission attachment hardware may result in excessive misalignment of helicopter drive system.

**NOTE**

The aft drive shaft support bracket locating fixture, 114G1411-1, will not locate the bracket on station line. Station location must be obtained from existing bracket.

1. Make sure combining and aft transmissions are properly installed. Refer to TM 55-1520-240-23.
3. Make sure locating fixture is securely assembled and installed.
4. Drill a 0.3125-inch plus 0.0070 or minus 0.0010-inch diameter hole through bracket or brackets.
5. Carefully disassemble and remove locating fixture. Removal is reverse of installation except as follows:
   a. It is not necessary to remove the following parts from forward locator assembly, 114G1411-2.
      (1) Bushing plates, 114G1411-24.
      (2) Drill plate assembly, 114G1411-8.
      (3) Bracket assembly, 114G1411-6.
      (4) Locator assembly, 114G1411-7.
   b. It is not necessary to remove the following parts from aft locator assembly.
      (1) Bracket assembly, 114G1411-6.
      (2) Locator plug, 114G1411-12.
   c. Carefully clean components of locating fixture prior to placing them in container, 114G1410-4. Foreign matter remaining on matting surfaces of fixture may cause interference and misalignment on reassembly.

**WARNING**

EPOXY PRIMER

6. Deburr holes drilled in bracket and apply epoxy primer (Item 140, WP 0157 00).
NOTE

Refer to Table 3 for index number reference.

Table 3. Aft Fuselage Structure and Web, Sta 534 to Sta 555

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Doubler</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>2</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Cap Angle</td>
<td>ALCOA 71369 0.072 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Clip</td>
<td>0.050 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>5</td>
<td>Cap Angle</td>
<td>VS90116 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

Figure 5. Aft Fuselage Structure and Web, Sta 534 to Sta 555 (Sheet 1 of 2)
### Table 3. Aft Fuselage Structure and Web, Sta 534 to Sta 555 – continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Clip</td>
<td>0.050 2024-T4 Clad</td>
<td>0.050 2024-T4 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>8</td>
<td>Clip</td>
<td>0.063 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>9</td>
<td>Cap, Outboard</td>
<td>0.063 7075-T6 Bare</td>
<td>0.071 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Replace or manufacture from original material.

### NOTE

Refer to Table 4 for index number reference.

---

**Figure 5.** Aft Fuselage Structure and Web Sta, 534 to Sta 555 (Sheet 2 of 2)
USE OF AFT DRIVE SHAFT SUPPORT BRACKET LOCATING FIXTURE, 114G1411-1 - continued

Table 4. Aft Fuselage Structure and Web, Sta 534 to Sta 555

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Web</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Hanger</td>
<td>0.025 2024-T4 Clad</td>
<td>0.025 2024-T4 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace or manufacture from original material.

NOTE
Refer to Table 5 for index number reference.

Figure 6. Combining Transmission Support
## Table 5. Combining Transmission Support

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bushing</td>
<td>4130 Stlrd Bar</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Shim</td>
<td>Note G</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>Note H</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Support</td>
<td>Extrusion 2D14-T6</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Attachment</td>
<td>VS90520 7075-T6</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>ALCOA 22526 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Web</td>
<td>0.032 2024-T4 Clad</td>
<td>0.032 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Pan</td>
<td>Note I</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>AND10134-0701 7075-T6</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Channel</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Zee Angle</td>
<td>VS90603 7075-T6 Clad</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Zee Angle</td>
<td>VS90603 7075-T6 Clad</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>13</td>
<td>Angle</td>
<td>ALCOA 9802 7075-T6 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Angle</td>
<td></td>
<td>Note B</td>
<td>--</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.

B. Do not repair. Replace or manufacture from original material.

C. Damage other than minor, replace with new hoist attachment, 114S3814-1 LH or 114S3814-2 RH.

D. Damage other than minor, replace with new support, 234S3821-1 LH or 234S3821-2 RH. Use tool (T-182, TM 55-1520-240-23). At least one fitting must be in place for a reference point. Otherwise, a method of referencing the exact location must be devised.


F. Damage other than minor, replace with 114S3353-71 LH or 114S3353-64 RH.

G. Replace with new shim.

H. Damage other than minor, replace with 114S3705-3 LH or 114S3705-4 RH.

I. Damage other than minor, replace with 114S3704-3.
NOTE

Refer to Table 6 for index number reference.

Figure 7. Combining Transmission Drip Pan

Table 6. Combining Transmission Drip Pan

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<td>0.050 2024-T3 Clad</td>
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<td>--</td>
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<td>Angle</td>
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<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
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USE OF AFT DRIVE SHAFT SUPPORT BRACKET LOCATING FIXTURE, 114G1411-1 - continued

Table 6. Combining Transmission Drip Pan - continued

<table>
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<th>Lh Material</th>
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<td>Note C</td>
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<td>Glass Cloth No.181</td>
<td>0081 00</td>
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</table>

NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with 145S3618-38.
C. Damage other than minor, replace with 145S3304-10.
D. Damage other than minor, replace with 145S3644-4 or 145S3644-6.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
ENGINE MOUNT REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Locating Fixture, 114G1242-1
Engine Mount Repair Kit, 114D5009-1 or 145G0333-1

Material/Parts:
Primer, Epoxy (Item 140, WP 0157 00)
Cloth, Cleaning (Item 73, WP 0157 00)
Dry Ice – locally procured
Methanol (Item 118.1, WP 0157 00)
Acetone (Item 20, WP 0157 00)
Loctite 609 (local purchase authorized)
Loctite Primer, T7471 (local purchase authorized)

Personnel Required:
As Required

References:
TM 55-1520-240-23 Series
TM 1-1500-204-23 Series
Boeing Aerospace Service Note 145-022, Rev 1

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes inspection criteria, repair procedures, and replacement of the forward and aft engine mount fittings. Procedures for replacement of mount fittings include aircraft preparation and use of locating fixture, 114G1242-1. Contained herein, are revised damage limits developed by Boeing (critical dimensional limitations) for the engine mount lugs (Boeing Aerospace Service Note 145-022, Rev 1).
NEGLIGIBLE DAMAGE

Negligible damage can be permitted to exist as is, or be repaired by a simple procedure such as blending. Nicks, gouges and scratches on the engine mounts and drag strut attachments, with the exception of the lugs, are negligible if the depth after blending does not exceed 10 percent of the material thickness or 0.040-inch, whichever is less. The area must be large enough to blend smoothly with adjacent undamaged areas. Blending must be done in a circumferential direction only. Refer to Figure 2. Detectable damage should be repaired as soon as practical. Touch-up refinishing of damaged paint should be accomplished as soon as possible to prevent corrosion.

REPAIRABLE DAMAGE

Repairable damage is classified as damage to the lug areas within the limits specified and correctable by blending, spotfacing, oversizing, and bushing/bearing replacement. Lug damage criteria are depicted in Figures 6 thru 12. Damage that exceeds the limits may still be repairable, but must be approved by AMRDEC, AED, MED Engineering. Refer to WP 0003 00 for instructions on submission of a Maintenance Engineering Call (MEC).
ENGINE MOUNT LUG CRITICAL DIMENSION DEFINITIONS

A. The most critical dimensions to be maintained for an acceptable lug are the lug thru-bore thickness or bore length "t" and the bore diameter "Ø". In addition, damage close to the critical cross section (3 to 9 o'clock plane) is more serious. While local blend repairs of damage have some effect on lug strength, this blending is generally not the limiting factor for determining lug serviceability. Most damage, repairable by blending, occurs in the thicker sections of the lugs between the outer edge of the spotface and the outer edge of the lug. Generally, more severe (deeper) local damage is tolerable around the extreme outer edges of the lug.

B. Dimension "D" refers to the deeper spotface (counterbore). Dimension "d" refers to the shallower spotface on the forward engine mount lugs.

C. No damage is permitted in spotfaces or on non-spotfaced lug faces adjacent to the bore. Re-spotfacing is required to eliminate any spotface damage. Do not reduce thickness below "t min". Blend repairs are not permitted to the spotface. Damage to non-spotfaced lug faces of the engine mount lugs should be removed by shallow spotfacing of that face just enough to remove the damage. Blend repairs are permitted in the area outside these spotfaced areas. Do not reduce thickness below "t min".

D. No damage to the thru-bore or the edges of the thru-bore is permitted. Rework by oversizing while not exceeding "Ø max" and/or re-spotfacing while maintaining "t min" is required.

E. Some engine mount lugs have rework, which exceed the limits specified here. The affected aircraft may or may not have the repairs documented in their logbooks. Generally, the limits specified here should be applied to evaluations of new damage rather than be used to evaluate previously repaired lugs. Generally, spotfaced depths will in most cases vary from lug to lug, but thru-bore thickness "t min" from spotface to spotface or from spotface to clevis face will be maintained.

F. It is critical that all blending to the lugs be in a circumferential direction only. Refer to Figure 2.

G. All spotfacing and bore oversizing must be accomplished with properly designed tooling with spotfacing and lapping piloting off of both lugs, and reaming piloting off of the opposite lug in order to maintain concentricity and perpendicularity requirements.

Figure 2. Engine Mount Lug Critical Dimension Definitions
ENGINE MOUNT LUG NOMINAL DIMENSIONS

NOTES

A. All dimensions are in inches.
B. Section views through lugs looking forward.
C. Left side mounts shown; right side opposite.
D. Ø 1.18-inch spotfaces should be opened up to Ø 1.38-inch when installing some larger oversize bushings. Refer to Figures 6 and 7.
E. 80-µ inch RHR surface finish minimum for all bores.
F. Some mounts have “A” and “C” lugs with 0.9370-inch bores and 1.38-inch outboard spotfaces.

Figure 3. Engine Mount Lug Nominal Dimensions
LOCATIONS OF THE FORWARD AND AFT ENGINE MOUNT LUGS

NOTES

A. Forward drag strut lug ("E" Lug) and aft drag strut lug ("H" Lug) not shown.
B. Left side mounts shown; right side opposite.

Figure 4. Engine Mount Lugs Location Definitions
LOCATION OF FORWARD AND AFT DRAG STRUT LUGS

NOTE
A. Left side Mounts shown; Right side opposite.

Figure 5. Drag Strut Lugs Location Definitions
FORWARD ENGINE MOUNT LUG WEAR LIMITS:

FORWARD ENGINE MOUNT, INBOARD LUG PAIR, INBOARD LUG “A” CRITICAL DIMENSIONS

<table>
<thead>
<tr>
<th>BORE Ø</th>
<th>a&lt;sub&gt;min&lt;/sub&gt;</th>
<th>b&lt;sub&gt;min&lt;/sub&gt;</th>
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<tbody>
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<td>+0.0005</td>
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</tr>
<tr>
<td>0.9844</td>
<td>0.408</td>
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DAMAGE AFTER BLENDING IN THIS HATCHED AREA OF FACE LIMITED TO d. IF DEPTH EXCEEDS d, SUBMIT MEC TO ENGINEERING FOR DISPOSITION.

CAUTION

Lug “A” outboard spotface must be opened up from 1.18-inch diameter to 1.38-inch diameter when using oversize bushings for bores 0.9375 and greater.

NOTES

A. All dimensions in inches.
B. Damage of 0.040 or less on lug outer edge between a and b shall be blended smoothly.
C. Depth D and d are measured spotface depth.
D. a<sub>3</sub>, a<sub>9</sub>, b, c, t, and Ø are all measured values.
E. a<sub>3</sub>, a<sub>9</sub>, b, c, and t shall not be less than their specified minimum values (a<sub>min</sub>, b<sub>min</sub>, c<sub>min</sub>, and t<sub>min</sub>).
F. Ø shall not be greater than Ø<sub>max</sub> = 0.9844.
G. Refer to Table 1 for bushing replacements.

Figure 6. Forward Engine Mount, Inboard Lug Pair, Inboard Lug “A” Critical Dimensions
FORWARD ENGINE MOUNT, INBOARD LUG PAIR, OUTBOARD LUG “B” CRITICAL DIMENSIONS

### NOTES

A. All dimensions in inches.
B. Damage of 0.040 or less on lug outer edge between a and b shall be blended smoothly.
C. Depth D is measured spotface dept
D. \( a_3, a_9, b, c, t, \) and \( \varnothing \) are all measured values.
E. \( a_3, a_9, b, c, \) and \( t \) shall not be less than their specified minimum values \( (\text{amin}, \text{bmin}, \text{cmin}, \text{amin}) \).
F. \( \varnothing \) shall not be greater than \( \varnothing_{\text{max}} = 0.9844 \).
G. Refer to Table 1 for bushing replacements.

**Figure 7.** Forward Engine Mount, Inboard Lug Pair, Outboard Lug “B” Critical Dimensions
FORWARD ENGINE MOUNT, OUTBOARD LUG PAIR, INBOARD LUG “C” CRITICAL DIMENSIONS

**CAUTION**

Lug “C” inner spotface must be opened up from 1.18-inch diameter to 1.38-inch diameter when using oversize bushings with bores 0.9375 and greater.

**NOTES**

A. All dimensions in inches.
B. Damage of 0.040 or less on lug outer edge between a and b shall be blended smoothly.
C. Depth D and d are measured spotface depth.
D. a₃, a₉, b, c, t, and Ø are all measured values.
E. a₃, a₉, b, c, and t shall not be less than their specified minimum values (a₃min, bmin, cmin, and tmin).
F. Ø shall not be greater than Ømax = 0.9844.
G. Refer to Table 1 for bushing replacements.

**Figure 8.** Forward Engine Mount, Outboard Lug Pair, Inboard Lug “C” Critical Dimensions
FORWARD ENGINE MOUNT, OUTBOARD LUG PAIR, OUTBOARD LUG “D” CRITICAL DIMENSIONS

### Table 1

<table>
<thead>
<tr>
<th>BORE $\varnothing$</th>
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<th>$t_{\text{min}}$</th>
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<td>0.368</td>
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</tr>
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**NOTES**

A. All dimensions in inches.
B. Damage of 0.040 or less on lug outer edge between a and b shall be blended smoothly.
C. Depth D is measured spotface depth.
D. $a_3$, $a_9$, b, c, t, and $\varnothing$ are all measured values.
E. $a_3$, $a_9$, b, c, and t shall not be less than their specified minimum values ($a_{\text{min}}$, $b_{\text{min}}$, $c_{\text{min}}$, and $t_{\text{min}}$).
F. $\varnothing$ shall not be greater than $\varnothing_{\text{max}} = 0.9844$.
G. Refer to Table 1 for bushing replacements.

**Figure 9.** Forward Engine Mount, Outboard Lug Pair, Outboard Lug “D” Critical Dimensions
FORWARD ENGINE MOUNT DRAG STRUT LUG “E”

NOTES

A. Refer to Table 1 for bushing replacement.

Figure 10. Forward Engine Mount Drag Strut Lug “E”
AFT ENGINE MOUNTS LUG WEAR LIMITS:

AFT ENGINE MOUNT INBOARD LUG “F” CRITICAL DIMENSIONS

<table>
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<tr>
<th>BORE Ø ±0.0005</th>
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<th>b&lt;sub&gt;min&lt;/sub&gt;</th>
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DAMAGE AFTER BLENDING IN THIS HATCHED AREA OF FACE LIMITED TO d. IF DEPTH EXCEEDS d, SUBMIT MEC TO ENGINEERING FOR DISPOSITION.

DAMAGE AFTER BLENDING IN THIS HATCHED AREA OF FACE LIMITED TO 0.040 DEEP

NOTES

A. All dimension are in inches.
B. Damage of 0.040 or less on lug outer edge between a and b shall be blended smoothly.
C. Depth d is measured spotface depth.
D. a, a<sub>b</sub>, b, c, t, and Ø are all measured values.
E. Ø shall not be greater than Ø<sub>max</sub> = 0.6875.
F. Refer to Table 1 for bushing replacement.

Figure 11. Aft Engine Mount Inboard Lug “F” Critical Dimensions
AFT ENGINE MOUNT OUTBOARD LUG “G” CRITICAL DIMENSIONS

NOTES

A. All dimensions are in inches.
B. Damage of 0.040 or less on lug outer edge between a and b shall be blended smoothly.
C. Depth d is measured spotface depth.
D. a₃, a₉, b, c, t, and Ø are all measured values.
E. a₃, a₉, b, c, and t shall not be less than their specified minimum values (a₃min, b₃min, c₃min, and t₃min).
F. Ø shall not be greater than Ø₃max = 0.8750.
G. Refer to Table 1 for bushing replacement.

Figure 12. Aft Engine Mount Outboard Lug “G” Critical Dimensions

GENERAL INFORMATION - APPLIES TO ALL LUG REPAIR AND REWORK

1. When bore oversizing (reaming) is necessary, start with the first size reamer larger than the measured bore diameter of the damaged lug. The reamers are sized 1/64-inch increments. Ream with the next larger size until all damaged to the bore is removed or (Ø₃max) is reached. Remove only as much material from the bore as is necessary to produce a clean hole.

NOTE

The “H” lug requires counterbore operation before first oversize (reaming) operation.

2. All bores must be line-reamed. Do not use adjustable reamers. Lubricate reamer pilot with multipurpose grease.
3. All spotfacing/back-spotfacing must be done without power tools, to minimize over machining of lug. Back-spotfacing requires the arbor to be turned counterclockwise. Lapping operations may be done with power tools using an appropriate lapping compound.
4. Repair (reaming, spotfacing, lapping, burnishing, blending of damage) to forward and aft engine mount fittings or drag struts should be followed by solvent cleaning and fluorescent penetrant or eddy-current inspection for cracks.
5. Following repair and inspection, alodine any bare aluminum. Following bushing installation, mask bushing and finish with two coats of epoxy primer (Item 140, WP 0157 00).
INSTALLATION OF REPAIR BUSHINGS IN ENGINE MOUNTS/DRAG STRUT

1. Remove damaged bushings.
2. Ream damaged lugs, inline with opposing lug, sufficiently to produce a perfect hole, but not larger than maximum of lug tolerance.
3. Re-spotface damaged lug, if necessary, sufficiently to produce a perfect spotface not to exceed lug tolerance. Refer to measurement of specific lug being spotfaced.

4. Bushing bores should be coated with un-thinned epoxy primer (Item 140, WP0157 00). Primer should be applied to bore just prior to bushing installation.
5. Installation of interference-fit bushings shall be "shrink fit" using appropriate alignment tooling as follows:

   a. Cold soak bushing and alignment tooling in a bath of dry ice and methanol (Item 118.1, WP 0157 00). Soaking the tooling helps retain temperature during installation. Use an insulated container that can be located close to the component being repaired. Close proximity provides for the necessary rapid bushing installation. Cold soak is complete after liquid stops boiling (usually less than 10 minutes).
   b. Apply a coating of epoxy primer (Item 140, WP 0157 00) to bore.
   c. When installing "A", "C", or "F" lug bushing, place bushing between the lug pair. Install the mandrel pilot in the opposite lug and engage the bushing installation.
   d. While the primer is still wet, remove bushing and tooling from cooling medium. Wipe off any frost with a clean cloth (Item 73, WP 0157 00), and immediately (less the 5 seconds) install bushing. The mandrel may be driven with a soft-faced hammer if required.
6. Check all shrink fit bushings after installation to ensure that they meet minimum ID requirements. If ID is smaller than specified after installation, bushing bores should be honed to within limits.
7. Refer to Table 1 for replacement bushing sizing.
ENGINE MOUNT/DRAG STRUT BUSHING DETAILS

NOTES

A. All dimensions are in inches.
B. Maximum machined surface finish 63-µ-inch RHR. Break all sharp edges.
C. Y and L dimensions are measured from lug bore.
D. Refer to Table 1 for bushing sizing.

Figure 13. Engine Mount/Drag Strut Bushing Details
AFT ENGINE MOUNT DRAG STRUT LUG “H”

NOTES

A. All dimensions are in inches.
B. Break all sharp edges.
C. Maximum machined surface finish 63-µ inch RHR.
D. Depth “d” is measured bore depth.
E. If using cad plated 4130 steel, dimensions shown are after plating.
F. Refer to Table 1 for alternate materials.
G. Replaces retainer 114S3706-1 or 114S3706-3.

Figure 14. Lug “H” Aft Engine Mount Drag Strut Bearing Retainer and Bore Definition
REPLACEMENT OF AFT ENGINE MOUNT DRAG STRUT BEARING - LUG “H”

The following is the procedure for spherical bearing replacement in the “H” lug. The roller-staking requirement remains. However, if this is impractical, bearing retention with LOCTITE 609 (local purchase authorized) is allowed.

**WARNING**

ACETONE

1. Remove and discard the bearing retainer and bearings. Deburr and thoroughly clean the bore with acetone (Item 20, WP 0157 00).

2. Measure the diameter of the bearing bore in the lug. If the bore diameter is 1.127-inch or less, install a new bearing and retainer. If the hole diameter is greater than 1.127-inch, install an oversize retainer. Apply a light coat of epoxy primer (Item 140, WP 0157 00) to the outer diameter of the bearing race, the bearing retainer, and the bore in the lug. Allow primer to dry.

**WARNING**

LOCTITE 609

**CAUTION**

Do not allow retaining compound (LOCTITE 609) to penetrate the moving parts of the bearing.

3. Using an appropriate roller-staking tool, stake the bearing retainer. If, for any reason, staking is impractical, the bearing may be retained by use of LOCTITE 609 (local purchase authorized).

4. Apply a light coat of primer/activator, LOCTITE-Primer T7471 (local purchase authorized), to the outer diameter of the bearing race, the bearing retainer, and the bore in the lug. Allow the primer to dry.

**NOTE**

If the lug bore diameter exceeds 1.126-inch, the bearing and bearing retainer may fit loosely, in which case, shrink-fit installation will not be necessary. Bearing and retainer, however, must be secured in position until retaining compound has cured.

**WARNING**

DRY ICE

METHANOL

5. Cold soak the bearing, bearing retainer, and installation mandrel in a dry ice and methanol (Item 8.1, WP 0157 00) bath (shrink-fit bearing installation).

6. While wearing chemical protective gloves, coat the lug bore with retaining compound (LOCTITE 609). Remove the installation mandrel, bearing retainer from the dry ice and methanol bath and immediately complete the installation into the bore of the lug.
REPAIR OF THE AFT ENGINE DRAG STRUT, LUG “H”, WITH OVERSIZE BUSHINGS

When the fitting bore diameter exceeds maximum allowable, repair the aft engine mount drag strut attachment lug “H” by installing an oversize bushing. Repair the lug as follows:

**CAUTION**

Do not increase the depth of the hole when counterboring or reaming the lug.

1. If the lug bore diameter is greater than 1.127-inch, counterbore the lug to an appropriate oversize diameter according to the table in Figure 14.

2. Fabricate a (salvage) bushing as shown in Figure 14 from the following materials: Steel, 431 CRES bar, condition HT115, MIL-S-18732, or Steel 4130 bar, condition F, MIL-S-6528, 125kps, cadmium plated per QQ-P-416, type II, class 3. Apply a light coat of epoxy primer (Item 140m, WP 0157 00) to the outer diameter of the bearing race, inside of bushing, and lug bore. Allow the primer to dry.

3. Using an appropriate roller-staking tool, stake the bearing retainer. If, for any reason, staking is impractical, the bearing may be retained by using LOCTITE 609 (local purchase authorized) as follows:

   a. Apply a light coat of primer/activator (LOCTITE Primer T7471-local purchase authorized) to the outer diameter of the bearing race, the bearing retainer, both inner and outer diameters of the salvage bushing, and the bore in the lug. Allow the primer to dry.

   b. While wearing chemical protective gloves, apply a light coat of retaining/sealing compound to the outside diameter of the bearing race, and inside of bushing. Press the bearing into the bushing.

   c. Cold soak the bushing (and captive bearing) and installation mandrel in a dry ice and methanol bath (shrink-fit bearing installation).

   d. While wearing chemical protective gloves, apply a light coat of retaining/sealing compound to the outside surface of the bushing and the lug bore.

   e. Remove the installation mandrel with bushing (and captive bearing) from the dry ice and methanol bath, and immediately complete the installation into the oversize bore of the lug.

**WARNING**

- DRY ICE
- METHANOL
ENGINE SUPPORT STRUCTURE-DRAG STRUT ASSEMBLY AND INSTALLATION

DRAG STRUT ASSEMBLY

The drag strut hardware could be installed improperly allowing the drag strut installation to lock-up. The engine should be able to be deflected laterally by pushing the tailcone sideways. This indicates that the drag strut is not locked up. Ensure that during drag link installation the forward bolt, 114S3707-5, and bushing, 114S3860-2, are installed such that the flats of the bolt head and bushing are parallel to the slot in the drag link bushings. This installation will prevent the drag strut from locking up.

NOTES

A. Drag Strut for T55-L-712 engines shown; hardware is same for T55-GA-714A engines.
B. Ensure that flats of bolt are parallel with straight edges of bushing slot. Refer to Figure 16.
   Ensure that flats of bushing are parallel with straight edges of bushing slot.
C. Refer to Figure 16 for details of bushing and lockpin installation.
D. Torque nut to 125 to 135 inch-lbs.
E. This raised lug is always inboard, left and right sides of aircraft. Raised lug P/N, Mill Heat No, Heat Treat Lot No, and bosses, face inboard. Concave side is inboard on T55-GA-714A installation.
F. Torque nut to 315 to 450 inch-lbs.
G. Refer to Table 1 for repair bushing sizing.

Figure 15. Drag Strut Hardware Installation
INSTALLATION OF THE SLOTTED BUSHINGS

Some maintenance manuals are unclear on the proper orientation and installation of the 114S3858-1 and 114S3858-2 slotted bushings. Specifically, the manuals indicate that during replacement a “flat bottomed” hole is bored into the bushings to within 0.010-inch of the inner wall of the bushing. This is not the case; the hole is drilled through the wall of the bushing. During lock-pin installation, the end of the lock-pin must not be allowed to protrude past the inner wall of the bushing. Figure 16 provides the necessary clarification.

NOTES

A. All dimensions are in inches.
B. Lock pin, 114S3847-4, must be cut to fit prior to installation.
C. Each clevis end of the drag strut, adjacent to the lock pin bore, must be point staked (2 places) to retain, 114S3847-4, lock pins.
D. Refer to Table 1 for bushing replacement.

Figure 16. Drag Strut Slotted Bushing Installation
Figure 17. Drag Strut Bushing Staking Tool
REPLACEMENT OF ENGINE MOUNT(S)

Engine mount(s) must be replaced when damage is not repairable by burnishing and/or re-bushing. Subsequent paragraphs contain procedures for the replacement of the engine mount(s) and the installation and use of the locating fixture assembly, 114G1242-1. Refer to Figure 18. If the aircraft requires engine mount change and is classified as crash damage or suspect twisted airframe, alignment of airframe must be checked IAW WP 0148 00 before replacing mount(s).

PREPARATION OF AIRCRAFT FOR ENGINE MOUNT REPLACEMENT

Prepare the aircraft for engine mount replacement as follows. Refer to TM 55-1520-240-23 for component removal and installation procedures.

1. Remove the following: (1) all rotor blades, (2) pylon, (3) both engines, (4) combining transmission, (5) combining transmission support fitting bushings.
2. Level the aircraft.
3. Deplete the nitrogen charge from both aft landing gear.
4. Disconnect the aft landing gear at the upper attachment bolt. Support the wheels and ensure the proximity switches are not damaged when the landing gear swings down.

NOTE

Aircraft preparation for engine mount replacement in the field may in some cases be modified to expedite repair. Modified procedures are dependent on aircraft condition and require Engineering approval. Refer to WP 0003 for instructions on submission of a Maintenance Engineering Call (MEC) to initiate a request for modified aircraft preparation procedures.

INSTALLING LOCATING FIXTURE ASSEMBLY FOR ENGINE MOUNT REPLACEMENT

To accurately locate mount attach points and to maintain their alignment during repairs, it is essential that the locating fixture be properly fitted and supported. Locating fixture assembly, 114G1242-1, components needed to replace engine mounts are as follows: (1) Head assembly, 114G1242-3, (2) Wing assembly, 114G1242-4, LH and 114G1242-5, RH, (3) Arm assembly, 114G1224-173, LH and RH. Refer to Figure 18.

1. Check all fixture and aircraft mating surfaces for foreign objects. Surfaces must be clean.
2. Check the head attach point bushings. The bushings must be properly seated and clean.
3. Hoist head into position on combining transmission mount. Temporarily secure head in position with two bolts, 114G1242-84, washers AN960-814, and nuts AN315-8R.
4. Hoist wing assembly into position by positioning attachment wall of the wing assembly against the wall of the head. Temporarily secure the wing assembly in position with two T-pins CL-16-TP to align the wing assembly and head. Repeat procedure for other wing assembly.
5. Fit sling to built-up assembly.
6. Remove hardware securing the head to the combining transmission mount.
7. Carefully hoist the locating fixture assembly just enough to enable pinning each of the six engine mount points.

CAUTION

Do not measure from the spotface. Measure from the top of the fitting.

8. When all six engine mount points are pinned, measure the gap between the combining transmission support pads on the locating fixture assembly and the top of the combining transmission mount.
9. Fit shims, as required, between head and combining transmission supports (this permits even alignment between locating fixture assembly and all six engine mount attach points). All 6 pins must fit and be easily removed and installed.
INSTALLING LOCATING FIXTURE ASSEMBLY FOR ENGINE MOUNT REPLACEMENT - continued

**CAUTION**

Pins may fit snugly providing there is no deflection of the locating fixture wing when removing and fitting the pins. If the locating fixture wing moves when fitting and removing pins, the shimming is incorrect and inaccurate alignment will occur.

10. Add or remove shims as necessary to ensure that the engine mount pins fit freely and there is no binding.
11. Secure head to structure using four bolts 114G1242-84, washers AN960-814, and nuts AN315-8R.
12. Position arm assembly, 114G1242-173, beneath each wing assembly. The double flanged ends of brace should contact a bracket on lower surface of each wing. The single flanged ends should contact the aft landing gear strut attachment fittings at FS 485, WL minus 5.
13. Adjust arm assemblies as necessary to allow attachment bolts to fit freely. Measure and record arm length.
16. Ensure all six engine mount pins can still be moved by hand. Tighten and mark the arm on the side(s) being repaired.

REPLACEMENT OF FORWARD ENGINE MOUNT

Replace forward engine mount as follows:

1. Install the locating fixture as described above.
2. Temporarily remove wing and arm assemblies to remove affected engine mount.
3. Remove and retain engine cover latch, bushings, spherical bearings, adapter clamps, and associated parts from damaged forward engine mount.
4. Remove damaged forward engine mount assembly from former at FS 482.
5. Position replacement forward engine mount assembly in aft fuselage structure.
6. Reinstall the wing and arm assemblies.
7. Align the mount and determine how the pilot holes in the replacement mount line up with the existing holes in the fuselage (some adjustment may be necessary). Tighten the mount in the frame by fitting appropriate size temporary fasteners bolts through the pilot holes in the mount and into the fuselage.
8. Once the mount is properly fitted (all the holes aligned), ensuring that the mount pins can still be rotated by hand.
9. Remove temporary fastener bolts one at a time and drill the pilot hole to the correct size (same as fuselage fastener holes). Temporarily replace with same size diameter bolt as will be used in final installation. Continue this process until all holes have been drilled.
10. Disconnect and remove arm and wing assemblies.
11. Remove all temporary fastener bolts.
12. Deburr the drill holes in the mount.

**CAUTION**

Failure to deburr holes may cause cracks to develop in the engine mount.

13. Permanently install the replacement mount using identical, substitution, or oversize attaching hardware, as required. Fit hardware wet using epoxy primer (Item 140, WP 0157 00).
14. Reinstall wing and arm assemblies.
15. Drill, ream, and spotface lugs of forward engine mount. Use the drill and ream set, 114G5009-1, in conjunction with the location fixture, 114G1242-1. The drill and ream set is part of the locating fixture. The drill and ream sequence is illustrated on drawing 114G5009, which is included in the drill and ream set. Refer to Figure 3 for final tolerances and Table 1 for bushing requirements.
16. Spotface (1.18 inch diameter) outboard surface of inboard lug of each lug pair of forward engine mount assembly. Use drill and ream set 114G5009-1. Refer to Figure 3 for final tolerances. Spot face (1.38 inch diameter) inboard surface of inboard lug of inboard lug pair of forward engine mount to dimensions shown in Figure 3.
REPLACEMENT OF FORWARD ENGINE MOUNT - continued

17. Position drag strut attachment on drag strut attachment lug of forward engine mount. Mark bolt hole center on forward engine mount assembly as taken from existing bolt hole in drag strut attachment. Drill and ream forward engine mount assembly to dimensions shown in Figure 3.

18. Remove locating fixture from aft fuselage structure.

19. Reconnect associated structure and skin panels, clean and treat the repaired area, seal engine mount and structure, and refinish the repaired area.

20. Install bushings in forward engine mount.

21. Install aircraft components.

22. Reconnect the aft landing gear at the upper attachment bolt. Support the wheels and ensure the proximity switches are not damaged.

23. Service the landing gear strut.

REPLACEMENT OF AFT ENGINE MOUNT

Replace aft engine mount as follows:

1. Install the locating fixture as previously described.

2. Temporarily remove wing and arm assemblies to remove affected engine mount.

3. Remove and retain the bushings from the damaged mount.

4. Remove damaged aft engine mount from the former at FS 502.

5. Position replacement aft engine mount in aft fuselage structure.

6. Reinstall the wing and arm assemblies.

7. Align the mount and determine how the pilot holes in the replacement mount line up with the existing holes in the fuselage (some adjustment may be necessary). Tighten the mount in the frame by fitting appropriate size temporary fastener bolts through the pilot holes in the mount and into the fuselage.

8. Once the mount is properly fitted (all the holes aligned), ensure that the mount pin can still be rotated by hand.

9. Remove temporary fastener bolts one at a time and drill the pilot hole to the correct size (same as fuselage fastener holes). Temporarily replace with same size diameter bolt as will be used in final installation. Continue this process until all holes have been drilled.

10. Disconnect and remove the wing and arm assemblies.

11. Remove all temporary fastener bolts.

12. Deburr the drill holes in the mount.

CAUTION

Failure to deburr holes may cause new cracks in the engine mount.

13. Reinstall wing and arm assemblies.

14. Permanently install the replacement mount using identical, substitution, or oversize attaching hardware, as required. Fit hardware wet using epoxy primer (Item 140, WP 0157 00).

15. Drill, ream, and spotface lugs of aft engine mount. Use the drill and ream set, 114G5009-1, in conjunction with the location fixture, 114G1242-1. The drill and ream set is part of the locating fixture. The drill and ream sequence is illustrated on drawing 114G5009, which is included in the drill and ream set. Refer to Figure 3 for final tolerances and Table 1 for bushing requirements.

16. Remove locating fixture assembly from aft fuselage structure.

17. Reconnect associated structure and skin panels, clean and treat the repaired area, seal engine mount and structure, and refinish the repaired area.

18. Install bushings in aft engine mount.

19. Install aircraft components.

20. Reconnect the aft landing gear at the upper attachment bolt. Support the wheels and ensure the proximity switches are not damaged.

21. Service the landing gear strut.
Figure 18. Locating Fixture, 114G1242-1 (Sheet 1 of 3)
Figure 18. Location Fixture, 114G1242-1 (Sheet 2 of 3)
NOTE

A. LH side view looking aft; RH side opposite.
B. LH arm assembly 114G1242-173 not shown.

Figure 18. Locating Fixture, 114G1242-1 (Sheet 3 of 3)
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<th>Lug Bore Dia-Measured Min-Max tol +/- .0005</th>
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<th>Bush I/D (A)</th>
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Table 1. Repair Bushings for Reworked Lug Bore Diameters – Engine Mounts/Drag Strut - continued

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<td>0.395-0.354 Note R</td>
<td>0.6719</td>
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<td>0.5000+.0015, -.0000</td>
<td>Note O Note D</td>
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<td>0.6875</td>
<td>Note C</td>
<td>0.5000+.0015, -.0000</td>
<td>Note O Note D</td>
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<td>Aft - Outbd</td>
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<td>Min 0.354</td>
<td>Note L</td>
<td>0.395-0.354 Note R</td>
<td>0.8125</td>
<td>Note C</td>
<td>0.6275+.0005, -.0000</td>
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</tr>
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<td></td>
<td></td>
<td>Note L</td>
<td>0.395-0.354 Note R</td>
<td>0.8281</td>
<td>Note C</td>
<td>0.6275+.0005, -.0000</td>
<td>Note E</td>
</tr>
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<td>Note L</td>
<td>0.395-0.354 Note R</td>
<td>0.8438</td>
<td>Note C</td>
<td>0.6275+.0005, -.0000</td>
<td>Note E</td>
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<td>Note L</td>
<td>0.395-0.354 Note R</td>
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<td>0.6275+.0005, -.0000</td>
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<td>0.8750</td>
<td>Note C</td>
<td>0.6275+.0005, -.0000</td>
<td>Note E</td>
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<td>Drag Strut</td>
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<td>Nominal 0.320</td>
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<td></td>
<td></td>
<td>Note M</td>
<td>0.6272</td>
<td>Note M</td>
<td>0.5000+.0015, -.0000</td>
<td>0.4062</td>
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<td></td>
<td></td>
<td>Note M</td>
<td>0.6562</td>
<td>Note M</td>
<td>0.5000+.0015, -.0000</td>
<td>0.4062</td>
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Table 1. Repair Bushings for Reworked Lug Bore Diameters – Engine Mounts/Drag Strut – continued

<table>
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<tr>
<th>Drag Strut-Aft Outbd Bushing</th>
<th>Nominal 0.320</th>
<th>Note N 0.6272</th>
<th>Note N 0.5000+0.0015, -0.0000</th>
<th>0.750</th>
<th>0.062</th>
<th>0.300</th>
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</thead>
<tbody>
<tr>
<td>Note N</td>
<td>0.6562</td>
<td>Note N</td>
<td>0.5000+0.0015, -0.0000</td>
<td>0.782</td>
<td>0.062</td>
<td>0.300</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions in inches
B. The Engine Mount Repair Kit, 145G0333-1, does not include tools for drag strut bushing repair.
C. Bushing OD to be determined to ensure 0.0010 to 0.0020-inch interference shrink fit in appropriate hole
D. Bushing length ‘L’ (under flange head) to be determined by measuring lug thickness ‘t’ minus 0.002 to 0.007-inch
E. Bushing length to be determined by measuring lug thickness ‘t’ minus 0.002 to 0.007-inch
F. Replaces 114S3703-5 or -30
G. Replaces 114S3703-21
H. Replaces NAS 77-10-46 or 114S3703-31
I. Replaces 114S3703-20
J. Replaces NAS 77-8-24
K. Replaces NAS 77-10-19 or 114S3703-11
L. Replaces 114S3859-1 or -3
M. Replaces NAS 75-8-013 (OD to be determined to ensure 0.0002 to 0.0015-inch slip-fit in appropriate hole)
N. Replaces NAS 77-8-30 (OD to be determined to ensure 0.0002 to 0.0015-inch slip-fit in appropriate hole)
O. Equals measured depth of counterbore plus 0.000/minus 0.005-inch (0.062-inch min thickness - lug “A”; 0.032-inch min thickness - lug “F”)
P. Thickness achieved by spotface (1.38-inch diameter x 0.03-inch radius.). Remove minimum material to eliminate damage.
   “A” lug - inbd side, bore size 0.8125-0.9844-inch
   “A” lug - outbd side, bore size 0.9375-0.9844-inch
   “B” lug - inbd/outbd sides, bore size 0.9375-0.9844-inch
   “C” lug - inbd side, bore size 0.8125-0.9844-inch
   “C” lug - outbd side, bore size 0.9375-0.9844-inch
   “D” lug - inbd/outbd sides, bore size 0.9375-0.9844-inch
Q. Thickness achieved by spotface (1.19-inch diameter x 0.03-inch radius). Remove minimum material to eliminate damage. “A” lug - outbd side, bore size 0.8125-0.9219-inch
R. Thickness achieved by spotface (1.00-inch diameter x 0.06-inch radius). Remove minimum material to eliminate damage.
   “F” lug - outbd side, bore size 0.6250-0.6875-inch
   “G” lug - inbd side, bore size 0.8125-0.8750-inch

Note
Lug thickness minimum 0.380-inch for -714 Engine; 0.354-inch for -712 Engine
S. Bushing materials: Steel 431 Cres Bar, Cond HT115, MIL-S-18732; Steel 17-4 Cres Bar, AMS5643 HT to 150-170 KSI (H1050); or Steel 4130 Bar, Cond F, MIL-S-6758, 125 KSI, cad plated per QQ-P-416 type II, class 3

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT SECTION TUB ASSEMBLY REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Paint, Non-Skid (Item 125, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0081 00
WP 0083 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0093 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the aft section tub assembly. Refer to Figure 1.

1. Bottom Former
2. Ramp Hinge Tunnel
3. Aft Landing Gear Drag Beam
Figure 1. Aft Section Tub
NOTE

Refer to Table 1 for index number reference.

Figure 2. Bottom Former, Sta 482
Table 1. Bottom Former, Sta 482

<table>
<thead>
<tr>
<th>INDEX NO</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>Note D</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Hinge Assy AL Aly 7075-T73</td>
<td>Note E</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Hinge Assy AL Aly 7075-T73</td>
<td>Note F</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Hinge Assembly AL ALY 7075-T73</td>
<td>Note E</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Hinge Assembly AL ALY 7075-T73</td>
<td>Note D</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Core 3.0-3/8-20-N-3003</td>
<td>Note B</td>
<td></td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Skin 0.036 7075-T6</td>
<td>Note B</td>
<td></td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Cap VS90310 7075-T6</td>
<td>VS90310 7075 T6</td>
<td>0088 00</td>
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</tr>
<tr>
<td>9</td>
<td>Cap VS90523 7075-T6</td>
<td>VS90523 7075-T6</td>
<td>0088 00</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Trunnion Assembly 2014-T6</td>
<td>Note C</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Block 0.400 7075-T6 Bare</td>
<td>Note B</td>
<td></td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Component is a bonded assembly. Repair using original material.
C. If damage is other than minor, replace trunnion assembly with 114S3849-1 LH or 114S3849-2 RH.
D. If damage is other than minor, replace hinge assembly with 114S3812-41 LH or 114S3812-42 RH.
E. If damage is other than minor, replace hinge assembly with 114S3812-22.
F. If damage is other than minor, replace hinge with 114S3812-13.
NOTE

Refer to Table 2 for index number reference.

Figure 3. Ramp Hinge Tunnel
### Table 2. Ramp Hinge Tunnel

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Finger Plate</td>
<td>0.040 AZ31B-H24 Mag Aly</td>
<td>0.050 4130</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Edge Member</td>
<td>0.063 7075-T6 Bare</td>
<td>Note E</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Doubler</td>
<td>0.020 7075-T6 Bare</td>
<td>Note E</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Skin</td>
<td>0.016 Cres 301 HD</td>
<td>Note E</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Skid Rail</td>
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<td>Note E</td>
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<tr>
<td>6</td>
<td>Core</td>
<td>0.952 3.3-¼-15N 3003</td>
<td>Note E</td>
<td>0083 00</td>
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<tr>
<td>7</td>
<td>Skin</td>
<td>0.016 7075-T6 Bare</td>
<td>Note E</td>
<td>0083 00</td>
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<tr>
<td>8</td>
<td>Core</td>
<td>0.952 4.3-¼-20N 3003</td>
<td>Note E</td>
<td>0083 00</td>
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<tr>
<td>9</td>
<td>Edge Member</td>
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<td>Note E</td>
<td>0083 00</td>
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<tr>
<td>10</td>
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<td>ALCOA 61971 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
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<tr>
<td>11</td>
<td>Splice Angle</td>
<td>Harvey 11301-3 7075-T6</td>
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<tr>
<td>12</td>
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<td>0.025 7075-T6 Clad</td>
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<tr>
<td>13</td>
<td>Hinge Assembly</td>
<td>MS20001-PH9</td>
<td>Note C</td>
<td>0093 00</td>
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<tr>
<td>14</td>
<td>Cap</td>
<td>4 Ply Laminated Glass Cloth</td>
<td>Note D</td>
<td>0081 00</td>
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<tr>
<td>15</td>
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<td>0.040 7075-T6 Clad</td>
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<tr>
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<td>0.040 7075-T6 Clad</td>
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<td>17</td>
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<tr>
<td>18</td>
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<td>0.032 7075-T6 Clad</td>
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</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Apply non-skid paint (Item 125, WP0157 00) if repairs are made within the shaded area or if existing coating is worn.
C. Repair by insertion using same material as original hinge half. Make from MS20001-PH9 or MS20001-PX 9. Make hinge pin from MS20253-P2.
D. If damage is other than minor, replace with 114S3551-25.
E. Part is sandwich honeycomb construction. Repair using same material as original.
NOTE

Refer to Table 3 for index number reference.

Table 3. Aft Landing Gear Drag Beam

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
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<th>WORK PACKAGE</th>
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<tr>
<td>2</td>
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<td>0.071 7075-T6 Clad</td>
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<tr>
<td>3</td>
<td>Zee</td>
<td>0.050 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0086 00</td>
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<tr>
<td>4</td>
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<tr>
<td>6</td>
<td>Cap</td>
<td>VS90533 7075-T6</td>
<td>NOTE B</td>
<td>0088 00</td>
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<tr>
<td>7</td>
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<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
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<tr>
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<td>0.071 7075-T6 Clad</td>
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<td>VS90305 7075-T6</td>
<td>0.063 4130</td>
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NOTES
A. All dimensions are in inches.
B. Repair or replace using same material as original.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
TAIL CONE ASSEMBLY REPAIRS

INITIAL SETUP

<table>
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<th>Test Equipment:</th>
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<td>Material/Parts:</td>
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<tr>
<td>Personnel Required:</td>
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</tr>
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</table>

References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0081 00
- WP 0086 00
- WP 0087 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the tail cone assembly skin, webs, formers, longerons, decks, and plenum. Refer to Figure 1.

1. Plenum Assembly
2. Deck, sta 594 to sta 625
3. Deck, WL plus 72

Figure 1. Tail Cone Assembly
0120 00-1
NOTE

Refer to Table 1 for index number reference.

![Figure 2. Plenum Assembly](image)

Table 1. Plenum Assembly

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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<td>Note B</td>
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<td>0.012 2024-T3 Clad</td>
<td>0.016 2024-T3 Clad</td>
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<td>BAC1490-25</td>
<td>7075-T6 Clad</td>
<td>0087 00</td>
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<tr>
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<td>Web</td>
<td>0.016 2024-T3 Clad</td>
<td>0.020 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Fabricate from original material.
NOTE

Refer to Table 2 for index number reference.

Figure 3. Tail Cone Assembly (Sheet 1 of 4)
NOTE
Refer to Table 2 for index number reference.

Figure 3. Tail Cone Assembly (Sheet 2 of 4)
NOTE

Refer to Table 2 for index number reference.

Figure 3. Tail Cone Assembly (Sheet 3 of 4)
NOTE

Refer to Table 2 for index number reference.

Table 2. Tail Cone Assembly

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</thead>
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</tr>
<tr>
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<td>Web</td>
<td>0.020 7075-T6 Bare</td>
<td>0.025 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
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<td>0.050 7075-T6 Clad</td>
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</tr>
<tr>
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<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
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<td>5</td>
<td>Ejector Assy</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Doubler</td>
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<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
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<tr>
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<td>0.040 7075-T6 Clad</td>
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</tr>
<tr>
<td>8</td>
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<td>0.040 7075-T6 Clad</td>
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</tr>
<tr>
<td>9</td>
<td>Cap</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Channel</td>
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<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Zee</td>
<td>0.032 7076-T6 Bare</td>
<td>0.040 7076-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Longeron</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Skin</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
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</table>
Table 2. Tail Cone Assembly - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Gusset</td>
<td>0.063 7075-T6 Bare</td>
<td>0.071 7075-T6 Bare</td>
<td>0088 00</td>
</tr>
<tr>
<td>15</td>
<td>Channel</td>
<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>16</td>
<td>Angle</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>17</td>
<td>Liner</td>
<td>3 Ply No. 181 Glass Cloth</td>
<td>Note D</td>
<td>0081 00</td>
</tr>
<tr>
<td>18</td>
<td>Liner</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>19</td>
<td>Web</td>
<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>20</td>
<td>Screen</td>
<td>0.040 2024-T3 Bare</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>21</td>
<td>Channel</td>
<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>22</td>
<td>Channel</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>23</td>
<td>Channel</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
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<tr>
<td>24</td>
<td>Angle</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>25</td>
<td>Channel</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>26</td>
<td>Web</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>27</td>
<td>Web</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>28</td>
<td>Angle</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>29</td>
<td>Angle</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>30</td>
<td>Web</td>
<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>31</td>
<td>Stiffener</td>
<td>VS70504-2 7075-T6</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>32</td>
<td>Zee</td>
<td>0.032 7076-T6 Bare</td>
<td>0.040 7076-T6 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. If damage is other than minor, replace with 114P0134-1.
C. When repair is impracticable, replace with 145S3504-2.
D. Repair using original material.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0081 00
WP 0087 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the cargo door coaming.

NOTE

Refer to Table 1 for index number reference.

Figure 1. Cargo Door Coaming
REPAIR

Table 1. Cargo Door Coaming

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strip Bonder</td>
<td>Glass Cloth No.181</td>
<td>Glass Cloth No.181</td>
<td>0081 00</td>
</tr>
<tr>
<td>2</td>
<td>Coaming Splice</td>
<td>Glass Cloth No.181</td>
<td>Glass Cloth No.181</td>
<td>0081 00</td>
</tr>
<tr>
<td>3</td>
<td>Coaming</td>
<td>Glass Cloth No.181</td>
<td>Glass Cloth No.181</td>
<td>0081 00</td>
</tr>
<tr>
<td>4</td>
<td>Clip</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Seal</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Seal Clamp</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with new seal, 114SS659-1 LH or 114SS659-2 RH.
C. Replace if damage is other than minor. Manufacture from original material.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT TRANSMISSION DRIP PAN REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Cloth, Glass (Item 78, WP 0157 00)
Fiber Insulation (Item 102.1, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0081 00
WP 0086 00
WP 0087 00
WP 0093 00
WP 0095 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the aft transmission drip pan assembly to include the supports, hinges, drain, and covers. Refer to Figure 1.

REPAIR

NOTE

Refer to Table 1 for index number reference.

Figure 1. Aft Transmission Drip Pan (Sheet 1 of 2)
NOTE

Refer to Table 1 for index number reference.

Figure 1. Aft Transmission Drip Pan (Sheet 2 of 2)
Table 1. Aft Transmission Drip Pan

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hinge Half</td>
<td>MS20001</td>
<td>MS20001</td>
<td>0093 00</td>
</tr>
<tr>
<td>2</td>
<td>Zee</td>
<td>0.063 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Support LH</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Drain</td>
<td>Note B</td>
<td>--</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Support RH</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Cover</td>
<td>Note B</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>7</td>
<td>Doubler</td>
<td>0.025 2024-T3 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Retainer</td>
<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Seal</td>
<td>Note D</td>
<td>--</td>
<td>0095 00</td>
</tr>
<tr>
<td>10</td>
<td>Strap</td>
<td>Note C</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Grommet</td>
<td>MS35489-6</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Support</td>
<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Angle</td>
<td>0.025 2024-T3 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>14</td>
<td>Support</td>
<td>Note B</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>15</td>
<td>Retainer</td>
<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>16</td>
<td>Cover</td>
<td>Note B</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>17</td>
<td>Tape, Velcro</td>
<td>Velcro Tape 80 Hook</td>
<td>Note G</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Color No 320 .75 X 19.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Cover</td>
<td>Note B</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>19</td>
<td>Blanket Assembly</td>
<td>Fiber Insulation MIL-B-5924 Type 1</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>20</td>
<td>Beam</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
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<tr>
<td>21</td>
<td>Cover</td>
<td>Note B</td>
<td>--</td>
<td>0081 00</td>
</tr>
<tr>
<td>22</td>
<td>Zee</td>
<td>0.063 7075-T6 Bare</td>
<td>0.063 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>23</td>
<td>Bumper</td>
<td>1.5 Thick X 2.0 X 2.0</td>
<td>Note C</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Laminated impregnated glass cloth (Item 78, WP 0157 00)
C. Replace damaged strap with 145S3620-11.
D. Replace damaged seal with 0.063-inch MIL-R-6855 rubber.
E. Replace damaged grommet with MS3589-6.
F. Replace damaged batting with insulation fiber (Item 102.1, WP 0157 00).
G. Replace damaged velcro tape with same as original.

END OF WORK PACKAGE
## INITIAL SETUP

### Test Equipment:
As Required

### Tools and Special Tools:
As Required

### Material/Parts:
As Required

### Personnel Required:
As Required

### References:
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0081 00
- WP 0087 00

### Equipment Conditions:
As Required

### Special Environmental Condition:
As Required

## SCOPE

This work package describes repair procedures for the APU drip pan to include the hinge, drip tray, tees, arms, and drain. Refer to Figure 1.
NOTE
Refer to Table 1 for index number reference.

Figure 1. APU Drip Pan
Table 1. APU Drip Pan

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hinge Half</td>
<td>MS20001P5</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Arm</td>
<td>0.020 2024-T3 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Tee</td>
<td>Note C</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Drip Tray</td>
<td>Glass Cloth No. 181</td>
<td>Glass Cloth No. 181</td>
<td>0081 00</td>
</tr>
<tr>
<td>5</td>
<td>Drain Assembly</td>
<td>Note B</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. If damage is other than minor, replace with 145S3617-9.
C. If damage is other than minor, replace with 145S3617-5 LH or 145S3617-4 RH.
D. Replace with new hinge half.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0083 00
WP 0084 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0095 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the cargo ramp exterior to include skin, strakes, hinge, bonded assembly, composite panels, webs, caps, and stringers. Refer to Figure 1.
NOTE
Refer to Table 1 for index number reference.

Figure 1. Cargo Ramp Exterior

Table 1. Cargo Ramp Exterior

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nose Strake</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Center Strake</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Tail Strake</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Hinge</td>
<td>VS20106-1</td>
<td>Note C</td>
<td>0095 00</td>
</tr>
<tr>
<td>5</td>
<td>Skin</td>
<td>0.032 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>0.032 7075-T6 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>
Table 1. Cargo Ramp Exterior

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Member</td>
<td>Scotch Ply</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Outer Skin</td>
<td>0.020 7075-T6 Clad</td>
<td>0.032 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td></td>
<td>Outer Skin</td>
<td>S-Glass Pre Peg Tape,</td>
<td>Note D</td>
<td>0084 00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type I-I, Class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Inner Skin</td>
<td>0.016 7075-T6 Clad</td>
<td>0.020 7075-T6 Clad</td>
<td>Note B</td>
</tr>
<tr>
<td></td>
<td>Inner Skin</td>
<td>E-Glass Pre Preg Fiber Class II, Grade, Type 1581 or 7781</td>
<td>Note D</td>
<td>0084 00</td>
</tr>
<tr>
<td>10</td>
<td>Splice Plate</td>
<td>0.020 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>11</td>
<td>Splice Plate</td>
<td>0.016 7075-T6 Clad</td>
<td>0.020 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>12</td>
<td>Core</td>
<td>0.97 5.1-1/4-25N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>13</td>
<td>Inner Skin</td>
<td>0.012 7075-T6 Clad</td>
<td>0.016 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>14</td>
<td>Core</td>
<td>0.97 3.3-1/4-30N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td></td>
<td>Core</td>
<td>0.97 X 33.3 3/16 R X 101.0</td>
<td>Note D</td>
<td>0084 00</td>
</tr>
<tr>
<td>15</td>
<td>Splice Plate</td>
<td>0.020 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>16</td>
<td>Core</td>
<td>0.97 6.0-1/4-30N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td></td>
<td>Core</td>
<td>0.97 X30.7 3/16 R X 101.0</td>
<td>Note D</td>
<td>0084 00</td>
</tr>
<tr>
<td>17</td>
<td>Splice Plate</td>
<td>0.016 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>18</td>
<td>Skin</td>
<td>0.025 2024-T3 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>19</td>
<td>Skin</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>20</td>
<td>Stringer</td>
<td>0.032 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>21</td>
<td>Channel</td>
<td>0.032 7075-T6 Clad</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>22</td>
<td>Doubler</td>
<td>0.032 7075-T6 Clad</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>23</td>
<td>Doubler</td>
<td>0.016 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>24</td>
<td>Doubler Edge</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>25</td>
<td>Core</td>
<td>0.97 6.0-1/4-30N-30C3</td>
<td>0.020 7075-T6 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>26</td>
<td>Web</td>
<td>0.025 7075-T6 Clad</td>
<td>0.032 7075-T6 Clad</td>
<td>Note E</td>
</tr>
<tr>
<td></td>
<td>Web</td>
<td>0.025 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>27</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>28</td>
<td>Stiffener</td>
<td>0.032 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>29</td>
<td>Cap</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Component part of bonded assembly. Repair using same type material as original.
C. Replace with same material as original.
D. Nomex panel, ramp bottom skin, ramp sta 37 to sta 98.
E. Remove the riveted access covers, LH and RH sides. Install nut plate, NSN 5310-00-777-5792 at holes. Manufacture new covers and install with screws, NSN 5305-00-180-0009.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Sealing Compound (Item 162, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0083 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0093 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the cargo ramp interior to include former assemblies, beam assemblies, gate assembly, and fitting bushing replacement. Refer to Figure 1.
NOTE

Refer to Table 1 through 4 for index number reference.

Table 1. Former, Sta 488

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Former</td>
<td>0.050 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Former, sta 488 to ramp sta 37, shall have the seams sealed with sealing compound (Item 162, WP 0157 00).
Table 2. Former, Ramp Sta 10

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>Reynolds 5761 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>VS90543 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>AND101133-0701 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>VS92542 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Skin</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Filler</td>
<td>0.250 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Core</td>
<td>0.255.2.30-¾-10N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>9</td>
<td>Stiffener</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Stiffener</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Component is made of sandwich honeycomb construction. Repair using original material.
C. Formers, sta 488 to ramp sta 37, shall have the seams sealed with sealing compound (Item 162, WP 0157 00).

Table 3. Former, Ramp Sta 37

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Cap</td>
<td>BAC1503-100037 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Stiffener</td>
<td>0.032 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>13</td>
<td>Filler</td>
<td>0.250 7075-T6 Bare</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>14</td>
<td>Cap</td>
<td>VS90303 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>15</td>
<td>Gusset</td>
<td>0.025 7075-T6 Clad</td>
<td>0.025 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>16</td>
<td>Web</td>
<td>0.020 7075-T6 Clad</td>
<td>0.020 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>17</td>
<td>Stiffener</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Cap</td>
<td>0.063 7075-T6 Clad</td>
<td>0.063 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>19</td>
<td>Attachment</td>
<td>BAC1505-100515 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Doubler</td>
<td>0.016 7075-T6 Bare</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>21</td>
<td>Cap</td>
<td>VS90317 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>22</td>
<td>Core</td>
<td>0.255.2.3-¾-10N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>23</td>
<td>Skin</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Component is made of sandwich honeycomb construction. Repair using original material.
REPAIR - continued

C. Formers, sta 488 to ramp sta 37, shall have the seams sealed with sealing compound (Item 162, WP 0157 00).

Table 4. Former, Ramp Actuator Support, Ramp Sta 26

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Angle</td>
<td>0.032 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>25</td>
<td>Former</td>
<td>0.032 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Component is made of sandwich honeycomb construction. Repair using original material.
C. Formers, sta 488 to ramp sta 37, shall have the seams sealed with sealing compound (Item 162, WP 0157 00).
NOTE

Refer to Table 5 through 10 for index number reference.

Figure 3. Former, Ramp Sta's 53, 60, 68, 83, and 98
### Table 5. Former, Ramp Sta 98 (Honeycomb Panel)

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hinge</td>
<td>VS90560 7075-T6</td>
<td>Note B</td>
<td>0093 00</td>
</tr>
<tr>
<td>2</td>
<td>Filler</td>
<td>0.250 2024-T4 Bare</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Clip</td>
<td>0.050 2024-T4 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0083 00</td>
</tr>
<tr>
<td>4</td>
<td>Doubler</td>
<td>0.016 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Web</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>6</td>
<td>Clip</td>
<td>Harvey 15078 7075-T6</td>
<td>0.063 4130</td>
<td>0083 00</td>
</tr>
<tr>
<td>7</td>
<td>Cap</td>
<td>VS90302 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>8</td>
<td>Core</td>
<td>0.255 3.0-3/8-20N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Bonded assembly, repair using original material.

### Table 6. Former, Ramp Sta 98 (Web and Stiffeners)

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Hinge</td>
<td>VS90560 X 100 7075-T6</td>
<td>NOTE B</td>
<td>0093 00</td>
</tr>
<tr>
<td>10</td>
<td>Web</td>
<td>0.050 7075-T6 Clad</td>
<td>0.063 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>11</td>
<td>Doubler</td>
<td>0.063 7075-T6 Clad</td>
<td>0.072 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>12</td>
<td>Filler</td>
<td>0.040 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>13</td>
<td>Cap</td>
<td>AND10136-1504 X 87.0 7075-T73</td>
<td>0.120 301 CRS 1/4H</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Tee</td>
<td>AND10136-2001 X 3.4 7075-T73</td>
<td>0.080 301 Crs</td>
<td>0088 00</td>
</tr>
<tr>
<td>15</td>
<td>Tee</td>
<td>AND10136-1504 X 4.3 7075-T73</td>
<td>0.080 301 Crs</td>
<td>0088 00</td>
</tr>
<tr>
<td>16</td>
<td>Tee</td>
<td>AND10136-2001 X 5.5 7075-T73</td>
<td>0.080 301 Crs</td>
<td>0088 00</td>
</tr>
<tr>
<td>17</td>
<td>Tee</td>
<td>AND10136-2007 X 6.5 7075-T73</td>
<td>0.100 301 Crs</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Tee</td>
<td>AND10136-2001 X 6.2 7075-T73</td>
<td>0.080 301 Crs</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Tee</td>
<td>AND10136-2001 X 6.4 7075-T73</td>
<td>0.080 301 Crs</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Tee</td>
<td>AND10136-2001 X 6.4 7075-T73</td>
<td>0.080 301 Crs</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Replace with original material.
REPAIR - continued

Table 7. Former, Ramp Sta 83

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Filler</td>
<td>0.250 2024-T4</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>22</td>
<td>Core</td>
<td>0.255 3.0-3/8-20N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>23</td>
<td>Cap</td>
<td>VS90302 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>24</td>
<td>Cap</td>
<td>VS90317 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>25</td>
<td>Cap</td>
<td>ALCOA 22509 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>26</td>
<td>Web</td>
<td>0.025 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>27</td>
<td>Clip</td>
<td>ALCOA 61971 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>28</td>
<td>Doubler</td>
<td>0.032 7075-T6 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>29</td>
<td>Web</td>
<td>0.016 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>30</td>
<td>Support</td>
<td>--</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>31</td>
<td>Web</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Bonded assembly, repair using original material.
C. Damage other than minor, replace with 114S6821-1.

Table 8. Former, Ramp Sta 68

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Filler</td>
<td>0.250 7075-T6 Bare</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>33</td>
<td>Cap</td>
<td>VS90302 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>34</td>
<td>Cap</td>
<td>VS90317 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>35</td>
<td>Cap</td>
<td>ALCOA 61971 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>36</td>
<td>Cap</td>
<td>0.050 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>37</td>
<td>Angle</td>
<td>0.020 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>38</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>39</td>
<td>Clip</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>40</td>
<td>Doubler</td>
<td>VS90302 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>41</td>
<td>Stiffener</td>
<td>BAC1503-1402 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>42</td>
<td>Cap</td>
<td>BAC1505-100511 7075-T6</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>43</td>
<td>Web</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>44</td>
<td>Core</td>
<td>0.255 2.3-¾-10N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Bonded assembly, repair using original material.
Table 9. Former, Ramp Sta 53

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Support</td>
<td>2024-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>46</td>
<td>Angle</td>
<td>0.050 7075-T6 Clad</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>47</td>
<td>Web</td>
<td>0.032 7075-T6 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>48</td>
<td>Angle</td>
<td>0.050 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Damage other than minor, replace with 114S6804-1 LH or -2 RH.

Table 10. Former, Ramp Sta 60

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>49</td>
<td>Clip</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>50</td>
<td>Angle</td>
<td>ALCOA 28546 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>51</td>
<td>Filler</td>
<td>0.040 2024-T4 Clad</td>
<td>Note B</td>
<td>0086 00</td>
</tr>
<tr>
<td>52</td>
<td>Clip</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>53</td>
<td>Angle</td>
<td>0.050 2024-T42</td>
<td>0.050 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>54</td>
<td>Former</td>
<td>0.040 2024-T42</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace with original material.
REPAIR - continued

NOTE

Refer to Table 11 through 13 for index number reference.

Figure 4. Beam, Ramp Sta’s 23 and 52, BL 20 to 44; Beam, Sta 448, BL’s 3, 10, 14, 28 and 36; Beam, Ramp Sta’s 0 to 98, BL 48

Table 11. Beam, Ramp Sta’s 23 and 52, BL 20 to 44

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stiffener</td>
<td>ALCOA 22008 7075-T6</td>
<td>0.040 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Angle</td>
<td>ALCOA 12883 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>ALCOA 12883 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTE

All dimensions are in inches.
Table 12. Beam, Sta 488, BL’s 3, 10, 642, 14, 28, and 36

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Clip</td>
<td>0.025 7075-T6 Bare</td>
<td>0.025 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>0.032 7075-T6 Clad</td>
<td>0.032 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Web</td>
<td>0.020 7075-T6 Bare</td>
<td>0.020 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTE

All dimensions are in inches.

Table 13. Beam, Ramp Sta’s 0 to 98, BL 48

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Stiffener</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Fitting</td>
<td>Note B</td>
<td>--</td>
<td>NOTE C</td>
</tr>
<tr>
<td>10</td>
<td>Cap</td>
<td>ALCOA 55794 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Cap</td>
<td>ALCOA 55794 7075-T6</td>
<td>0.100 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>13</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.030 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>14</td>
<td>Web</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>15</td>
<td>Angle</td>
<td>0.070 7075-T6 Clad</td>
<td>0.080 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>16</td>
<td>Cap</td>
<td>0.063 7075-T6 Clad</td>
<td>0.071 7072-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with fitting, 114S6802-1 LH, or –2 RH.
C. Refer to Figure 7 for repair of fitting bushing.
NOTE

Refer to Tables 14 through 16 for index number reference.

Figure 5. Beam, Ramp Sta’s 83 to 98, BL’s 0 and 15; Beam, Ramp Sta’s 0 to 98, BL’s 20 and 44
### Table 14. Beam, Ramp Sta's 83 to 98, BL's 0 and 15

<table>
<thead>
<tr>
<th>INDEX NO</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Web</td>
<td>0.050 7075-T6</td>
<td>0.063 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>AND10136-1401 7075-T73</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Doubler</td>
<td>0.040 7075-T6</td>
<td>0.050 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Pad</td>
<td>0.188 Nylon Sheet</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Cap</td>
<td>0.063 7075-T6 Clad</td>
<td>0.071 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>Reynolds 8665 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Support</td>
<td>VS90328 7075-T6</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Stiffener</td>
<td>ALCOA 12883 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Cap</td>
<td>ALCOA 12883 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Replace damaged section with material same as original.

### Table 15. Beam, Ramp Sta's 0 to 98, BL 20

<table>
<thead>
<tr>
<th>INDEX NO</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
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<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Angle</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Cap</td>
<td></td>
<td>Note E</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Stiffener</td>
<td>0.032 7075-T6</td>
<td>0.036 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Track</td>
<td></td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Stiffener</td>
<td>AND10138-1004 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>15</td>
<td>Stiffener</td>
<td>ALCOA 30934 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>16</td>
<td>Web</td>
<td>0.020 7075-T6</td>
<td>0.025 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>17</td>
<td>Stiffener</td>
<td>ALCOA 59256 7075-T6</td>
<td>0.053 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Cap</td>
<td>VS90560 X 0.100 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Bumper</td>
<td></td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>20</td>
<td>Stiffener</td>
<td>ALCOA 30934 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>21</td>
<td>Cap</td>
<td>AND10134-1202 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>22</td>
<td>Stiffener</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>23</td>
<td>Web</td>
<td>0.032 7075-T6</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>24</td>
<td>Gusset</td>
<td>0.032 7075-T6</td>
<td>0.040 4130</td>
<td>0086 00</td>
</tr>
<tr>
<td>25</td>
<td>Web</td>
<td>0.063 7075-T6</td>
<td>0.071 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>26</td>
<td>Hinge</td>
<td>114S6806-1 AND 2</td>
<td>Note B</td>
<td>0093 00</td>
</tr>
</tbody>
</table>
REPAIR - continued

Table 15. Beam, Ramp Sta’s 0 to 98, BL 20 – continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</thead>
<tbody>
<tr>
<td>27</td>
<td>Cap</td>
<td>AND10133-1203 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>28</td>
<td>Doubler</td>
<td>0.020 7075-T6</td>
<td>0.025 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace damaged section with material same as original.
C. Replace with bumper, 114S661-1.
D. Replace with track, 114S6811-3 LH or 114S6811-1 RH.
E. Replace with cap, 114S6151-113 LH or 114S6151-114 RH.

Table 16. Beam, Ramp Sta’s 0 to 98, BL 44

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
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<th>WORK PACKAGE</th>
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</thead>
<tbody>
<tr>
<td>29</td>
<td>Gang Channel</td>
<td>RM52LHTG51-02-J32</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>30</td>
<td>Stiffener</td>
<td>ALCOA 67580 7075T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>31</td>
<td>Cap</td>
<td>VS90531 MAG ZK60-AT5</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>32</td>
<td>Bracket</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>33</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>34</td>
<td>Stiffener</td>
<td>ALCOA 2247 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>35</td>
<td>Stiffener</td>
<td>VS70504-4 7075-T6</td>
<td>0.040 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>36</td>
<td>Stiffener</td>
<td>AND10136-1501 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>37</td>
<td>Web</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Note C</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Cap</td>
<td>Harvey 16199 7075-T6</td>
<td>0.150 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>39</td>
<td>Stiffener</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>40</td>
<td>Stiffener</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>41</td>
<td>Web</td>
<td>0.063 7075-T6 Bare</td>
<td>0.071 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>42</td>
<td>Hinge</td>
<td>6806-1-2</td>
<td>Note B</td>
<td>0093 00</td>
</tr>
</tbody>
</table>
Table 16. Beam, Ramp Sta’s 0 to 98, BL 44 - continued

<table>
<thead>
<tr>
<th>INDEX NO</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>Strap</td>
<td>0.063 7075-T6 Clad</td>
<td>0.071 7075-T6 Clad Note D</td>
<td>0086 00</td>
</tr>
<tr>
<td>44</td>
<td>Cap</td>
<td>ALCOA 59409 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace damaged sections with material same as original.
C. For access to the LH and RH actuator nut plate, cut a 4-inch diameter hole at ramp sta 26. Install 8 nut plates, P/N MS21060-L3 around each hole on web. Cut a 51/4-inch diameter cover plate of 0.040-inch 7075-T6 aluminum alloy.
D. Replace hex headed JO-Bolts at ramp sta 10, ramp WL 2, BL 44 left and right with flush head JO-Bolts, P/N PLT110-6-4, NSN 5320-00-637-6115, to prevent damage to skid rail, ramp hinge tunnel, cap strap, cap angle, and cap.

NOTE

Refer to Table 17 for index number reference.
### Table 17. Gate Assembly, Cargo Loading Ramp

<table>
<thead>
<tr>
<th>INDEX NO</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hinge</td>
<td>BAC1514-1643 7075-T6</td>
<td>Note B</td>
<td>0093 00</td>
</tr>
<tr>
<td>2</td>
<td>Channel</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 7075-T6 Clad</td>
<td>087 00</td>
</tr>
<tr>
<td>3</td>
<td>Bracket</td>
<td>--</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Roller</td>
<td>Nylon, 1.0-Inch Dia</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Bumper</td>
<td>Silicone Rubber Laminar</td>
<td>Note C</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>ALCOA 56914 7075-T6</td>
<td>0150 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Hinge</td>
<td>BAC1514-1643 7075-T6</td>
<td>Note B</td>
<td>0093 00</td>
</tr>
<tr>
<td>8</td>
<td>Bumper</td>
<td>Silicone Rubber Laminar</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Channel</td>
<td>0.063 7075-T6 Clad</td>
<td>0.071 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. If repair is impractical, replace with material same as original.
C. Replace with bumper, 114S6709-1.
D. Replace with bumper, 14S6709-2.
E. Replace with roller, 114S6706-1.
F. Replace with bracket, 114S6109-29.
NOTES

A. All dimensions are in inches.
B. ID and OD of bushings to be concentric within 0.003-inch TIR.
C. Heat treat bushings to 125,000 to 145,000 psi.
D. 1.25-µ inch RHR maximum machine surface finish.
E. Cadmium plate IAW QQ-P-416, Type II, Class 3.
F. All dimensions to be after plating.

Figure 7. Cargo Ramp Actuator Support Fitting

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CARGO RAMP FLOORING AND AUXILIARY
LOADING RAMPS REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0086 00
WP 0087 00
WP 0088 00
WP 0093 00
WP 0114 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the cargo ramp flooring, auxiliary loading ramps, and loading ramp supports. Refer to WP 0114 00 for floor panel inspection criteria and repair procedures. The Depot/Contractor may find magnesium floor panels installed in some aircraft. If found, advise the Contracting Officer and request permission to upgrade the ramp flooring to aluminum alloy panels in the interest of corrosion prevention.

Figure 1. Cargo Ramp Flooring and Auxiliary Loading Ramps
NOTE
Refer to Table 1 for index number reference.

Table 1. Auxiliary Ramp and Supports

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hinge Assembly</td>
<td>Dow 10566 6061-T6</td>
<td>Note B</td>
<td>0093 00</td>
</tr>
<tr>
<td>2</td>
<td>Structural Member</td>
<td>Dow XM18 6061-T6</td>
<td>Note C</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Inner Tube</td>
<td>0.375 6061-T6511</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Outer Tube</td>
<td>0.250 6061-T6</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Foot</td>
<td>0.250 6061-T6</td>
<td>Note D</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Repair by insertion or replace with original material.
C. Repair not practical. Replace with original part.
D. Repair not practical. Fabricate new part or replace with new original material.
NOTE

Refer to Table 2 for index number reference.

Figure 3. Cargo Ramp Flooring - Magnesium Floorboards (Sheet 1 of 2)

Table 2. Cargo Ramp Flooring - Magnesium Floorboards

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Panel</td>
<td>0.160 7075-T6</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Panel</td>
<td>Note G</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Panel</td>
<td>Note H</td>
<td>Note B</td>
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</tr>
<tr>
<td>8</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Beam</td>
<td>Reference Only</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Panel</td>
<td>0.160 7075-T6</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
</tbody>
</table>
Table 2. Cargo Ramp Flooring - Magnesium Floorboards - continued

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Angle</td>
<td>ALCOA 14202 7075-T6</td>
<td>Note B</td>
<td>0087 00</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Plug</td>
<td>SS-48166RK2215</td>
<td>Note C</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Angle</td>
<td>ALCOA 14202 7075-T6</td>
<td>Note B</td>
<td>0087 00</td>
<td></td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Repair material same as original.
C. Replace with plug, SS-48166RK2215.
D. Replace with receptacle, 114S2893-6.
F. VS90558 MAG ZK 60A-T5
G. VS90557 MAG ZK 60A-T5
H. VS90559 MAG ZK 60A-T5

NOTE

Refer to Table 3 for index number reference.

Figure 3. Cargo Ramp Flooring - Aluminum Floorboards (Sheet 2 of 2)
REPAIR - continued

Table 3. Cargo Ramp Flooring - Aluminum Floorboards

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Panel</td>
<td>0.160 7075-T6</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Panel</td>
<td>Note F</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Receptacle</td>
<td>7075-T6 Bare</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Beam</td>
<td>Reference Only</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Panel</td>
<td>0.160 7075-T6</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Angle</td>
<td>ALCOA 14202 7075-T6</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Plug</td>
<td>SS-48166RK2215</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Angle</td>
<td>ALCOA 14202 7075-T6</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Adapter</td>
<td>Alloy Steel</td>
<td>Note G</td>
<td>--</td>
</tr>
<tr>
<td>16</td>
<td>Adapter</td>
<td>Alloy Steel</td>
<td>Note H</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Repair material same as original.
C. Replace with plug, SS-48166RK2215.
D. Replace with receptacle, 114S2893-6.
F. BAC 1510, al alloy extrusion, 7070-T73511
G. Replace with adapter assembly, FDC 4145.
H. Replace with adapter, 145SK262-3.

END OF WORK PACKAGE
**DEPOT MAINTENANCE WORK REQUIREMENT**

**CH-47D HELICOPTER**

**CARGO RAMP DOOR BONDED ASSEMBLY REPAIRS**

**INITIAL SETUP**

**Test Equipment:**
As Required

**Tools and Special Tools:**
As Required

**Material/Parts:**
As Required

**Personnel Required:**
As Required

**References:**
- TM 1-1500-204-23 Series
- TM 55-1520-240-23 Series
- WP 0083 00
- WP 0086 00
- WP 0087 00
- WP 0088 00
- WP 0095 00

**Equipment Conditions:**
As Required

**Special Environmental Condition:**
As Required

**SCOPE**

This work package describes repair procedures for the cargo ramp door bonded assembly, to include bonded panel, rubber seals, and emergency release. Refer to Figure 1.
NOTE
Refer to Table 1 for index number reference.

Figure 1. Cargo Ramp Door Bonded Assembly
Table 1. Cargo Ramp Door Bonded Assembly

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Support Assembly -- Note E</td>
<td>--</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Emer Release</td>
<td>--</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Spacer</td>
<td>VS90585 6061-T6</td>
<td>Note F</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Edger Member Pad</td>
<td>Scotch Ply</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Seal</td>
<td>BAC 1530-43 Silicone Rubber</td>
<td>Note F</td>
<td>0095 00</td>
</tr>
<tr>
<td>6</td>
<td>Seal Strip</td>
<td>0.025 7075-T6 Clad</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>7</td>
<td>Assembly</td>
<td>--</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Core</td>
<td>0.968 2.3-1/4-10N-3003</td>
<td>Notes B and C</td>
<td>0083 00</td>
</tr>
<tr>
<td>9</td>
<td>Skin</td>
<td>0.020 2024-T4 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>10</td>
<td>Core</td>
<td>0.968 6.0-1/4-30N-3003</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>11</td>
<td>Zee</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Frame, Panel</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Panel</td>
<td>0.020 6061-T6 Bare</td>
<td>0.025 6061-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>14</td>
<td>Coaming</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Doubler</td>
<td>0.012 7075-T6 Clad</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>16</td>
<td>Skin</td>
<td>0.016 7075-T6 BARE</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>17</td>
<td>Seal</td>
<td>Silicone Rubber 7030</td>
<td>Note D</td>
<td>0095 00</td>
</tr>
<tr>
<td>18</td>
<td>Former</td>
<td>AND 10139-0505 7075-T6</td>
<td>0.071 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Seal Splice</td>
<td>Hollow Extruded Rubber</td>
<td>Note D</td>
<td>0095 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Component is a bonded assembly. Repair using same material as original.
C. Used in pad assembly area only.
D. This material is the preferred replacement for Item 5. Seal is hollow extruded rubber, and may be repaired by splicing with sponge rubber, and/or replacing damaged sections. The seal may also be replaced using a piece of the VS80549 seal splice material. If seals are extensively damaged, replace the entire seal.
E. Replace with new part.
F. If damage is other than minor, replace with new part, 114S6601-49 LH and 114S6601-50 RH.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AFT PYLON EXTERIOR REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
Adhesive (Item 24, WP 0157 00)
Cloth, Glass (Item 78, WP 0157 00)
Screen (Item 153, WP 0157 00)
Scrim Cloth (Item 155, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0081 00
WP 0083 00
WP 0084 00
WP 0086 00
WP 0087 00
WP 0088 00
WP 0093 00
WP 0094 00
WP 0095 00
WP 0097 00
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes repair procedures for the following aft pylon exterior components. Refer to Figure 1.

1. Work Platform
2. Trailing Edge Fairing
3. Aft Crown Fairing
4. Mid Crown Fairing
5. Forward Crown Fairing
6. Leading Edge Hinged Fairing
7. Aft Weather Protective Cover (Rain Shield) Refer to WP 0097 00 for Forward Weather Protective Cover repair procedures.
Figure 1. Aft Pylon Exterior Components
REPAIR - continued

NOTE

Refer to Table 1 for index number reference.

Figure 2. Aft Pylon Work Platform

Table 1. Aft Pylon Work Platform

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin</td>
<td>0.016 2024-T4 Clad</td>
<td>Notes B and D</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Angle</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Cover</td>
<td>4 Ply, No. 181 Glass Cloth</td>
<td>Note C</td>
<td>0081 00</td>
</tr>
<tr>
<td>4</td>
<td>Thread Sheet</td>
<td>0.025 2024-T4 Clad</td>
<td>Notes B and D</td>
<td>0083 00</td>
</tr>
<tr>
<td>5</td>
<td>Core</td>
<td>0.590,2.3-1/4-10N3003</td>
<td>Notes B and D</td>
<td>0083 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Sandwich honeycomb construction; repair with original material.
C. Repair with original material.
D. These repairs are for composite construction. Refer to Work Package 0084 00 for composite construction repair procedures.
NOTE

Refer to Table 2 for index number reference.

Figure 3. Aft Pylon Trailing Edge (Sheet 1 of 2)
Table 2. Aft Pylon Trailing Edge

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zee</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Zee</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Zee</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Strap</td>
<td>0.070 Webbing MIL-W-5625</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Door</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Zee</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Zee</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Zee</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Zee</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Zee</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Zee</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Doubler</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T4 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>14</td>
<td>Zee</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Zee</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Damage other than minor, replace with strap, 114S4603-19.
C. Damage other than minor, replace using original material.
D. Left side shown, right side same as left.
NOTE
Refer to Table 3 for index number reference.

Table 3. Aft Pylon Trailing Edge

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin</td>
<td>Laminated Cloth 181-77 MIL-C-9084</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>2</td>
<td>Skin</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Skin</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>0.032 2024 T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>
Table 3. Aft Pylon Trailing Edge - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>14</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>16</td>
<td>Skin</td>
<td>0.025 2024-T4 Clad</td>
<td>0.032 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>17</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Laminated impregnated cloth (Item 78, WP 0157 00).

Refer to Table 4 for index number reference.

Figure 4. Aft Pylon Aft Crown Fairing (Sheet 1 of 2)
Table 4. Aft Pylon Aft Crown Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td></td>
<td>Former Note C</td>
<td>0.050 2024-T42 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Skin</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>BAC1517 1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener</td>
<td>BAC1517 1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Doubler</td>
<td>0.025 7075-T6 Clad</td>
<td>0.025 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Stiffener</td>
<td>BAC1517 1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener</td>
<td>BAC1517 1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Skin</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Skin</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>10</td>
<td>Stiffener</td>
<td>BAC1517 1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Stiffener</td>
<td>BAC1517 1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Left side shown, right side same as left.
C. This part is used on aircraft serial numbers 92-0367 and 92-0368.
NOTE

Refer to Table 5 for index number reference for Sta 575.
Refer to Table 6 for index number reference for Sta 594.

Figure 4. Aft Pylon Aft Crown Fairing Frames (Sheet 2 of 2)
### Table 5. Aft Pylon Aft Crown Fairing, Frame Sta 575

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Former</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td></td>
<td>Former Note B</td>
<td>0.050 2024-T42 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>008700</td>
</tr>
<tr>
<td>2</td>
<td>Gang Channel</td>
<td>NAS689-DT-3</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener BAC1517-1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Clip</td>
<td>0.040 2024-T3 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Stiffener BAC1517-1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Clip</td>
<td>0.040 2024-T3 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Stiffener 0.025 6061-T6 Clad</td>
<td>0.025 6061-T6 Clad</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Clip</td>
<td>0.040 2024-T3 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Stiffener BAC1517-1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Tension Fitting ALCOA 30201 7075-T6</td>
<td>Note D</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Clip</td>
<td>0.040 2024-T3 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Stiffener BAC1517-1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Clip</td>
<td>0.040 2024-T3 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Shield Laminated Cloth MIL-P-8013 Type 1</td>
<td>Note D</td>
<td>0081 00</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Plate</td>
<td>0.250 301 1/4H Cres</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>16</td>
<td>Gusset</td>
<td>0.032 2024-T3 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
</tbody>
</table>

### NOTES
- A. All dimensions are in inches.
- B. This part is used on aircraft serial numbers 92-0367 and 92-0368.
- C. Repair not practicable, replace with original material.
- D. Repair using original material.
- E. Left side shown, right side same as left.
### Table 6. Aft Pylon Aft Crown Fairing, Frame, Sta 594

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stiffener</td>
<td>BAC1517-1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>BAC1517-1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>ALCOA 10885 2024-T4</td>
<td>Note D</td>
<td>0087 22</td>
</tr>
<tr>
<td>4</td>
<td>Clip</td>
<td>0.040 2024-T3</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Clip</td>
<td>0.040 2024-T3</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Clip</td>
<td>0.025 2024-T4</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Former</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td></td>
<td>Former Note B</td>
<td>0.050 2024-T42 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Clip</td>
<td>0.040 2024-T3 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>9</td>
<td>Stiffener</td>
<td>BAC1517-1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Shim</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Clip</td>
<td>0.040 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Stiffener</td>
<td>BAC1517-1522 7075-T6</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Clip</td>
<td>0.040 2024-T4</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>14</td>
<td>Clip</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>15</td>
<td>Angle</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>16</td>
<td>Clip</td>
<td>0.032 2024-T4 Clad</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>17</td>
<td>Clip</td>
<td>0.032 2024-T4</td>
<td>Note C</td>
<td>--</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. This part is used on aircraft serial numbers 92-0367 and 92-0368.
C. Repair not practicable, replace with original material.
D. Repair using original material.
E. Left side shown, right side same as left.
NOTE

Refer to Table 7 for index number reference.

NOTE

All dimensions are in inches.

Figure 5. Aft Pylon Mid Crown Fairing (Sheet 1 of 3)
NOTE

Refer to Table 7 for index number reference.

Figure 5. Aft Pylon Mid Crown Fairing (Sheet 2 of 3)
NOTE

Refer to Table 7 for index number reference.

Figure 5. Aft Pylon Mid Crown Fairing (Sheet 3 of 3)
### Table 7. Aft Pylon Mid Crown Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Support</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Channel</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Splice Plate</td>
<td>0.025 2024-T4 Clad</td>
<td>0.025 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Fairing</td>
<td>2 Ply, No. 181 Glass Cloth</td>
<td>Note B</td>
<td>0081 00</td>
</tr>
<tr>
<td>5</td>
<td>Gang Channel</td>
<td>NAS 689P7-2</td>
<td>NAS 689P7-2</td>
<td>--</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.

B. Repair using original material.

**NOTE**

Refer to Table 8 for index number reference.

Figure 6. Aft Pylon Forward Crown Fairing (Sheet 1 of 2)
Table 8. Aft Pylon Forward Crown Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Screen</td>
<td>0.040 2024-T3 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>VS70503-1</td>
<td>0.032 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Splice</td>
<td>0.025 2024-T4 Clad</td>
<td>0.025 2024-T4</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Hinge</td>
<td>MS20001PH4</td>
<td>Note C</td>
<td>0093 00</td>
</tr>
<tr>
<td>5</td>
<td>Skin</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Doubler</td>
<td>0.020 2024-T4 Clad</td>
<td>0.025 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>7</td>
<td>Former</td>
<td>0.025 2024-T4 Clad</td>
<td>0.025 301 Cres Anl</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Channel</td>
<td>0.063 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Channel</td>
<td>0.050 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Gusset</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Screen</td>
<td>0.040 2024-T4 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Strut</td>
<td>0.035 RD Smls Tube 6061-T6</td>
<td>0.058 RD Smls TUBE 6061-T6</td>
<td>0094 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Use screen (Item 153, WP 0157 00) for replacement. No repairs permitted.
C. Use repair material same as original.
NOTE
Refer to Table 9 for index number reference.
### Table 9. Aft Pylon Forward Crown Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Splice</td>
<td>0.025 2024-T4 Clad</td>
<td>0.025 2024-T4</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Beam</td>
<td>0.032 2024-T4 Clad or 0.025 2024-T4 Clad</td>
<td>0.032 301 Cres Anl or 0.025 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Beam</td>
<td>0.025 2024-T4 Clad or 0.025 2024-T4 Clad</td>
<td>0.025 301 Cres Anl or 0.025 2024-T4 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Doubler</td>
<td>0.040 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Strap</td>
<td>0.032 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Former</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Doubler</td>
<td>0.020 301 Cres Anl</td>
<td>0.020 301 Cres Anl</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Former</td>
<td>0.040 2024-T4 Clad or 0.040 301 Cres Anl</td>
<td>0.032 2024-T3 Clad or 0.032 301 Cres Anl</td>
<td>0087 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>0.040 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>12</td>
<td>Zee</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Seal</td>
<td>VS80518 Note B</td>
<td>Note B</td>
<td>0095 00</td>
</tr>
<tr>
<td>14</td>
<td>Retainer</td>
<td>0.025 6061-T6 Clad</td>
<td>0.032 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Plate</td>
<td>0.125 301 Cres Anl</td>
<td>0.125 301 Cres Anl</td>
<td>0086 00</td>
</tr>
<tr>
<td>16</td>
<td>Seal</td>
<td>VS80540-1 Note B</td>
<td>Note B</td>
<td>0095 00</td>
</tr>
<tr>
<td>17</td>
<td>Angle</td>
<td>BAC 1503-1420-7075-T6</td>
<td>0.040 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Seal</td>
<td>0.050 Syn Rubber</td>
<td>Note B</td>
<td>0095 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Use repair material same as original.
NOTE
Refer to Table 10 for index number reference.

Figure 7. Aft Pylon Leading Edge Hinged Fairing

Table 10. Aft Pylon Leading Edge Hinged Fairing

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zee</td>
<td>0.070 7075-T6 Clad</td>
<td>0.080 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Support</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Zee</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>0.080 7075-T6 Clad</td>
<td>0.080 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>
NOTE

Refer to Table 11 for index number reference.

NOTE

All dimensions are in inches.

Figure 8. Aft Weather Protective Cover (Sheet 1 of 3)
REPAIR - continued

NOTE
Refer to Table 11 for index number reference.

SECTION THROUGH COMPLETED REPLACEMENT

REPAIR OF COVER (2)

NOTES
A. All dimensions are in inches.
B. Remove attaching hardware. Use heat 200 degrees F to 250 degrees F (93 degrees C to 121 degrees C) to remove damaged stiffener. Bond stiffeners, 114R6057-3, to cover using scrim cloth (Item 155, WP 0157 00) and adhesive (Item 24, WP 0157 00). Install attaching hardware after adhesive has cured.
C. Torque nuts from 18 to 20 inch-lbs above friction torque.

Figure 8. Aft Weather Protective Cover (Sheet 2 of 3)
Table 11. Aft Weather Protective Cover

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cover</td>
<td>Note C</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>0.090 2024-T3 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Boot Assy</td>
<td>--</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Ring</td>
<td>0.063 6061-T6 Clad</td>
<td>Note E</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>Stiffener</td>
<td>0.032 6061-T4</td>
<td>Note B</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. No cracks allowed. Fabricate replacement part from 0.190-inch thick corrosion resistant steel; Condition A, Annealed, MIL-S-25043. If corrosion resistant steel is not available, use original material as alternate.
C. The core of the cover is 0.50-inch thick expanded perforated honeycomb MIL-L-7438, 3-31/4- ISN (50-52). Replace damaged sections with section corresponding to the original. The skin over core and remainder of cover are laminates of impregnated glass cloth, (Item 78, WP 0157 00).
D. If repair not feasible, replace with boot assembly, 114R6055-1.
E. Replace with new ring.

NOTE

Refer to Table 12 for index number reference.

Figure 8. AFT Weather Protective Cover (Sheet 3 of 3)
Table 12. Aft Weather Protective Cover

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cover</td>
<td>Pre-Preg Glass Fabric Type 1581 or 7781</td>
<td>Note B</td>
<td>0083 00</td>
</tr>
<tr>
<td>2</td>
<td>Collar</td>
<td>Nema Grade G-10 Laminate</td>
<td>Note C</td>
<td>0083 00</td>
</tr>
<tr>
<td>3</td>
<td>Ring Assy</td>
<td>BMA8-79 Glass Fiber Pre-Preg Type 1581 or 7781</td>
<td>Note D</td>
<td>0081 00</td>
</tr>
<tr>
<td>4</td>
<td>Core</td>
<td>STOCK 0.75 BMS8-124, CI Type I Grade 4</td>
<td>0.75 BMS8-124, CI Type I Grade 4</td>
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NOTES
A. All dimensions are in inches.
B. Top and bottom skin are made of four plies of fiberglass type 1581 or 7781.
C. The collar is made of two plies of Nema Grade G-10 laminated fiber cloth top and bottom.
D. Replace with new ring assembly, 414R6001-5.
E. If repair not feasible, replace with boot assembly, 114R6055-17.

END OF WORK PACKAGE
# DEPOT MAINTENANCE WORK REQUIREMENT
## CH-47D HELICOPTER
### AFT PYLON INTERIOR REPAIRS

## INITIAL SETUP

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## SCOPE

This work package describes repair procedures for the aft pylon interior components to include formers, beams, decks, and support structures. Refer to Figure 1.

![Aft Pylon Interior Components](image-url)
NOTE

Refer to Table 1 for index number reference.

Figure 2. Aft Pylon Assembly
<table>
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<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
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## Table 1. Aft Pylon Assembly - continued

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### NOTES

A. All dimensions are in inches.

B. Damage more than negligible, replace with beam 114S4119-56.

C. Damage more than negligible, replace with beam 114S4119-57.

D. Damage more than negligible, replace with attachment 114S4836-1.

E. Damage more than negligible, replace with attachment 114S4835-1.

F. Damage more than negligible, replace with attachment 114S4811-5.

G. Damage more than negligible, replace with attachment 114S4801-1.

H. Damage more than negligible, replace with attachment 114S4805-4.
   - Use locating fixture 114G1247-1. Replace attachments separately to prevent mislocation.

I. Damage more than negligible, replace with channel 114S4119-45.

J. Damage more than negligible, replace with channel 114S4119-46.
NOTE
Refer to Table 1 for index number reference.

Figure 3. Aft Pylon Assembly – Aircraft Serial Numbers 92-0367 and 92-0368

Table 2. Aft Pylon Assembly – Aircraft Serial Numbers 92-0367 and 92-0368

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REPAIR - continued

Table 2. Aft Pylon Assembly – Aircraft Serial Numbers 92-0367 and 92-0368 - continued

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NOTES
A. All dimensions are in inches.
B. Damage more than negligible, replace with beam 114S4119-66.
C. Damage more than negligible, replace with support 114S4106-1.
D. Damage more than negligible, replace with support 114S4109-29.
E. Damage more than negligible, replace with support 114S4111-13.
F. Damage more than negligible, repair or replace with original material.
REPAIR - continued

NOTES
A. All dimensions are in inches.
B. Bolt hole may be 0.005-inch oversize or 0.005-inch out of round (max).

Figure 4. Aft Pylon Swiveling Actuator Support

0129 00-7
NOTE

Refer to Table 3 for index number reference.

Figure 5. Aft Pylon Deck, WL 72
Table 3. Aft Pylon Deck, WL 72

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<td>38</td>
<td>Zee</td>
<td>0.050 2024-T3 Clad</td>
<td>Note G</td>
<td></td>
</tr>
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</table>
Table 3. Aft Pylon Deck, WL 72 - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>Channel</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>Note G</td>
</tr>
<tr>
<td>40</td>
<td>Zee</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>Note G</td>
</tr>
<tr>
<td>41</td>
<td>Clip</td>
<td>AND10133-1401 7075-T6511</td>
<td>Note B</td>
<td>Note G</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace with material, same as original.
C. Replace with retainer, 114S4113-129.
D. Replace with retainer, 114S4113-127.
E. Repair as shown in Figure 7 or replace with assembly, 114S4823-1.
F. Repair as shown in Figure 7 or replace with assembly, 114S4824-1.
G. Effective only for 81-23381 thru 81-23389, 82-23762 thru 82-23780, 83-24102 thru 83-24125, and 84-24152 thru 84-24157.
NOTE

Refer to Table 4 for index number reference.

![Diagram of Aft Pylon Hydraulic Equipment Support Structure]

Table 4. Aft Pylon Hydraulic Equipment Support Structure

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Web</td>
<td>0.032 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>Note C 0086 00</td>
</tr>
<tr>
<td>2</td>
<td>Tee</td>
<td>ALCOA 49225 7075-T6</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>Web End</td>
<td>0.032 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>Note C 0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Zee</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Zee</td>
<td>0.050 2024-T3 Clad</td>
<td>0.063 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Clips</td>
<td>0.063 2024-T3 Clad</td>
<td>0.071 2024-T3 Clad</td>
<td>Note C</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Replace with original material.
C. Replace rivets with 5/32-inch hex bolts.
NOTES
A. All dimensions are in inches.
B. If bushing mounting holes are worn or elongated, line ream both sides.
C. 80-μ inches (RMS) max surface finish.

Figure 7. Aft Pylon Support Assemblies
REPAIR - continued

NOTE
Refer to Table 5 for index number reference.

Figure 8. Aft Pylon Deck, WL 90

Table 5. Aft Pylon Deck, WL 90

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Angle</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Angle</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Angle</td>
<td>Harvey 15078 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>Harvey 15078 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>8</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Angle</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>13</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>
# Table 5. Aft Pylon Deck, WL 90 - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Channel</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Angle</td>
<td>AND10133-0701 7075-T6</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>16</td>
<td>Angle</td>
<td>Reynolds 5761 7075-T6</td>
<td>0.070 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>17</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Angle</td>
<td>Harvey 15078 7075-T6</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Channel</td>
<td>0.040 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>21</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>22</td>
<td>Angle</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

**NOTE**

All dimensions are in inches.

**NOTE**

Refer to Table 6 for index number reference.

---

![Figure 9. Aft Pylon Deck, WL 90 - Aircraft Serial Numbers 92-0367 and 92-0368 Repair](image-url)
## Table 6. Aft Pylon Deck, WL 90 - Serial Numbers 92-0367 and 92-0368

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Angle</td>
<td>0.032 301CRES 1/2 HD</td>
<td>0.040 301 Cres 1/2 Hd</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Angle</td>
<td>VS70504-4</td>
<td>Note B</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>Harvey 15078 7075-T6</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>BAC1530-1420 7075-T6511</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Channel</td>
<td>0.040 7075-T6</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Angle</td>
<td>BAC1503-1420 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>AND10133-0701 7075-T6</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Channel</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>Reynolds 5761 7075-T6</td>
<td>0.070 4130</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.

B. Replace with same material as original.

### NOTE

Refer to Table 7 for index number reference.

---

**Figure 10. Aft Pylon Deck, WL 119 (Canted)**
### Table 7. Aft Pylon Deck, WL 119 (Canted)

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tee</td>
<td>AND10136-2006 7075-T6</td>
<td>Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Tee</td>
<td>ALCOA 33158 7075-T6</td>
<td>Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.050 301 Cres 1/4 Hd</td>
<td>0.063 301 Cres 1/4 Hd</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Tee</td>
<td>AND10136-1406 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Web</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>6</td>
<td>Zee</td>
<td>0.063 7075-T6 Bare</td>
<td>0.071 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Web</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Zee</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Angle</td>
<td>ALCOA 12883 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Angle</td>
<td>Reynolds 8158 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>0.125 301 Cres 1/4 Hd</td>
<td>0.125 301 Cres 1/4 Hd</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Web</td>
<td>0.032 301 Cres 1/2 Hd</td>
<td>0.040 301 Cres 1/2 Hd</td>
<td>0086 00</td>
</tr>
<tr>
<td>13</td>
<td>Cap</td>
<td>VS90525 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Doubler</td>
<td>0.063 2024-T4 Clad</td>
<td>0.071 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>15</td>
<td>Tee</td>
<td>Reynolds 19810</td>
<td>Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>16</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>17</td>
<td>Angle</td>
<td>ALCOA 45827 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Angle</td>
<td>VS70504-3</td>
<td>0.032 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Tee</td>
<td>ALCOA 52057 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>20</td>
<td>Doubler</td>
<td>0.063 2024-T4 Bare</td>
<td>0.071 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
</tbody>
</table>

### NOTES

A. All dimensions are in inches.
B. Station shown represents the centerline of overlap of the webs.
C. Repair or replace with original material.
NOTE

Refer to Table 8 for index number reference.

Table 8. Aft Pylon Deck, WL 119 (Canted) – Aircraft Serial Numbers 92-0367 and 92-0368

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tee</td>
<td>ALCOA 52057 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Web</td>
<td>0.032 301 Cres ½ Hd</td>
<td>0.040 301 Cres ½ Hd</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>ALCOA 66428 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Tee</td>
<td>ALCOA 33186 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Tee</td>
<td>AND10136-1406 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>ALCOA 12883 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Web</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>8</td>
<td>Zee</td>
<td>0.063 7075-T6 Bare</td>
<td>0.071 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Zee</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>10</td>
<td>Web</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>0.125 301 Cres ½ Hd</td>
<td>0.125 301 Cres ½ Hd</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Web</td>
<td>0.050 301 Cres ½ Hd</td>
<td>0.063 301 ½ Hd</td>
<td>0086 00</td>
</tr>
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</table>
Table 8. Aft Pylon Deck, WL 119 (Canted) – Aircraft Serial Numbers 92-3067 and 92-0368 - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Doubler</td>
<td>0.063 2024-T4</td>
<td>0.071 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>14</td>
<td>Tee</td>
<td>ALCOA 33495 2024-T4</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>15</td>
<td>Tee</td>
<td>Reynolds 19810 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>16</td>
<td>Angle</td>
<td>VS70504-3 7075-T6</td>
<td>0.032 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>17</td>
<td>Cap</td>
<td>VS90525 7075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Angle</td>
<td>ALCOA 54827 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>19</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>20</td>
<td>Angle</td>
<td>AND10134-1402 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Repair or replace with same material as original.

NOTE

Refer to Table 9 for index number reference.
Table 9. Aft Pylon Full Former, Sta 482

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hinge Half</td>
<td>MS20001H6</td>
<td>Note E</td>
<td>0093 00</td>
</tr>
<tr>
<td>2</td>
<td>Channel</td>
<td>0.063 2024-T3 Clad</td>
<td>0.071 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Plate (Hoist Point)</td>
<td>--</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Channel</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>Note C</td>
</tr>
<tr>
<td>5</td>
<td>Tee</td>
<td>ALCOA 49225 7075-T6</td>
<td>0.063 7075-T6 Bare</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>ALCOA 24761 7075-T6511</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Angle</td>
<td>VS70504-4</td>
<td>0.040 7075-T6 Clad</td>
<td>Note C</td>
</tr>
<tr>
<td>8</td>
<td>Support</td>
<td>0.040 2024-T3 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>Note C</td>
</tr>
<tr>
<td>9</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 clad</td>
<td>Note F</td>
</tr>
<tr>
<td>10</td>
<td>Attachment</td>
<td>AL Aly 2014-T6 Forging</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>ALCOA 61971 7075-T6</td>
<td>0.063 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Tee</td>
<td>ALCOA 49225 2024-T4</td>
<td>0.071 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>13</td>
<td>Stiffener</td>
<td>AND10134-1201 7075-T6511</td>
<td>0.071 7075-T6 Bare</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Damage other than minor replace with attachment, 114S4801-1.
C. If repair is impractical, replace with original material.
D. Damage other than minor replace with hoist point, 114S4101-31.
E. Repair or replace with original material, MS20001H6.
F. Refer to Figure 13, Sheet 1 and Sheet 2, for web repair procedures.
REPAIR - continued

REPAIR PARTS

2. Splice with 0.050-inch, 301 Cres, ½ hard.
3. Web reinforcement 0.040-inch 2024-T4 clad.

NOTES

A. All dimensions are in inches.
B. Insulate dissimilar metals. Refer to WP 0078 00.
C. Determine radius of cutout from radius of the tee prior to removal of tee.
D. Use same fasteners as original configuration.
E. Repair is applicable to either side of BL 0.
F. Refer to Sheet 2 of this figure for repair of crack extending beyond that shown.

Figure 13. Aft Pylon Former, Sta 482 - Web Crack Repair (Sheet 1 of 2)
REPAIR PARTS

2. Splice 0.050-inch 301 ⅞ hd cres.
3. Web replacement 0.040-inch 2024-T4 clad.

NOTES

A. All dimensions are in inches.
B. Insulate dissimilar metals. Refer to WP 0078 00.
C. Determine radius of cutout from radius of tee prior to removal of tee.
D. Use same fasteners as original configuration.
E. Repair is applicable to either side of BL 0.
F. Crack occurring on each side of the former or extending beyond BL 0 on each side can be repaired by spanning the entire area with a single web replacement, 0.040-inch 2024-T4 clad.

Figure 13. Aft Pylon Former, Sta 482 - Web Crack Repair (Sheet 2 of 2)
NOTE
Refer to Table 10 for index number reference.

Figure 14. Aft Pylon Full Formers, Stas 534, 575, and 594

Table 10. Aft Pylon Full Formers, Stas 534, 575, and 594

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>BAC1514-539 7075-T6</td>
<td>0.100 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Web</td>
<td>0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>HARVEY 17413 7075-T6</td>
<td>0.080 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Plate</td>
<td>0.125 7075-T6 Bare</td>
<td>0.125 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Attachment</td>
<td>2014-T6 Forging</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Tee</td>
<td>ALCOA 66517 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Zee</td>
<td>AND10138-1004 7075-T6</td>
<td>0.063 4130</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Angle</td>
<td>0.090 7075-T6 Bare</td>
<td>0.090 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>9</td>
<td>Channel</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>10</td>
<td>Tee</td>
<td>Reynolds 26598 7075-T6</td>
<td>0.125 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>11</td>
<td>Angle</td>
<td>ALCOA 27076</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Angle</td>
<td>0.063 7075-T6 Clad</td>
<td>0.071 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
</tbody>
</table>
Table 10. Aft Pylon Full Formers, Sta’s 534, 575, and 594 - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Angle</td>
<td>ALCOA 67580 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>14</td>
<td>Tee</td>
<td>ALCOA 66517 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>15</td>
<td>Web</td>
<td>0.040 7075-T6 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>16</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>17</td>
<td>Cap</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.080 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Extrusion</td>
<td>BAC1520-1320 Note C</td>
<td>0088 00</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Angle</td>
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<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
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<td>20</td>
<td>Web</td>
<td>0.050 2024-T4 Clad</td>
<td>0.050 2024-T3 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>21</td>
<td>Cap</td>
<td>HARVEY 17413 7075-T6</td>
<td>0.090 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>22</td>
<td>Support</td>
<td>ZK60-T5 Forging Note D</td>
<td>0087 00</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Web</td>
<td>0.071 2024-T4 Clad</td>
<td>0.071 2024-T3 Clad</td>
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<tr>
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<td>Stiffener</td>
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<td>Stiffener</td>
<td>AND10136 2024-T4</td>
<td>AND10136 2024-T4</td>
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<tr>
<td>26</td>
<td>Strap</td>
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<td>0.100 2024-T3</td>
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</tr>
<tr>
<td>27</td>
<td>Angle</td>
<td>VS70504-2 7075-T6</td>
<td>0.040 7075-T6</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with attachment, 114S4801-1.
C. If repair is impractical, replace with original material.
D. Damage other than minor, replace with support, 114S4802-5 LH or 114S4802-7 RH.
NOTE

Refer to Table 11 for index number reference.

Figure 15. Aft Pylon Full Former, Sta 534 - Aircraft Serial Numbers 92-0367 and 92-0368

Table 11. Aft Pylon Full Former, Sta 534 - Aircraft Serial Numbers 92-0367 and 92-0368

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cap</td>
<td>ALCOA 15820 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Extrusion</td>
<td>BAC1520-1320</td>
<td>2024-T4 Extr Note C</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Stiffener</td>
<td>ALCOA 22477 7075-T6</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Angle</td>
<td>ALCOA 71369 7075-T6</td>
<td>0.080 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>VS705042 7075-T6</td>
<td>0.040 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Cap</td>
<td>Harvey 17413 7075-T6</td>
<td>0.090 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Support</td>
<td>ZK60-T5 Forging</td>
<td>Note D</td>
<td>--</td>
</tr>
<tr>
<td>8</td>
<td>Doubler</td>
<td>0.063 7075-T6 Bare</td>
<td>0.071 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>9</td>
<td>Attachment</td>
<td>2014-T6 Forging</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>Web</td>
<td>0.10 7075-T6 Bare</td>
<td>0.10 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>11</td>
<td>Cap</td>
<td>ALCOA 66517 7075-T6</td>
<td>0.071 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>12</td>
<td>Angle</td>
<td>0.040 2024-T3 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>13</td>
<td>Angle</td>
<td>AND10133-1203 2024-T4</td>
<td>0.125 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
</tbody>
</table>
Table 11. Aft Pylon Full Former, Sta 534 - Aircraft Serial Numbers 92-0367 and 92-0368 - continued

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
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</thead>
<tbody>
<tr>
<td>14</td>
<td>Angle</td>
<td>0.040 2024-T4 Clad</td>
<td>0.040 2024-T3 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>15</td>
<td>Zee</td>
<td>ALCOA 59675 7075-T6</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>16</td>
<td>Channel</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>17</td>
<td>Angle</td>
<td>AND10134-1004 2024-T4</td>
<td>AND10134-2024-T4</td>
<td>0088 00</td>
</tr>
<tr>
<td>18</td>
<td>Ring Fitting</td>
<td>--</td>
<td>Note C</td>
<td>--</td>
</tr>
<tr>
<td>19</td>
<td>Stiffener</td>
<td>AND10136-2003 2024-T4</td>
<td>AND10136-2003 2024-T4</td>
<td>0088 00</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with attachment, 114S4801-1.
C. Damage other than minor, replace with ring fitting, 145S4811.
D. Damage other than minor, replace with supports, 114S4802-1 LH or 114S4802-2 RH.

NOTE

Refer to Table 12 for index number reference.
Table 12. Aft Pylon Full Former, Sta 575 - Aircraft Serial Numbers 92-0367 and 92-0368

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tee</td>
<td>ALCOA55794 7075-T6</td>
<td>0.090 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>2</td>
<td>Channel</td>
<td>0.040 7075-T6</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.032 2024-T3 Clad</td>
<td>0.040 7075-T6 Clad</td>
<td>0086 00</td>
</tr>
<tr>
<td>4</td>
<td>Zee</td>
<td>ALCOA 59675 7075-T6</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>BAC1503-1420 7075-T6</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle</td>
<td>ALCOA 28546 7075-T6</td>
<td>0.050 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Support</td>
<td>ZK60-T5 Forging</td>
<td>Note B</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Damage other than minor, replace with supports, 114S4802-1 LH or 114S4802-2 RH.

NOTE

Refer to Table 13 for index number reference.

Figure 17. Aft Pylon Full Former, Sta 594 - Aircraft Serial Numbers 92-0367 and 92-0368
Table 13. Aft Pylon Full Former, Sta 594 - Aircraft Serial Numbers 92-0367 and 92-0368

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clip</td>
<td>0.040 2024-T3 Clad</td>
<td>Note B</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>Cap</td>
<td>BAC1514-539 7075-T6</td>
<td>0.125 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>BAC1506-1985 7075-T6</td>
<td>0.125 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>4</td>
<td>Zee</td>
<td>AND10138-1004 7075-T6</td>
<td>0.063 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>0.090 7075-T6 Bare</td>
<td>1.00 7075-T6 Clad</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Attachment</td>
<td>2014-T6 Forging</td>
<td>Note C</td>
<td>--</td>
</tr>
</tbody>
</table>

**NOTES**

A. All dimensions are in inches.
B. Repair is impractical, replace clip.
C. Damage other than minor, replace with attachments, 114S4801-1.

**NOTE**

Refer to Table 14 for index number reference.

Figure 18. Aft Pylon Partial Formers, Sta's 502, 518, and 555
Table 14. Aft Pylon Partial Formers, Sta’s 502, 518, and 555.3

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Stiffener</td>
<td>ALCOA 83264 7075-T6</td>
<td>Note B</td>
<td>0088 00</td>
</tr>
<tr>
<td>3</td>
<td>Web</td>
<td>0.020 7075-T6 Bare</td>
<td>0.025 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Former</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>6</td>
<td>Former</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>7</td>
<td>Web</td>
<td>0.025 7075-T6 Bare</td>
<td>0.032 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>8</td>
<td>Clip</td>
<td>ALCOA 55794</td>
<td>Note C</td>
<td>--</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. Replace with original material.
C. Replace with clip, 114S4103-7.

NOTE
Refer to Table 15 for index number reference.

Figure 19. Aft Pylon Bellcrank Support, LH and RH (Sheet 1 of 2)
Table 15. Aft Pylon Bellcrank Support, LH and RH

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Angle</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>2</td>
<td>Channel</td>
<td>0.050 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>3</td>
<td>Support</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>4</td>
<td>Channel</td>
<td>0.040 7075-T6 Bare</td>
<td>0.050 7075-T6 Clad</td>
<td>0087 00</td>
</tr>
<tr>
<td>5</td>
<td>Angle</td>
<td>ALCOA 22507 7075-T6</td>
<td>0.050 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>6</td>
<td>Angle Note B</td>
<td>Reynolds 268077075-T6</td>
<td>0.125 4130</td>
<td>0088 00</td>
</tr>
<tr>
<td>7</td>
<td>Channel</td>
<td>0.032 301 Cres 1/2 Hd</td>
<td>0.040 301 Cres 1/2 Hd</td>
<td>0087 00</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. This part is used on aircraft serial numbers 92-0367 and 92-0368.
Repair Parts
1. Rivet MS20426A, length as required.
2. Doubler 0.020-inch 301 CRES ¼ to ½ hard
3. Doubler 0.020-inch 301 CRES ¼ to ½ hard

NOTE
All dimensions are in inches.

Figure 19. Aft Pylon Bellcrank Support, LH and RH (Sheet 2 of 2)
NOTE

Refer to Table 16 for index number reference.

Figure 20. Aft Pylon Beams, BL 8 L and R
REPAIR - continued

Table 16. Aft Pylon Beams, BL 8 L and R

<table>
<thead>
<tr>
<th>INDEX NO.</th>
<th>NOMENCLATURE</th>
<th>ORIGINAL MATERIAL</th>
<th>REPAIR MATERIAL</th>
<th>WORK PACKAGE</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>Angle 0.032 7075-T6 Bare</td>
<td>0.040 7075-T6 Clad</td>
<td>NOTE G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TEE</td>
<td>ALCOA 37289 7075-T6</td>
<td>0.071 4130</td>
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NOTES

A. All dimensions are in inches.
B. For damage other than minor, replace with support 114S4832-3 fwd and 114S4832-4 aft.
C. For damage other than minor, replace with attachment, 114S4805-4. Use locating fixture, 114G1247-1. Replace attachments one at a time to prevent mislocation.
D. For damage other than minor, replace with support, 114S4832-3.
E. Deleted
F. For damage other than minor, replace with bracket, 114S4118-220. Cut and drill bracket as required for installation.
G. Replace with manufactured part. Manufacture using original material or material listed for repair.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
LANDING GEAR REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
DMWR 55-1620-224
DMWR 55-1620-225
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0039 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

1. Refer to WP 0039 00 for inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
# DEPOT MAINTENANCE WORK REQUIREMENT
## CH-47D HELICOPTER
### POWERPLANT REPAIRS

## INITIAL SETUP

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1. Refer to WP 0040 00 for inspection accept/reject criteria.
2. Refer to references above for repair or overhaul.

## END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT  
CH-47D HELICOPTER  
ROTARY-WING BLADES/FORWARD AND AFT ROTOR-WING HEADS REPAIRS

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**Equipment Conditions:**  
As Required

**Special Environmental Condition:**  
As Required

1. Refer to WP 0041 00 Rotary-Wing Blades for inspection accept/reject criteria.  
Refer to WP 0042 00 Forward and Aft Rotor-Wing Heads for inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
DRIVE SYSTEM REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
DMWR 55-1615-321
DMWR 55-1615-322
DMWR 55-1615-323
DMWR 55-1615-324
DMWR 55-1615-325
TM 55-1520-240-23 Series
WP 0043 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

1. Refer to WP 0043 00 for inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
HYDRAULIC SYSTEM REPAIRS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
- DMWR 55-1650-154
- DMWR 55-1650-302
- DMWR 55-1650-396
- DMWR 55-1650-398
- DMWR 55-1650-412
- DMWR 55-1650-414
- DMWR 55-4140-220
- DMWR 55-1650-240-23 Series
- WP 0044 00 through WP 0048 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

WARNING

Preservative hydraulic fluids, MIL-H-46170 and MIL-PRF-6083 will not be used for preservation of army aircraft hydraulic components. Instead, substitute MIL-PER-83282 and MIL-H-5606 hydraulic fluids, respectively, for preservation of these components.

1. Refer to WP 0044 00 for Flight Control Hydraulic System inspection accept/reject criteria.
   Refer to WP 0045 00 for Utility Hydraulic System inspection accept/reject criteria.
   Refer to WP 0046 00 for Cargo Ramp and Door Hydraulic System inspection accept/reject criteria.
   Refer to WP 0047 00 for Cargo Hook Hydraulic Release System inspection accept/reject criteria.
   Refer to WP 0048 00 for Wheel Brake Hydraulic System inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
INSTRUMENTS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
DMWR 55-6610-349
DMWR 55-6620-361
DMWR 55-6695-215
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0049 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

1. Refer to WP 0049 00 for inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
ELECTRICAL SYSTEMS

INITIAL SETUP

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| Personnel Required: | |
|---------------------| |
| As Required         | |

1. Refer to WP 0050 00 for inspection accept/reject criteria.
2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FUEL SYSTEM

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
DMWR 1-4810-229
DMWR 55-1680-360
DMWR 55-2910-200
DMWR 55-2915-168
DMWR 55-2915-296
DMWR 55-6620-326
DMWR 55-6680-333
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0051 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

1. Refer to WP 0051 00 for inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

3. Fuel valve repair: Fuel valves P/N 114PS408-5, 114PS408-6, 114PS141-1, -2, and -4, which leak but are otherwise not damaged, may be repaired by replacing o-ring NSN 5330-00-256-1084.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FLIGHT CONTROL SYSTEMS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
D145-006:10.0200
D145-006:10.0300
D145-006:10.0400
DMWR 55-1615-316
DMWR 55-1680-289
DMWR 55-1680-341
DMWR 55-1680-350
DMWR 55-1680-351
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
WP 0052 00 through WP 0058 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

1. Refer to WP 0052 00 for Cockpit Flight Controls inspection accept/reject criteria.
   Refer to WP 0053 00 for Closet Flight Controls inspection accept/reject criteria.
   Refer to WP 0054 00 for Mixing Flight Controls inspection accept/reject criteria.
   Refer to WP 0055 00 for Forward Upper Flight Controls inspection accept/reject criteria.
   Refer to WP 0056 00 for Tunnel Flight Controls inspection accept/reject criteria.
   Refer to WP 0057 00 for Aft Fuselage and Aft Upper Flight Controls inspection accept/reject criteria.
   Refer to WP 0058 00 Advanced Flight Control System for inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

NOTE

Depot/Contractor is authorized to use Boeing Vertol, Flight Control Rigging Procedure - Complete Aircraft, No. D145-0006:10.0200 as supplemental technical data to Army TM 55-1520-240-23 to process CH-47D aircraft. The objective of this procedure is to ensure that the flight controls are correctly rigged to provide the control motions required for aircraft operation.

Depot/Contractor is authorized to use Boeing Vertol, Flight Control System - Motion Check Complete Aircraft, No. D154-006:10.3000 as supplemental technical data to Army TM 55-1520-240-23 to Process CH-47D aircraft. The object of this procedure is to insure that the flight control cockpit travels and resulting upper boost actuator travels conform to the design parameters. This then ensures that the flight controls have been correctly rigged.
NOTE

Depot/Contractor is authorized to use Boeing Vertol, Flight Control Feel Forces - System Check Complete Aircraft, No. D145-006:10.0400 as supplemental technical data to Army TM 55-1520-240-23 to process CH-47D aircraft. The object of this procedure is to insure that the flight control cockpit forces conform to the designed parameters.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
UTILITY SYSTEMS

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
DMWR 55-1680-246
TM 1-1500-204-23 Series
TM 55-1500-323-24
TM 55-1520-240-23 Series
WP 0059 00 through WP 0061 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

1. Refer to WP 0059 00 for Windshield System inspection accept/reject criteria.
   Refer to WP 0060 00 for Fire Detection System inspection accept/reject criteria.
   Refer to WP 0061 00 for Fire Extinguishing System inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
ENVIRONMENTAL CONTROLS

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Equipment Conditions:
As Required

Special Environmental Condition:
As Required

1. Refer to WP 0062 00 for inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT  
CH-47D HELICOPTER  
CARGO HANDLING/RESCUE WINCH SYSTEM

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1. Refer to WP 0063 00 for inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
AUXILIARY POWER UNIT (APU)

INITIAL SETUP

Test Equipment: As Required
Tools and Special Tools: As Required
Material/Parts: As Required
Personnel Required: As Required

References:
DMWR 55-1650-398
DMWR 55-2835-205
DMWR 55-6115-496
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series
TM 55-2835-205-23 Series
WP 0064 00

Equipment Conditions: As Required
Special Environmental Condition: As Required

1. Refer to WP 0064 00 for inspection accept/reject criteria.
2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT  
CH-47D HELICOPTER  
EXTERNAL CARGO HOOK SYSTEM

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| **Material/Parts:** | Special Environmental Condition: |
| As Required | As Required |

| **Personnel Required:** |
| As Required |

1. Refer to WP 0065 00 for inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
EMERGENCY EQUIPMENT

**INITIAL SETUP**

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1. Refer to WP 0066 00 for inspection accept/reject criteria.
2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 11-1520-240-23
TM 55-1520-240-23 Series
WP 0067 00 through WP 0071 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

1. Refer to WP 0067 00 for Intercommunication System inspection accept/reject criteria.
   Refer to WP 0068 00 for Communications System inspection accept/reject criteria.
   Refer to WP 0069 00 for Navigation Systems inspection accept/reject criteria.
   Refer to WP 0070 00 for Aircraft Survivability Systems inspection accept/reject criteria.
   Refer to WP 0071 00 for Aircraft Antennas inspection accept/reject criteria.

2. Refer to references above for repair or overhaul.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 1-1500-344-23
TM 55-1520-240-23 Series
WP 0075 00
WP 0077 00
WP 0157 00
WP 0161 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

Cleaning and washing of the aircraft shall be in accordance with (IAW) TM 1-1500-204-23 and TM 55-1520-240-23. Instructions for removal of the battery, relief tubes, powerplants, and other items or material are provided in TM 55-1520-240-23. Lubrication procedures after washing or steam cleaning are provided in TM 55-1520-240-23.

NOTE

In accordance with TM 1-1500-344-23, the preferred cleaning solution is listed in Appendix A, Table A.1 as MIL-C-85570, Type II. For stubborn or exceptionally oily areas, MIL-PRF-680, Type II or III is an approved substitution. Mineral Spirits, ASTM D235, Type II, Class C, is an authorized substitute for MIL-PRF-680, Type II and Type IIA. For aircraft surface cleaning, AMCOM has approved products which comply with MIL-PRF-87937C, Type II and MIL-PRF-85570C Type II specifications. Any deviations from established procedures or substitution of cleaning materials must be approved by AMCOM/Contracting Officer.

All materials used in cleaning and corrosion prevention of the basic airframe, components, and parts are listed in WP 0075 00, WP 0077 00, WP 0157 00, TM 1-1500-204-23, TM 1-1500-344-23, and TM 55-1520-240-23. Cautions are provided in all referenced documents to avoid damage of components and to prevent the entrance of water or other solvents into electrical components, ducts, or like openings. Warnings and cautions are provided whenever chemicals or cleaning compounds are used or combined which may result in a dangerous or hazardous mixture.

After washing, corrosion prevention measures shall be IAW WP 0077 00, WP 0161 00 and TM 1-1500-204-23.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
NONDESTRUCTIVE INSPECTION (NDI)

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As required by specific NDI process

Material/Parts:
As required by specific NDI process(s)
- Acetone, Technical (Item 20, WP 0157 00)
- Alcohol, Isopropyl (Item 42, WP 0157 00)
- Cleaning, Compound Solvent (Item 47.1, WP 0157 00)
- Cleaning Solvent, General Purpose (Item 72, WP 0157 00)
- Cleaning Compound Solvent (Item 99.1, WP 0157 00)
- Cleaning Compound Solvent (Item 136.1, WP 0157 00)
- Paper, Wrapping (Item 129, WP 0157 00)

Personnel Required:
As Required

References:
- TM 1-1500-335-23
- TM 1-1520-253-23
- TM 55-1520-240-23 Series
- WP 0075 00
- WP 0077 00
- WP 0157 00
- WP 0161 00

Equipment Conditions:
As Required

Special Environmental Condition:
As required by specific NDI process

SCOPE

Methods used in nondestructive inspection (NDI) are those that may be applied to inspect a structure or component to determine its ability to perform its intended function without damaging or causing any change in the characteristics of the structure or component. During manufacture, aircraft components are given in-process and final inspections. The most commonly used methods are magnetic particle and liquid penetrant because these two methods are bulk processes that provide 100 percent inspection coverage and they are highly effective. It is unusual, but possible, for NDI personnel to locate defects that are inherent, associated with the production of the material, or related to the manufacturing operations. It follows that nearly all maintenance nondestructive inspection requirements are to locate defects that have developed during service (i.e., corrosion and corrosion induced cracking, fatigue cracks, and defects resulting from mechanical damage, improper maintenance, or inappropriate use). It is important that NDI personnel shall be able to distinguish between inherent or in-service defects. A general knowledge of typical sites for in-service defect occurrence and specific knowledge of the mode and location of previous cracking problems for a particular part is relevant. This knowledge will assure that the crack prone areas are identified for inspection and time will not be wasted inspecting areas not subject to in-service cracking.

TM 1-1520-253-23, Nondestructive Inspection Procedures for CH/MH 47 Helicopter Series, defines the specific NDI areas of the helicopter and summarizes the steps necessary to perform satisfactory inspections. It includes the preparation of the helicopter, the inspection area for NDI, safety rules to be observed, highlights of each inspection method, and specific safety precautions for each of these methods. TM 1-1500-335-23 (T.O. 33B-1-1, NAVAIR 01-1A-16), Nondestructive Inspection Methods, is the authority for all NDI procedures within the DOD and will be the only document used for performing nondestructive inspections.

NOTE

Whenever the text of TM 1-1500-335-23 refers to Air Force technical orders for supportive information, refer to the comparable Army documents.
SCOPE - continued

Factors governing the selection of an inspection method are: (1) accessibility, (2) portability of equipment, (3) type of suspected damage, (4) material composition of part to be inspected, (5) surface condition, and (6) degree of sensitivity required for the inspection. In many cases, the method selected will depend primarily on accessibility and practicality. For example, a threaded item that may qualify for eddy current inspection may instead require the substitution of an ultrasonic inspection due to accessibility constraints. However, the ultrasonic inspection must be capable of providing equivalent sensitivity. Also, the type of inspection desired may adversely affect adjacent parts. Inspection methods as specified in TM 1-1520-253-23 were selected in order to provide maximum detection sensitivity while requiring a minimum of removal or disassembly, and at the same time, protect adjacent areas from damage. Radiographic inspection is used only to examine areas partly or totally hidden, or where the suspected damage is internal to the part. Where one method of inspection (primary) reveals an indication of a crack, another method (backup) should be used to verify if a crack is actually present. Quite often backup procedures are limited to disassembly and a good visual inspection. Certain cases may arise when another NDI method could be used to prevent needless or complicated disassembly. For example, a crack in a spar cap may not appear clearly on radiographic film due to cloudiness caused by sealant or substructure clutter. A backup eddy current or ultrasonic method could be used for verification and if no indications were observed, disassembly would not be necessary. Whenever a backup method is used, it shall be specified in every case where the initial damage indication may not be positive proof that a reject condition exists.

NONDESTRUCTIVE INSPECTION REQUIREMENTS

TM 1-1520-253-23 lists critical aircraft items and the associated NDI method(s). The airframe and landing gear group along with the engine group are covered in this DMWR. Refer to the referenced TM for other areas when required.

Mandatory NDI is required for the following items. The Contracting Officer may modify this list or designate other mandatory NDI items.

1. Aft Pylon Equipment Support Structure
2. Combining Transmission Support Fittings and Longitudinal Beams
3. Aft Landing Gear Structure
4. Forward Landing Gear Support Structure
5. Forward Transmission Support Structures
6. Connecting Link
7. Forward Engine Mount Structure
8. Engine Mount Caps
9. Aft Engine Mount Link
10. Aft Engine Mount Adapter
11. Engine Mount Adapter
NONDESTRUCTIVE INSPECTION REQUIREMENTS - continued

Airframe and Landing Gear Group inspection items are shown in Table 1. Refer to Figure 1 for Index Numbers and Figure 2 thru Figure 6 for mandatory inspection items.

Table 1. Airframe and Landing Gear Group Inspection Index

<table>
<thead>
<tr>
<th>Index Number</th>
<th>Nomenclature</th>
<th>Inspection Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Honeycomb Cores and Panels</td>
<td>Bond Testing</td>
</tr>
<tr>
<td>2</td>
<td>Airframe Structures</td>
<td>Eddy Current</td>
</tr>
<tr>
<td>3</td>
<td>Center Cargo Hook</td>
<td>Magnetic Particle</td>
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<td>4</td>
<td>Composite Pylon Hinged Fairings</td>
<td>Bond Testing</td>
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<tr>
<td>*5</td>
<td>Aft Pylon Equipment Support Structure</td>
<td>Eddy Current</td>
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<tr>
<td>*6</td>
<td>Combining Transmission Support Fittings and Longitudinal Beams</td>
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<tr>
<td>7</td>
<td>Cargo Ramp</td>
<td>Bond Testing</td>
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<td>Lower Drag Link Assembly Hardware</td>
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<td>9</td>
<td>Lower Drag Link</td>
<td>Eddy Current</td>
</tr>
<tr>
<td>10</td>
<td>Landing Gear Wheel</td>
<td>Eddy Current</td>
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<tr>
<td>11</td>
<td>Landing Gear Axle</td>
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<td>Aft Landing Gear Structure</td>
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<td>13</td>
<td>Rescue Hatch Lower Door Gearbox Housing and Cover</td>
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<td>15</td>
<td>Pods</td>
<td>Radiographic</td>
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<tr>
<td>16</td>
<td>Pods</td>
<td>Bond Testing</td>
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<td>Forward Landing Gear Torque Arm</td>
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<td>*19</td>
<td>Forward Landing Gear Support Structure</td>
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<tr>
<td>20</td>
<td>Cabin Equipment Support Structure</td>
<td>Eddy Current</td>
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<td>21</td>
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<tr>
<td>*22</td>
<td>Forward Transmission Support Structures</td>
<td>Eddy Current</td>
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</tbody>
</table>

NOTE
* Indicates mandatory NDI item
Figure 1. Airframe and Landing Gear Group NDI Areas
Figure 2. Aft Pylon Equipment Support Structure
Figure 3. Combining Transmission Support Fittings and Longitudinal Beams
Figure 4. Aft Landing Gear Structure
NONDESTRUCTIVE INSPECTION REQUIREMENTS - continued

Figure 5. Forward Landing Gear Support Structure

Figure 6. Forward Transmission Support Structures
NONDESTRUCTIVE INSPECTION REQUIREMENTS - continued

The Engine Group inspection items are shown in Table 2. Refer to Figure 7 for Index Numbers and Figure 8 thru Figure 13 for mandatory inspection items.

Table 2. Engine Group Inspection Index

<table>
<thead>
<tr>
<th>Index Number</th>
<th>Nomenclature</th>
<th>Inspection Method</th>
</tr>
</thead>
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<tr>
<td>*1</td>
<td>Connecting Link</td>
<td>Eddy Current</td>
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<td>*2</td>
<td>Forward Engine Mount Structure</td>
<td>Eddy Current</td>
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<tr>
<td>*3</td>
<td>Engine Mount Caps</td>
<td>Eddy Current</td>
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<tr>
<td>*4</td>
<td>Aft Engine Mount Link</td>
<td>Magnetic Particle</td>
</tr>
<tr>
<td>*5</td>
<td>Aft Engine Mount Adapter</td>
<td>Eddy Current</td>
</tr>
<tr>
<td>6</td>
<td>Exhaust Cone and Stiffener</td>
<td>Fluorescent Penetrant</td>
</tr>
<tr>
<td>7</td>
<td>Fireshield Section</td>
<td>Fluorescent Penetrant</td>
</tr>
<tr>
<td>8</td>
<td>Fuel Drain Valve</td>
<td>Fluorescent Penetrant</td>
</tr>
<tr>
<td>9</td>
<td>Combustion Chamber Housing</td>
<td>Fluorescent Penetrant</td>
</tr>
<tr>
<td>10</td>
<td>Engine Oil Pump, Fuel Control, and Accessory Gearbox Flanges</td>
<td>Eddy Current</td>
</tr>
<tr>
<td>*11</td>
<td>Engine Mount Adapter</td>
<td>Eddy Current</td>
</tr>
</tbody>
</table>

NOTE

* Indicates mandatory NDI item

WARNING

SOLVENT, CLEANING COMPOUND

SOLVENT, GENERAL PURPOSE

ACETONE, TECHNICAL

ISOPROPYL ALCOHOL

Four fluorescent penetrant procedures are described in TM 1-1520-253-23. All four procedures shall be conducted using fluorescent penetrant, AMS 2644 (Item 129.1, WP 0157 00). Parts requiring fluorescent penetrant inspection shall be cleaned prior to inspection with Cleaning Compound, Solvent (vapor degreasing only) (Item 47.1, WP 0157 00), Cleaning Solvent, General Purpose, DS-108 (Item 72, WP 0157 00), Cleaning Compound, Solvent (Item 99.1, WP 0157 00), Cleaning Compound, Solvent (Item 136.1, WP 0157 00). Item 72, item 99.1, item 136.1 must be followed by Acetone, Technical (Item 20, WP 0157 00) or Alcohol, Isopropyl, Technical (Item 42, WP 0157 00) rinse or wipe; drying until there is no visible solvent residue left on the parts.
Figure 7. Engine Group NDI Areas
Figure 8. Connecting Link

Figure 9. Forward Engine Mount Structure
NONDESTRUCTIVE INSPECTION REQUIREMENTS - continued

Figure 10. Engine Mount Caps

Figure 11. Aft Engine Mount Link
Figure 12. Aft Engine Mount Adapter

Figure 13. Engine Mount Adapter

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Alignment Fixture, PN 114G1168-2
Aircraft Jacks
Chalked Line
Dial Indicator, 5210-00-203-9354 – 2 ea
Dial Indicator Holder, PN TD1007-301 – 2 ea
Dividers or Compass
Feeler Gage
Hand Held Mirror
Level
Linear Graph Paper
Plumb Bob
Straightedge – local manufacture
Tape Measure

Material/Parts:
Tape, Masking, (Item 175, WP 0157 00)

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 1-1500-344-23
MWO 1-1520-240-50-60
WP 0157 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

After extensive structural repairs, a hard landing, or when misalignment is suspected, the body group, main rotor group, and alighting gear group should be given an alignment check. These checks should be accomplished in calm air (indoors if practical) on a hard, smooth, and level surface. Do not perform checks in direct sunlight as this can cause expansion of structure and result in erroneous measurements. Do not disturb or move the helicopter after it is jacked and leveled.

Crash-damaged aircraft undergoing extensive airframe repair may require placement in the CH-47 airframe fixture. The airframe fixture is made up of four components as listed below. These fixtures correspond to the four major portions of the aircraft secondary structure. Refer to Figure 1. After repair and assembly of the four airframe groups, it would be advisable to perform an alignment check as described in this work package.

Aft Pylon Fixture – Drawing Number LJ114S0400-1
Cockpit Section Fixture – Drawing Number MIT144S0100-1
Aft Fuselage Fixture – Drawing Number 2MIT114S0300-1
Center Cabin Fixture – Drawing Number MIT114S0200-1
BODY GROUP ALIGNMENT CHECK

Check alignment of body group as follows:

1. Raise helicopter by jacking. Refer to TM 55-1520-240-23 for jacking procedures.

2. Place a level, aligned approximately with longitudinal centerline of the helicopter, on top of cabin floor. Adjust jacks until a level reading is obtained.

NOTE

Make sure level is laying squarely on a flat portion of cabin floor and is not tilted or cocked.

3. Rotate level 90 degrees to helicopter centerline (parallel to stations) and adjust jacks until a level reading is obtained.
BODY GROUP ALIGNMENT CHECK – continued

4. Repeat steps 2 and 3 until a level reading in each position can be maintained without further adjustment of jacks. The helicopter should now be level longitudinally and laterally.

5. Fabricate straightedge. Refer to Figure 3.

6. Place straightedge laterally on beams, immediately below cabin windows, between sta 400 and sta 440 on each side. The lower surface of straightedge, when placed in this position, is WL 0.

7. Suspend a plumb bob from center of straightedge so that plumb bob clears cabin floor. Allow plumb bob to become motionless.

8. Place a piece of masking tape on cabin floor directly below plumb bob.

9. Allow plumb bob to drop. Mark resultant impression on masking tape. Use a lead pencil.

10. Place straightedge laterally on beams, immediately below cabin windows, between sta 160 and sta 180 on each side.

11. Repeat steps 7, 8, and 9 above.

12. Stretch a chalked line longitudinally to intersect marked points on cabin floor. Snap line to establish a centerline on cabin floor.

**NOTE**

If required, the straightedge can be placed at intermediate positions throughout cabin section to establish more than one centerline reference point.

13. Check body group for alignment. Use a tape measure and compare distances between various related structures and established reference lines in accordance with the following criteria.

   a. Use cabin floor as WL minus 30 and chalk line (centerline) as BL 0.

   b. All vertical measurements are in reference to WL 0. Those measurements above are positive and those below are negative.

   c. Add or subtract 30 inches, as applicable, when using cabin floor as a reference point.

   d. Butt lines are measured to the right or left of chalk line.

   e. Stations are marked below WL 0 on the aft side of each frame in the cabin section for reference.

   f. Refer to Figure 2 for fuselage station, butt line, and water line locations.
NOTE

All dimensions are in inches.

Figure 2. Body Group Alignment – Fuselage Stations, Waterlines, and Butt Lines
NOTES

A. All dimensions are in inches.
B. Make straightedge from a material that will resist wear and not warp, bow, or otherwise deflect. Thickness of straightedge is optional.

Figure 3. Body Group Alignment – Straightedge Plans
MAIN ROTOR GROUP ALIGNMENT CHECK

Subsequent paragraphs describe method of checking alignment of drive components of main rotor group, using drive system alignment checking fixture 114G1168-2. Refer to Figure 4. The checking fixture consists of one optical tooling telescope assembly, one optical square, one scope bracket assembly, four optical target assemblies, one target mount assembly, five target bracket assemblies, two alignment shaft (dummy shaft) assemblies (not used for this alignment procedure), one installation hoist assembly, and a storage cart. The checking fixture determines acceptability of alignment points for forward, aft, and combining transmissions, forward and aft synchronizing drive shaft assemblies, aft rotary-wing drive shaft assembly, and engine drive shaft assemblies. Only the engine drive shaft assemblies require a mechanical alignment check. All other checks are accomplished using optical tooling methods.

The following conditions must be maintained to ensure accurate results:

1. The manufacturing splices at sta 160 and sta 439, and the field splice at WL plus 72 must be completed, before the “Body Group Alignment Check” can be accomplished.

2. All drive group attachment point mounting bushings must be properly installed. Make sure drive group attachment point bushings are not damaged.

3. During optical alignment checking procedure, the forward, aft, and combining transmissions, all drive shafts, and all drive shaft couplings must be removed.

4. During engine to combining transmission alignment checks, complete structural installation of engines, engine transmissions, and combining transmission is required. The engine nose covers and engine drive shaft fairings should not be installed.

5. The helicopter shall be placed on jacks. Refer to TM 55-1520-240-23. Leveling of helicopter is not required for main rotor group alignment check.

6. Personnel performing optical and mechanical alignment checks must be qualified in use and operation of the alignment equipment.

7. Two operators may perform the entire drive system alignment check after drive system alignment checking fixture has been properly installed and checked. One operator is required to adjust and read the telescope. The other operator is required to install and adjust the optical target assembly, and assist in the mechanical alignment procedure. Personnel other than operators should keep clear of helicopter while alignment checks are being made.

8. Movements of operators on helicopter structure and other sources of vibration should be kept to a minimum during alignment checks.

9. Lighting equipment or other heat sources must not be placed near optical tooling components or optical lines of sight. Local heat sources cause heat waves in the optical lines of sight, which may result in optical distortion and erroneous readings.
INSTALLATION OF DRIVE SYSTEM ALIGNMENT CHECKING FIXTURE

Install checking fixture 114G1168-2, Figure 5, as follows:

1. Check all drive component attachment point areas for foreign objects before attempting to install checking fixture. All mating surfaces must be clean. Check all mounting points to be sure bushings are installed.

2. Install hoist assembly, 114G5006-1, on aft pylon canted deck. Dowels on hoist baseplate fit into attachment point bushings for aft rotary-wing drive shaft lift bearing housing.

3. Place scope bracket assembly, 114G5001-1, on a protective pad on floor of cargo loading ramp, directly beneath hoist assembly. If cargo loading ramp is not installed, place storage chart, containing stowed scope bracket assembly, directly beneath hoist.

4. Attach hoist sling to eye bolts on scope bracket assembly. Raise assembly into position.
NOTE

Any shims that are used to fill gaps under the alignment tools must be permanently affixed to the structure after the alignment procedure is completed. Refer to “Adding Permanent Shims to Structure” in this WP.

5. Insert bolts, 114G5001-2, into bushings on scope bracket assembly and through aft transmission attachment point bushings. Install nuts, AN315-16R, on bolts. Hand tighten nuts. Check for proper seating of assembly by attempting to slide a feeler gage between bushings. Install shims, as required, if any gap is greater than 0.005-inch. Record thickness and location of all shims. Torque nuts to 50 pound-feet.

6. Remove hoist assembly and install aft target bracket assembly, 114G5003-1. Pins on aft target bracket assembly fit into attachment point bushings for aft rotary-wing drive shaft lift bearing housing. Check for gaps at each bushing. Install shims, as required, if any gap is greater than 0.005-inch. Record thickness and location of all shims.

7. Carefully position forward transmission target bracket assembly, 114G5002-3, on forward transmission attachment point bushings. Check for gaps by attempting to rock target bracket assembly. Install shims at this time, as required, to eliminate rocking if any gap is less than 0.020-inch. If any gap is greater than 0.020-inch, install shims during optical alignment checking procedure. Refer to “Optical Alignment Checking Procedure”. Record thickness and location of all shims and size and location of any retaining gaps. Lock bracket assembly in place by gently pressing retaining pins, 114G5002-29, into forward transmission attachment point bushings.

8. Install hanger target bracket assembly, 114G5002-2, in synchronizing drive shaft support brackets (shaft hanger) at sta 163. Secure hanger target bracket assembly with two bolts, AN175C40, two washers, AN960C-5161, two lock washers, MS35337-83, and two nuts, AN315C5. This installation will be replaced during optical alignment procedure at all drive shaft support brackets.

9. Place combining transmission target mount assembly, 114G5004-1, on combining transmission attachment point bushings. Secure target mount assembly with four bolts, 114G5004-7, four washers AN960-616, and four nuts, AN315-6R. Follow shimming procedures outlined above for forward transmission target bracket assembly.

ALIGNMENT TOLERANCES

Alignment tolerances for adjacent drive components are as follows:

1. A maximum angular misalignment of 15 minutes (1/4 degree) is permitted at: (a) all synchronizing drive shaft couplings, (b) the spline connection between aft transmission and aft rotary-wing drive shaft.

2. A maximum angular misalignment of 3.5 minutes is permitted between the lift bearing housing and the aft rotary-wing drive shaft.

3. The coupling angles between the engine drive shafts, engine transmissions, and combining transmission will vary when the drive system is in operation, but must not exceed 30 minutes (1/2 degree). No misalignment is intentionally built into the drive system except at the engine drive shafts.

4. Conversion of basic angular tolerances to more usable data is given in subsequent paragraphs.
OPTICAL ALIGNMENT CHECKING PROCEDURE

This procedure establishes a theoretical centerline, or line of sight (LOS), and determines vertical and horizontal displacement of specific coupling points, or target points, from the LOS. Refer to Figure 6. The displacement measurements are recorded on a data sheet, converted to radial displacement measurements using a radial displacement graph, and compared to a list of given values, as depicted in Figure 7. If the radial displacement for a particular location exceeds given values, the final alignment acceptability can be determined using graphical methods. Specific methods of establishing a LOS and determining target displacements are as follow:

1. Prepare an optical data sheet, Figure 7.
2. Insert an optical target assembly, 114G5005-1, in the forward position of forward target bracket assembly at sta 93.
3. Set telescope micrometer adjustments at 0. Focus telescope, and align telescope crosshairs on optical target assembly. Use only tangent screws on alignment bracket. Lock telescope in place and recheck for a 0 reading. This will establish a basic LOS. Do not disturb telescope, or remove optical target assembly, after LOS is established.
4. Install another optical target assembly, 114G5005-1, in the rear position of forward target bracket assembly, at sta 107.37. Refocus telescope, and find displacement of target from LOS. Use micrometer adjustments to shift optical flats within telescope, until crosshairs are centered on target. Read micrometer scales. Record vertical and horizontal displacement readings on optical data sheet.

NOTE
If any gaps greater than 0.020-inch exist between forward target bracket assembly and forward transmission attachment point bushings, shim as required at those points which will give smallest target reading for sta 107, and repeat steps 2, 3, and 4.
5. Remove optical target assembly from rear position of forward target bracket assembly, and reinstall it in hanger target bracket assembly at sta 163. Refocus telescope. Use micrometer adjustments to find displacement of target from LOS. Record readings on optical data sheet.
6. Remove target and hanger target bracket assembly and install them at sta 213. Find new displacement from LOS. Record readings on optical data sheet. Progressively install target and hanger target bracket assembly on each synchronizing drive shaft support. Determine displacement of target from LOS. Record readings on optical data sheet.

NOTE
Refocus telescope on target in forward position of forward target bracket assembly, sta 93, as required, to confirm validity of LOS.

7. Install an optical target assembly in spherical adapters of combining transmission target mount assembly at sta 451 and 477. Determine displacement of target from LOS. Record readings on optical data sheet.
8. Install an optical target assembly in forward target position of scope bracket assembly at sta 536. Determine displacement of target from LOS. Record readings on optical data sheet.
9. Prepare a radial displacement graph on linear graph paper. Plot location of each target. Use target readings from optical data sheet to construct plot, Figure 8. Identify each target location with its target or position number. Use a compass or dividers to find radial displacement of each target from LOS (intersection of axes). An alternate method of determining the radial displacement would be to compute the square root of the vertical reading (V) squared plus the horizontal reading (H) squared, i.e. \( (V^2 + H^2)^{1/2} \). Record radial displacement of each target on optical data sheet. Compare these values with values in column marked maximum displacement without additional check. Any coupling whose radial displacement exceeds given
OPTICAL ALIGNMENT CHECKING PROCEDURE - continued

values must be further investigated to determine its acceptability. Refer to “Evaluation of Synchronizing Drive Shaft Alignment Data”.

10. Remove cover from upper aperture of optical square. Close forward aperture door. Install an optical target assembly in upper position of scope bracket assembly.

11. Set telescope micrometer adjustments to 0. Align telescope crosshairs on target. Use only tangent screws. The target must be zeroed within 0.001-inch. Lock telescope and recheck target reading. This establishes a LOS for aft rotary-wing drive shaft alignment check. Do not disturb telescope after LOS is established.


13. Transfer target assembly to upper position of aft bracket assembly. Find displacement of target from LOS. Record readings on optical data sheet.

14. Use graphical computations, based on recorded target readings, to determine acceptability of aft rotary-wing shaft alignment. Refer to Evaluation of Aft Rotary-Wing Drive Shaft Alignment Data.

NOTES

A. All dimensions are in inches.
B. Optical target station locations represent approximate centerlines of installed optical target assembly, 114G5005-1.
C. Displacement values from alignment position 2A (sta 113) must be calculated from displacement readings for Target 2. Refer to Optical Data Sheet – Main Rotor Group Alignment Check, Figure 7.

Figure 6. Optical Check Points – Main Rotor Group Alignment Check
OPTICAL ALIGNMENT CHECKING PROCEDURE - continued

<table>
<thead>
<tr>
<th>TARGET OR POSITION NUMBER</th>
<th>STATION LOCATION</th>
<th>VERTICAL READING &quot;HIGH&quot; OR &quot;LOW&quot;</th>
<th>HORIZONTAL READING &quot;LEFT&quot; OR &quot;RIGHT&quot;</th>
<th>RADIAL DISPLACEMENT FROM LOS</th>
<th>MAX DISPLACEMENT WITHOUT ADDITIONAL CHECK</th>
<th>ACTUAL DISTANCE POINT E TO COUPLING</th>
<th>MAXIMUM DISTANCE POINT E TO COUPLING</th>
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<tbody>
<tr>
<td>1</td>
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<td>0</td>
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<td>555</td>
<td>0</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES

A. All dimensions are in inches.
B. Target or position numbers correspond to those shown on Figure 6.
C. Station locations represent approximate centerline of optical target assembly.
D. Compute vertical and horizontal readings from position 2A (sta 113) by multiplying the vertical and horizontal readings for Target 2 (sta 107) as follows:

\[
\text{Target 2 vertical} \times 1.30 = \text{Target 2A vertical} \\
\text{Target 2 horizontal} \times 1.30 = \text{Target 2A horizontal}
\]

E. Vertical readings for Targets 14 and 15 should be marked "forward" or "aft".

Figure 7. Optical Data Sheet – Main Rotor Group Alignment Check
OPTICAL ALIGNMENT CHECKING PROCEDURE - continued

RADIAL DISPLACEMENT OF SYNCHRONIZING DRIVE SHAFT TARGETS

NOTES
A. Prepare graph to the largest practical scale and use the best available materials to ensure accuracy.
B. Prepare several graphs if targets are grouped in one area.

Figure 8. Radial Displacement Graph – Main Rotor Group Alignment Check

ENGINE TO COMBINING TRANSMISSION ALIGNMENT

Aircraft with 145D3504 one piece cross shafts and aft adjustable engine support mounts installed do not require engine to combining transmission alignment as described below unless extensive repairs are made in the vicinity of the engine installation or proper alignment is suspect. The link is adjusted to set engine cross shaft alignment at the time of incorporation of MWO 1-1520-240-50-60. The adjustment fixtures are unique and are not interchangeable. This preserves the proper link length measurement for each engine should the link need to be replaced or adjusted. During engine installation, insure that the correct adjustable link is installed. Each adjustable link center body is vibroetched with helicopter tail number, link's length in inches to three decimal places, and engine number. Link length can be checked using the engine aft link adjustment fixture on each side of the aircraft. Link data should also be checked with aircraft records. During overhaul it is recommended that...
ENGINE TO COMBINING TRANSMISSION ALIGNMENT - continued

the alignment be verified using dial indicator procedures below. If alignment cannot be verified, or is found to be outside of limits, a complete alignment must be performed.

Summary

This complete alignment procedure is for aircraft with 145D3504 one piece cross shafts and aft adjustable engine support mounts installed. The mounts are first adjusted to nominal to bring shaft alignment into desired range. Alignment is then checked, using the dial indicator method, at both the engine and combining transmission coupling ends; one side of the aircraft at a time. If the alignment is unsatisfactory the link will be adjusted up or down, using Figure 10, Sheet 2 of 2 as a guide to the correct amount of link center body turns. The dial indicator will be closely observed during the adjustment to ensure proper alignment limits are achieved. Refer to Figure 10, Sheet 1 of 2. When the desired alignment is accomplished, tighten, torque, and lockwire the link jam nuts.

Support Link Adjustment Procedures

NOTE
Micrometer 436R17 is the preferred measuring tool for setting nominal length of the links. However, vernier caliper GGG-C-111 is an acceptable alternate.

1. Adjust links to the following nominal lengths. Measurement is made between the flats on each rod end.
   - Left Engine (No. 1)  6.360-inches, plus or minus 0.010-inch
   - Right Engine (No. 2) 6.430-inches, plus or minus 0.010-inch

2. Begin adjustment by loosening the two jam nuts on the support. Turn them to the right until they bottom out against the rod ends. With the link installed and the “UP” arrow pointing up, adjust the link by turning the center body to the left to lengthen or to the right to shorten.

   CAUTION
If a 0.063-inch drill (No. 50) enters the turn buckle cavity when inserted in the inspection hole, the maximum allowable link length will have been exceeded. Do not adjust past this point.

3. When the correct length is achieved, tighten jam nuts by turning them toward the left, insuring the center body does not turn, and that the keys on the lock washers are aligned with the slots in the center body.

Cross Shaft Alignment

NOTE
Starett dial indicator, PN 196B1, NSN 5210-00-203-9354, is the preferred measuring device. This indicator must be modified for one piece cross shaft alignment. Refer to Figure 1, MWO 1-1520-240-50-60 for indicator modification instructions and procedures for manufacture of dial indicator holder, TD 1007-301. Use screw NAS 603-8 or equivalent for retention screw.

Perform the following cross shaft alignment to one side of the aircraft at a time, starting with the right hand side (No.2 engine).

1. Install the dial indicator holder under the plate pack coupling nut of the bolt attached to the engine transmission steel adapter. Refer to Figure 9, Sheet 1 and Sheet 2.
Figure 9. Engine to Combining Transmission Alignment (Sheet 1 of 3)
RECORD READINGS FROM THE DIAL INDICATOR AS SHOWN ABOVE

Figure 9. Engine to Combining Transmission Alignment (Sheet 2 of 3)
WARNING

The adapter, plate pack, and three bolts form part of a balanced assembly and only one bolt and nut may be loosened at one time. If more than one bolt is loosened at a time, the adapter assembly must be replaced.

2. Install the dial indicator in the holder as shown in Figure 9, Sheet 2, and tighten the screw in the holder. Check the holder from the side and top to see that the dial indicator is not angled. The indicator plunger should be parallel to the plate pack face and pointing at the theoretical center of the shaft. Check the
remaining indicator travel by lifting the dial indicator plunger with your fingernail. It should read 0.070 to 0.120-inch (0.100-inch is one complete revolution of the dial indicator hand).

3. Slowly rotate the cross shaft observing whether the dial indicator clears the surrounding hoses and clamps. It is important that the dial indicator or holder not contact surrounding components as erroneous readings may result. Push interfering hoses and hose clamps out of the way to assure clearance.

4. Rotate cross shaft until the dial indicator is positioned at the 12 o’clock (top) position. Set zero on the dial indicator with the shaft in this position.

5. Rotate shaft ¼ revolution to the 3 o’clock position and read the indicator using the convention shown in Figure 9, Sheet 2. Record the shaft position and dial indicator reading on a copy of data sheet depicted by Figure 10, Sheet 1.

NOTE

The engine transmission adapter clock positions are identified by looking outboard. A hand held mirror may be required to view the dial indicator at some shaft positions.

6. Perform step 5 above at 6, 9 and 12 o’clock shaft rotation positions. Record readings. The 12 o’clock reading should repeat zero setting within 0.001-inch. If it is not zero, repeat steps 4, 5, and 6.

7. Without removing the engine transmission dial indicator setup, install another dial indicator holder under the plate pack coupling nut of the bolt attached to the combiner transmission steel adapter. Refer to Figure 9, Sheet 1 and Sheet 3.

WARNING

The adapter, plate pack, and three bolts form part of a balanced assembly and only one bolt and nut may be loosened at one time. If more than one bolt is loosened at a time, the adapter assembly must be replaced.

8. Install another dial indicator in this holder and tighten the screw in the holder. Refer to Figure 9, Sheet 3. Check the holder, dial indicator position, and plunger travel per step 2.

9. Take readings at the combiner end of the shaft per step 3 thru step 6.

NOTE

The combiner transmission adapter clock positions are identified by looking inboard. An inspection mirror is required to view dial indicator at certain shaft positions.

10. Check readings against the minimum and maximum values allowed in Figure 10, Sheet 2. If readings are satisfactory proceed to step 11. If any measurements deviate outside the values allowed in Figure 10, Sheet 2, correct them by adjusting the length of the support. Refer to support link adjustment procedures above. Refer to Figure 10, Sheet 3, as a guide to the proper amount of center body turns needed to achieve a desired link length that will correct the misalignment on both the engine and combiner shaft ends. Recheck cross shaft alignment per steps 4, 5 and 6 and repeat procedures until measurements are within allowable limits. If the range of link lengths is not sufficient to bring cross shaft alignment into tolerance, contact AMCOM Engineering.

11. Remove support mount from the aircraft. Measure link from end to end between the jam nut flats to three decimal places and record dimensions on the helicopter DA Form 2408-15. Vibroetch link centerbody, and torque, torque stripe, and lockwire jam nuts. Refer to TM 55-1520-240-23.
ENGINE TO COMBINING TRANSMISSION ALIGNMENT – continued

12. The adjustment link should now be used to relocate one of the P-51001 fittings. Refer to MWO 1-1520-240-50-60. In the future, if a replacement link is required, these fittings will be used to determine its correct length for proper cross shaft alignment.

13. Reinstall adjustable link on aircraft and recheck cross shaft alignment per steps 4, 5, and 6 to insure the length of the link has not changed.

14. Remove, one at a time, the dial indicators and holders and install the plate pack nuts, both sides of the aircraft. Refer to MWO 1-1520-240-50-60.
ENGINE TO COMBINING TRANSMISSION ALIGNMENT – continued

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>CLOCK POSITION</th>
<th>PERMISSIBLE READINGS (Inches)</th>
<th>RECORD READING (GIVE + OR -)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-A</td>
<td>12 SET INDICATOR TO ZERO</td>
<td>MINIMUM : .006</td>
<td>MAXIMUM : +.008</td>
</tr>
<tr>
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<td>3 (REF)</td>
<td>-.006</td>
<td>+.008</td>
</tr>
<tr>
<td>ENGINE</td>
<td>6</td>
<td>-.004</td>
<td>+.010</td>
</tr>
<tr>
<td>9 (REF)</td>
<td>-.006</td>
<td>+.008</td>
<td></td>
</tr>
<tr>
<td>B-B</td>
<td>12 SET INDICATOR TO ZERO</td>
<td>MINIMUM : +.005</td>
<td>MAXIMUM : -.010</td>
</tr>
<tr>
<td>RIGHT HAND</td>
<td>3 (REF)</td>
<td>+.005</td>
<td>-.010</td>
</tr>
<tr>
<td>COMBINER</td>
<td>6</td>
<td>-.002</td>
<td>-.010</td>
</tr>
<tr>
<td>9 (REF)</td>
<td>+.005</td>
<td>-.010</td>
<td></td>
</tr>
<tr>
<td>C-C</td>
<td>12 SET INDICATOR TO ZERO</td>
<td>MINIMUM : -.005</td>
<td>MAXIMUM : +.010</td>
</tr>
<tr>
<td>LEFT HAND</td>
<td>3 (REF)</td>
<td>-.005</td>
<td>+.010</td>
</tr>
<tr>
<td>COMBINER</td>
<td>6</td>
<td>+.001</td>
<td>+.010</td>
</tr>
<tr>
<td>9 (REF)</td>
<td>-.005</td>
<td>+.010</td>
<td></td>
</tr>
<tr>
<td>D-D</td>
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<td>MINIMUM : -.008</td>
<td>MAXIMUM : +.006</td>
</tr>
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<td>+.006</td>
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<td>+.007</td>
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<tr>
<td>9 (REF)</td>
<td>-.008</td>
<td>+.006</td>
<td></td>
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</table>

NOTES

A. All dimensions are in inches.
B. The 3 and 9 o’clock values beyond limits are not cause for rejection but must be reported to AMCOM Engineering.

Figure 10. Engine to Combining Transmission Alignment – Dial Indicator Readings (Sheet 1 of 2)
ENGINE TO COMBINING TRANSMISSION ALIGNMENT – continued

<table>
<thead>
<tr>
<th>LINK ADJUSTMENT (Shorten/Lengthen)</th>
<th>REVOLUTIONS OF CENTER BODY (Turns)</th>
<th>CHANGE IN LENGTH OF LINK (Inches)</th>
<th>APPROXIMATE CHANGE IN DIAL INDICATOR READING (Inches)</th>
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</thead>
<tbody>
<tr>
<td>SHORTEN</td>
<td>2 Turns</td>
<td>-.22</td>
<td>+.019</td>
</tr>
<tr>
<td></td>
<td>1-1/2 Turns</td>
<td>-.17</td>
<td>+.014</td>
</tr>
<tr>
<td></td>
<td>1 Turn</td>
<td>-.11</td>
<td>+.009</td>
</tr>
<tr>
<td></td>
<td>¾ Turn</td>
<td>-.08</td>
<td>+.007</td>
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<td></td>
<td>½ Turn</td>
<td>-.06</td>
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</tr>
<tr>
<td></td>
<td>¼ Turn</td>
<td>-.03</td>
<td>+.002</td>
</tr>
<tr>
<td>LENGTHEN</td>
<td>¼ Turn</td>
<td>+.03</td>
<td>-.002</td>
</tr>
<tr>
<td></td>
<td>½ Turn</td>
<td>+.06</td>
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<td>1 Turn</td>
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<td>-.009</td>
</tr>
<tr>
<td></td>
<td>1-1/2 Turns</td>
<td>+.17</td>
<td>-.014</td>
</tr>
<tr>
<td></td>
<td>2 Turns</td>
<td>+.22</td>
<td>-.019</td>
</tr>
</tbody>
</table>

NOTE
All dimensions are in inches.

Figure 10. Engine to Combining Transmission Alignment – Link Adjustment (Sheet 2 of 2)

EVALUATION OF SYNCHRONIZING DRIVE SHAFT ALIGNMENT DATA

Procedures for determining acceptability of alignment of synchronizing drive shaft couplings and related couplings, which have target displacements in excess of the values in the column marked maximum displacement without additional check, are as follow (Refer to Figure 7):

1. Prepare an evaluation chart for each coupling in question. Carefully plot target location using vertical and horizontal displacement readings from mechanical data sheet. Identify target point with its target number. Prepare evaluation chart on linear graph paper. Refer to Figure 11.

2. Plot on the same evaluation chart the location of coupling just forward (having next smaller target number) of the one being evaluated. Identify this point with its target number.

3. Connect the two target points with a straight line. Extend line beyond target point having largest target number.
ENGINE TO COMBINING TRANSMISSION ALIGNMENT – continued

4. Using a compass or dividers, transfer distance between two target points to horizontal scale (projected distance between target points) of synchronizing drive shaft proportion chart. Refer to Figure 12. Plot projected distance on horizontal scale.

5. Find vertical distance on proportion chart (extension length) from point plotted in step 4 to diagonal line having same target number as target location in question.

6. Make extension of line connecting targets (step 3) equal in length to vertical distance (step 5) found on synchronizing drive shaft proportional chart. Identify end of lines as point E.

7. Plot on a graph the location of coupling just aft (having next larger target number) of one being investigated. Identify this point with its coupling number.

8. Measure straight-line distance between point E and coupling point plotted in step 7. Record this distance on data sheet, Figure 7, in column actual distance, point E to coupling.

9. Compare distance with value found on data sheet in column maximum distance, point E to coupling. If actual distance exceeds maximum distance, structure must be reworked.

NOTES

A. Prepare chart to the largest practical scale, using the best available materials, to ensure accuracy.

B. This chart illustrates an evaluation of Target Position 7. The distance from point E to Target Point 8 is the “Actual Distance Point E to Coupling” to be entered on the data sheet.

Figure 11. Evaluation Chart – Synchronizing Drive Shaft Alignment Check
NOTE

All dimensions are in inches.

Figure 12. Proportion Chart – Synchronizing Drive Shaft Alignment Check
EVALUATION OF AFT ROTARY-WING DRIVE SHAFT ALIGNMENT DATA

Procedures for determining acceptability of alignment of aft rotary-wing drive shaft attach points are as follow:

NOTE

The maximum permissible angle (15 minutes) at spline connection between aft transmission and aft rotary-wing drive shaft converts to a 0.206-inch radial displacement from theoretical centerline at lower target (lift bearing) position of aircraft target bracket assembly. The 3.5 minutes squareness tolerance, between lift bearing housing and aft rotary wing drive shaft, converts to a 0.045-inch radial displacement from the theoretical centerline at spline position.

1. Prepare three large evaluation charts on linear graph paper. Refer to Figures 13, 14, and 15.
2. Plot left or right reading for Target 15 (upper target position of aft target bracket assembly) on Line X of Evaluation Chart I, Figure 13.
3. Plot left or right reading for Target 14 and Point A (lower target position of aft target bracket assembly) on Line Y of Evaluation Chart I, Figure 13.
4. Connect points plotted in steps 2 and 3 with a straight line. Extend line through Line Z.
5. Identify intersection of line drawn in step 4 and Line X as Target 15.
6. Identify intersection of line drawn in step 4 and Line Y as Target 14 and Point A.
7. Identify intersection of line drawn in step 4 and Line Z as Point Tx.
8. Construct a dotted line, which passes through both Point A, and intersection of Line Z and LOS line. Identify line as Centerline Aft Rotary-Wing Drive Shaft.
9. Plot forward or aft reading for Target 15 (upper target position of aft target bracket assembly) on Line X of Evaluation Chart II, Figure 14.
10. Plot forward or aft reading for Target 14 and Point A (lower target position of aft target bracket assembly) on Line Y of Evaluation Chart II, Figure 14.
11. Connect points plotted in steps 9 and 10 with a straight line. Extend line through Line Z.
12. Identify intersection of line drawn in step 11 and Line X, as Target 15.
13. Identify intersection of line drawn in step 11 and Line Y, as Target 14 and Point A.
15. Construct a dotted line, which passes through both Point A, and intersection of line Z and LOS line. Identify line as Centerline Aft Rotary-Wing Drive Shaft.
16. Plot location of Target 15 (upper target position of target bracket assembly) on Evaluation Chart III, Figure 15. Use target readings from Optical Data Sheet.
17. Plot location of Target 14 and Point A (lower target position of aft target bracket assembly) on Evaluation Chart III. Use target readings from Optical Data Sheet.
18. Plot location of a Point T on Evaluation Chart III, Figure 15. Use the values Tx and Ty from Evaluation Charts I (Figure 13) and II (Figure 14) respectively.
19. Point A must lie within the 0.206 inch radius circle on Evaluation Chart III, Figure 15. If Point A does not lie within the 0.206 inch radius circle, the lift bearing assembly attach points must be relocated.
20. Point T must lie within the 0.045 inch radius circle on Evaluation Chart III, Figure 15. If Point T does not lie within 0.045 inch radius circle, the flange thickness of attach point bushings for lift bearing housing must be altered.

**NOTE**

All dimensions are in inches.

Figure 13. Evaluation Chart I – Aft Rotary Wing Drive Shaft Alignment Check
NOTE

All dimensions are in inches.

Figure 14. Evaluation Chart II – Aft Rotary Wing Drive Shaft Alignment Check
EVALUATION OF AFT ROTARY-WING DRIVE SHAFT ALIGNMENT DATA – continued

NOTE
All dimensions are in inches.

Figure 15. Evaluation Chart III – Aft Rotary Wing Drive Shaft Alignment Check

ALIGHTING GEAR GROUP ALIGNMENT CHECK

Check alignment of alighting gear group as follows (Refer to Figure 16 and Table 1):

1. Open rescue hatch.
2. Raise helicopter by jacking (Refer to TM 55-1520-240-23).
3. Remove forward and aft landing gear.
4. Level helicopter longitudinally and laterally.
5. Suspend a plumb bob so that it just clears floor (ground) from any one of landing gear attachment points. Allow plumb bob to become motionless.
6. Place a piece of masking tape on floor directly below plumb bob.
ALIGHTING GEAR GROUP ALIGNMENT CHECK - continued

7. Allow plumb bob to drop. Mark resultant impression on masking tape. Use a lead pencil.

8. Repeat steps 5, 6, and 7, at each landing gear attachment point.

9. Place straightedge laterally (Refer to Figure 3) on beams, each side, between sta’s 320 and 340. The straightedge shall lay directly over rescue hatch opening.

10. Suspend a plumb bob from center of straightedge, through rescue hatch opening. The plumb bob should just clear floor. Allow plumb bob to become motionless.

11. Place a piece of masking tape on floor directly below plumb bob.

12. Allow plumb bob to drop. Mark resultant impression on masking tape. Use a lead pencil.

13. Extend centerline of cabin floor to end of ramp floor and suspend a plumb bob from this point. Allow plumb bob to become motionless. If ramp is not installed, extend centerline of cabin floor to end of cabin floor and suspend a plumb bob from this point.

14. Repeat steps 11 and 12.

15. Stretch a charked line on floor beneath helicopter from a point forward of helicopter to a point aft of helicopter. Make sure charked line intersects points established in steps 10 through 14. Snap charked line. This will establish a line of symmetry.

16. Measure and record distances each side of line of symmetry, to points established in steps 5 thru 8. Compare recorded measurements with attachment point locations shown in Figure 16 and Table 1 to determine acceptability.

Figure 16. Alighting Gear Group Alignment
ALIGHTING GEAR GROUP ALIGNMENT CHECK - continued

Table 1. Alighting Gear Attachment Point Locations

<table>
<thead>
<tr>
<th>Index No.</th>
<th>Attachment Point</th>
<th>Station</th>
<th>WL</th>
<th>BL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Forward Bolt</td>
<td>241.45</td>
<td>minus 40.14</td>
<td>60.375</td>
</tr>
<tr>
<td>2</td>
<td>Upper Bolt</td>
<td>245</td>
<td>minus 28.24</td>
<td>60.375</td>
</tr>
<tr>
<td>3</td>
<td>Aft Bolt</td>
<td>248.5</td>
<td>minus 40.14</td>
<td>60.375</td>
</tr>
<tr>
<td>4</td>
<td>Shock Strut Trunnion</td>
<td>485</td>
<td>minus 3</td>
<td>57.5</td>
</tr>
<tr>
<td>5</td>
<td>Drag Link Trunnion</td>
<td>484</td>
<td>minus 28.875</td>
<td>63</td>
</tr>
<tr>
<td>6</td>
<td>Drag Link Housing of Bearing</td>
<td>484.75</td>
<td>minus 36.5</td>
<td>66.75</td>
</tr>
<tr>
<td>7</td>
<td>Drag Link Housing of Bearing</td>
<td>484.75</td>
<td>minus 36.5</td>
<td>57.5</td>
</tr>
</tbody>
</table>

NOTES
A. All dimensions are in inches.
B. All attachment point dimensions are symmetrical about centerline of helicopter.

ADDING PERMANENT SHIMS TO STRUCTURE

Forward, Aft and Combiner Transmissions

Any shims over 0.010-inch thick that were used to fill gaps under the alignment tools must be permanently affixed to the structure after the alignment procedure is completed. Refer to Figures 17, 18, 19 and 20 for shim dimensions and method of affixing shims to structure.

NOTE
The maximum thickness of shim for the forward and aft transmission is 0.050-inch thick. A minimum bolt protrusion beyond the locknut of 0.08-inch must be maintained.

The combining transmission already uses a shim at each mounting location. Any additional shim thickness must be added to the production shim thickness producing a new thicker shim. Only one shim is permitted at any one location. The minimum bolt protrusion of 0.08-inch must be maintained.
NOTES

A. All dimensions are in inches.
B. All diameters concentric within 0.010-inch diameter.
C. Machine finish to 125 µ-inch RHR.
D. Break edges 0.001 to 0.003-inch radius or chamfer.
E. Tolerance: decimals xx plus or minus 0.02-inch; decimals xxx plus or minus 0.010-inch.
F. Material: Type 301 CRES, condition ¼ or ½ hard sheet or 300 series bar.
G. Passivate per AMS-QQ-P-35.
H. Clean faying surfaces of structure and shim with abrasive pad (Item 4, WP 0157 00), and acetone (Item 20, WP 0157 00).
I. Bond shim to structure with thin coat of adhesive (Item 27, WP 0157 00) before installing structure bushing. Refer to WP 0074 00.

Figure 17. Aft Transmission Structure Shim Detail
ADDING PERMANENT SHIMS TO STRUCTURE - continued

NOTES
A. All dimensions are in inches.
B. All diameters concentric within 0.010-inch diameter.
C. Machine finish to 125 µ-inch RHR.
D. Break edges 0.001 to 0.003-inch radius or chamfer.
E. Tolerance: decimals xx plus or minus 0.02-inch; decimals xxx plus or minus 0.010-inch.
F. Material: Type 301 CRES, condition ¼ or ½ hard sheet or 300 series bar.
G. Passivate per AMS-QQ-P-35.
H. Clean faying surfaces of structure and shim with abrasive pad (Item 4, WP 0157 00), and acetone (Item 20, WP 0157 00).
I. Bond shim to structure with thin coat of adhesive (Item 27, WP 0157 00). Refer to WP 0074 00.

Figure 18. Forward Transmission Structure Shim Detail
ADDING PERMANENT SHIMs TO STRUCTURE - continued

NOTES
A. All dimensions are in inches.
B. All diameters concentric within 0.010-inch diameter.
C. Machine finish to 125 μ-inch RHR.
D. Break edges 0.001 to 0.003-inch radius or chamfer.
E. Tolerance: decimals xx plus or minus 0.02-inch; decimals xxx plus or minus 0.010-inch.
F. Material: Type 301 CRES, condition ¼ or ½ hard sheet or 300 series bar.
G. Passivate per AMS-QQ-P-35.
H. Clean faying surfaces of structure and shim with abrasive pad (Item 4, WP 0157 00), and acetone (Item 20, WP 0157 00).
I. Bond shim to structure with thin coat of adhesive (Item 27, WP 0157 00). Refer to WP 0074 00.

Figure 19. Combining Transmission Structure Shim Detail
ADDING PERMANENT SHIMS TO STRUCTURE - continued

Aft Shaft

The aft shaft is aligned with a selection of bushings with varying flange thicknesses. These bushings should be used to compensate for gaps under the aligning tool, where possible. If this is not possible, then the shim shown in Figure 20 may be used under a bushing flange to compensate for a gap under the alignment tool.
NOTES
A. All dimensions are in inches.
B. All diameters concentric within 0.010-inch diameter.
C. Machine finish to 125 µ-inch RHR.
D. Break edges 0.001 to 0.003-inch radius or chamfer.
E. Tolerance: decimals xx plus or minus 0.02-inch; decimals xxx plus or minus 0.010-inch.
F. Material: Type 301 CRES, condition ¼ or ½ hard sheet or 300 series bar.
G. Passivate per AMS-QQ-P-35.
H. Clean faying surfaces of structure and shim with abrasive pad (Item 4, WP 0157 00), and acetone (Item 20, WP 0157 00).
I. Bond shim to structure with thin coat of adhesive (Item 27, WP 0157 00). Refer to WP 0074 00.

Figure 20. Aft Rotor Shaft Structure Shim Detail

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
STRIPPING AND REAPPLICATION OF COATINGS IN THE CABIN BILGE, STA 95 TO STA 485

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Vacuum, Explosion Proof
Low Pressure Sprayer
Propeller Type Air Driven Mixer
Brush or Roller, Paint

Material/Parts:
Abrasive, Paper (Item 3, WP 0157 00)
Abrasive Pad (Item 4, WP 0157 00)
Abrasive, Paper (Item 10 thru 15, WP 0157 00)
Abrasive, Paper (Item 16, WP 0157 00)
Alcohol, Isopropyl (Item 42, WP 0157 00)
Ammonium Hydroxide (Item 43, WP 0157 00)
Cheesecloth (Item 60 WP 0157 00)
Cleaning Compound (Item 67, WP 0157 00)
Cleaning Compound (Item 69, WP 0157 00)
Cleaning Compound Solvent (Item 70, WP 0157 00)
Cloth, Cleaning (Item 73, WP 0157 00)
Corrosion Resistant Coating Solvent (Item 96, WP 0157 00)
Plastic Sheet (Item 132, WP 0157 00)
Plastic Media (Item 133, WP 0157 00)
Polyurethane Coating (Item 135, WP 0157 00)
Polyurethane Topcoat (Item 136, WP 0157 00)
Primer Coating (Item 138, WP 0157 00)
Primer Coating (Item 139, WP 0157 00)
Primer, Epoxy (Item 142, WP 0157 00)
Rag, Tack (Item 148, WP 0157 00)
Tape, Masking (Item 175, WP 0157 00)
Distilled De-ionized Water (Item 194.1, WP 0157 00)

Personnel Required:
As Required

References:
Boeing Process Document Number D210-13470-1
TM 1-1500-204-23 Series
TM 1-1500-344-23
TM 55-1500-345-23
TM 55-1520-240-23 Series
WP 0076 00
WP 0157 00
WP 0161 00

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers stripping and reapplication of coatings in the cabin bilge (i.e., underfloor), sta 95 to sta 485. This procedure was developed by Boeing as Process Document Number D210-13470-1, "Repainting of the CH-47 Underfloor".

Area to be reworked is all underfloor area of the aircraft. This rework includes all structure from sta 95 to sta 485, including floor formers, belly skins, forward and aft landing gear drag beams (i.e. torque boxes), other beams, longerons, stiffeners, and stringers. This work package does not cover treatment of the ramp, cockpit bilge, or floor panels. Figure 1 shows an overview of the work sequence.
Figure 1. Overview of Bilge Paint Rework

**CAUTION**
If cleaning or rinsing is performed by spray, only low pressure spray equipment shall be used.

**REWORK PROCEDURES**
All operations shall be performed in the following sequence. No operations shall be omitted or combined.

1. Bilge Preparation – Mask-off as necessary to protect adjacent structure from rework operations.
REWORK PROCEDURES - continued

2. Remove Solid Debris – Wipe, sweep, and/or vacuum-out paint chips and other solid residue.

3. Dry Wipe – Remove any liquids with an explosion-proof vacuum cleaner (preferred) or with clean, dry rags.

![WARNING]

**ISOPROPYL ALCOHOL**

**CLEANING COMPOUND**

4. Preclean – Clean using one or more of the following: cleaning compound (Item 69, WP 0157 00), isopropyl alcohol (Item 42, WP 0157 00), and/or detergent per MIL-PRF-680, alcohol, or detergent procedures below. At the completion of this operation, no visible contamination shall remain.

![WARNING]

**EYE INJURY**

**NOTE**

Stains in the paint need not be completely removed.

5. Strip Paint – Remove coatings using plastic media (Item 133, WP 0157 00), and abrasive paper (Item 10 thru Item 15, WP 0157 00). Plastic media strip shall be IAW WP 0076 00.

![CAUTION]

The paint stripping operation shall not distort metal parts or remove cladding.

6. For plastic media blast process parameters, refer to WP 0076 00.

7. After Stripping – Vacuum the entire bilge and surrounding area to remove all plastic media, paint particles, and dust. Pay special attention to interior corners, seams, joints, and holes.

8. Visual Inspection – Visually inspect the stripped bilge to verify coating removal. Re-strip as required.

**NOTE**

Traces of tightly adhering epoxy primer are acceptable.

9. Repairs – Perform structural repair or rework as required.
The aircraft must remain indoors and dry because the bilge area has no corrosion protection at this stage.

10. Remove Solid Debris – Wipe, sweep, and/or vacuum-out the entire bilge.

11. MIL-PRF-680 Clean – Thoroughly clean the bilge with cleaning compound (Item 69, WP 0157 00) degreasing solvent. Apply the solvent manually with clean rags, or by low pressure spray. Make certain that seams, joints, crevices, and around fasteners are cleaned especially well. Remove excess cleaning compound with an explosion-proof vacuum cleaner (preferred) or clean, dry rags.

12. Alcohol Clean – Thoroughly clean the bilge with isopropyl alcohol (Item 42, WP 0157 00). Apply the alcohol manually with clean rags or by low pressure spray. Make certain that seams, joints, crevices, and around fasteners are cleaned especially well. Remove excess alcohol with an explosion-proof vacuum cleaner (preferred) or with clean, dry rags.

13. Detergent Clean – Thoroughly clean the bilge with cleaning compound (Item 67, WP 0157 00). Mix the cleaner solution one part cleaner to four parts distilled de-ionized water (Item 194.1, WP 0157 00). Apply cleaner manually with clean rags, sponges, mobs or scrub brushes. Make certain that seams, joints, crevices, and around fasteners are cleaned especially well.
REWORK PROCEDURES - continued

CAUTION

Do not allow the cleaner to dry on the rework surface.

14. Water Rinse – Rinse the cleaner manually with moist, clean rags, mobs, or sponges, or by low pressure spray. Use distilled de-ionized water (Item 194.1, WP 0157 00) to remove all the cleaner. This will require at least three separate manual wipes, or thoroughly flood cleaned surfaces with low-pressure spray. Make certain that seams, joints, crevices, and around fasteners are rinsed especially well.

WARNING

ISOPROPYL ALCOHOL

15. Alcohol Rinse – Rinse with isopropyl alcohol (Item 42, WP 0157 00). Apply the alcohol manually with clean rags or by low pressure spray. Make certain that seams, joints, crevices, and around fasteners are rinsed especially well. Remove excess alcohol with an explosion-proof vacuum cleaner (preferred) or with clean, dry rags.

WARNING

ISOPROPYL ALCOHOL

16. Inspect – Evaluate bilge cleanliness by looking for solids (e.g., plastic media, drill chips, dust), and by wiping randomly chosen spots with a clean, white rag moistened with isopropyl alcohol (Item 42, WP 0157 00) to detect contamination (e.g., hydraulic fluid, oil, grease). Discoloration on the rag, except a medium gray color is evidence of contamination. If no solids or contamination are found, proceed with "Conversion Coat". If solids are found, re-clean per "Alcohol Rinse" procedures, then re-inspect per this procedure. If contamination is found, reclean beginning with "MIL-PRF-680 Clean" procedures and repeat the entire process. Then re-inspect per this paragraph.
REWORK PROCEDURES - continued

**WARNING**
CORROSION RESISTANT COATING

**EYE INJURY**

17. Conversion Coat – Application of Corrosion Resistant Coating, (Item 96, WP 0157 00) to the bilge area increases corrosion resistance, acts as a paint base, and provides an electrically conductive finish. Apply conversion coating and rinse as follows:

a. Alodine 600 Makeup – Add 3 ounces of Alodine 600 powder to water for each gallon of final solution. Stir well until the powder is dissolved. Then add up to 2 percent by volume of Ammonium Hydroxide (Item 43, WP 0157 00) as required to adjust the pH to between 1.5 and 2.0. Disregard any small amount of settled-out insoluble material. Allow mixed solution to stand 1 hour before use.

b. Swab – apply Alodine 600 with clean wipers, cheesecloth gauze, new laundered rags, cellulose sponge, cotton mob, or spray the chemical conversion treatment solution onto the bilge components. Keep the surfaces wet, until a perceptible color develops. Color should develop in 2 to 3 minutes. If a powdery coating develops, lightly sand the area with abrasive paper (Item’s 3, or 16, WP 0157 00) or abrasive pad (Item 4, WP 0157 00) or equivalent, rinse and reapply the chemical conversion treatment solution. If color does not develop or if the chemical conversion coating beads up, lightly sand the area, rinse and reapply the chemical conversion coating.

c. Rinse thoroughly by flushing or if there is a possibility of entrapping water, rinse by gently swabbing with clean wipers, or sponge soaked with water. Use care to prevent damage of the freshly coated film, which is easily damaged.

d. Air dry at room temperature to 130 degrees F, maximum.

**WARNING**

**ISOPROPYL ALCOHOL**

18. Alcohol Rinse – Rinse with isopropyl alcohol (Item 42, WP 0157 00). Apply the alcohol by low pressure spray only. Make certain that seams, joints, crevices, and around fasteners are rinsed especially well. Remove excess alcohol with an explosion-proof vacuum cleaner (preferred) or with clean, dry rags.

19. Tack Rag – Use tack rag (Item 148, WP 0157 00) to remove loose dust and lint.
REWORK PROCEDURES - continued

20. Apply Coatings - General

a. Mixing

(1) Coatings components supplied by different manufacturers shall not be mixed.
(2) Coatings containing foreign matter lumps, or skins, or showing any signs of gelation shall not be used.
(3) Allow components to come to room temperature before mixing.
(4) For two-part coatings, mix full kits (preferred) or mix base and catalyst in the ratio specified by the manufacturer.
(5) After mixing and thinning, strain through a 150 mesh paint strainer or several layers of clean cheesecloth or gauze.

b. Application

(1) Coatings shall be applied in the following sequence; epoxy preprimer first, then flexible primer, topcoat, and markings.
(2) Epoxy preprimer, flexible primer, and topcoat shall be applied to all bilge surfaces. Coatings shall be applied by spray. In difficult to reach areas, brush or roller may also be used. Spray application techniques shall conform to MIL-F-18264.
(3) Coatings that have exceeded the pot life shall be discarded. The limitation on film thickness is not mandatory for surfaces on which such limits are impractical to maintain; for example, highly contoured areas. However film thickness should be controlled in these areas to prevent excessive deposition of paint.

b. Workmanship – Coatings shall be smooth, continuous, adherent films free of such surface imperfections as runs, sags, blisters, orange peel, blushing, dry overspray streaks, craters, blotches, brush marks, fish eyes, seediness, or pinholes.

WARNING

CLEANING COMPOUND, SOLVENT

EPOXY PRIMER

d. Epoxy Preprimer – Mix, thin, and apply epoxy primer (Item 142, WP 0157 00) as follows:

(1) Mix and Thin

(a) Stir base thoroughly just prior to mixing. Ensure that all solids have been dislodged from the bottom of the container.
(b) Agitate catalyst, then add slowly to base with constant stirring. Once base and catalyst are completely mixed, add an equal volume of cleaning compound, solvent (thinner) (Item 70, WP 0157 00) with constant stirring. The thinner must be added in small increments initially. A propeller-type air-driven mixer is preferred. Mix ration by volume = 3:1:4 (base: catalyst: thinner)

(2) Induction Period – epoxy primer has no induction period, i.e., it can be used immediately after mixing and straining.

(3) Pot Life – 4 hours at room temperature.

(4) Application – Apply 0.2 to 0.6 mils dry film thickness. Dry to overcoat = 2 to 24 hours at room temperature.
e. Flexible Primer – Mix and apply primer coating (Item 138 or 139, WP 0157 00) as follows:

1. Mix
   a. Agitate individual components thoroughly just prior to mixing. Ensure that all solids have been dislodged from the bottom of the containers.
   b. Mix ratio of primer coating (Item 138, WP 0157 00) by volume is 1:1 (base: catalyst).
   c. Primer coating (Item 139, WP 0157 00) is a single component material, i.e., has no catalyst.
   d. Do not thin these coatings.

2. Induction Period – Allow primer coating (Item 138, WP 0157 00) to stand 30 minutes before using. Primer coating (Item 139, WP 0157 00) has no induction period, i.e., it can be used immediately after agitating and straining.

3. Pot Life – The pot life of primer coating (Item 138, WP 0157 00) is 4 hours at room temperature. The pot life of primer coating (Item 139, WP 0157 00) is 8 hours at room temperature in a closed container (e.g., pressure pot or cup gun).

4. Application – Apply 1.5 to 2.3 mils dry film thickness. Primer coating (Item 139 WP 0157 00) contains a high percentage of solvent so more than one coat will be required to achieve the required film thickness. Dry time between coats is 15 minutes to 24 hours. Dry to topcoat for primer coating (Item 138, WP 0157 00) is 4 to 24 hours at room temperature. Dry to topcoat for primer coating (Item 139, WP 157 00) is 1 to 24 hours at room temperature.

f. Topcoat – Mix and apply the polyurethane topcoat (Item 135 or 136, WP 0157 00) as follows:

1. Mix
   a. Agitate individual components thoroughly just prior to mixing. Ensure that all solids have been dislodged from the bottom of the containers.
   b. Mix ratio by volume is 1:1 (base: catalyst)
   c. Do not thin this coating.

2. Induction Period – Allow to stand 15 minutes before using.

3. Pot Life – 4 hours at room temperature

4. Application – Apply 1.8 to 2.7 mil dry film thickness. Dry time between coats is 15 minutes to 24 hours. Dry to overcoat is 8 to 48 hours at room temperature.
REWORK PROCEDURES - continued

g. Markings – Apply stencil markings per applicable TM’s and engineering drawings.

h. Cure to Handle – Prior to beginning reassembly operations, allow the coating system to cure 8 hours minimum at room temperature.

i. Full Cure – Prior to adhesion testing and prior to flight, cure the coating system for 7 days minimum at room temperature.

21. Adhesion – The painted bilge shall pass wet tape adhesion tests. Test coupons or witness panels shall not be tested in place of the bilge itself.

WARNING

ISOPROPYL ALCOHOL

22. Adhesion Test Procedure

a. Cure the painted bilge per procedures as per paragraphs 20h and 20i of this work package.

b. Select a minimum of six test locations throughout the bilge; at least three on floor former web faces and at least three on belly skins. Test locations should be a minimum of four inches by four inches and at least one inch from any edge, corner seam, lap, or fastener.

c. Solvent clean test areas using isopropyl alcohol (Item 42, WP 0157 00) and cloth, cleaning, (Item 73, WP 0157 00) as follows:

   (1) Dispense isopropyl alcohol onto cleaning cloth and rub the test surface. Immediately wipe dry with a dry cleaning cloth. Do not allow alcohol to evaporate to dryness.

   (2) Frequently exchange soiled cloth for a clean one.

   (3) Repeat cleaning steps until the cloth shows no soil.

d. Apply four by four inch pieces of clean cheesecloth (Item 60, WP 0157 00) saturated with distilled de-ionized water (Item 194.1, WP 0157 00) to the areas to be tested. Cover the wet patches with clean polyethylene film (Item 132, WP 0157 00) and seal the edges with tape (Item 175, WP 0157 00).

e. Allow the wet patches to remain on the test surface for 24 to 26 hours at room temperature. Re-saturate the cheesecloth with distilled de-ionized water (Item 194.1, WP 0157 00) as necessary during the exposure period.

f. At the end of the specified time, remove the cloth and wipe the surface dry with clean cheesecloth.

g. Immediately perform the tape adhesion test as follows:

   (1) Apply masking tape, (Item 175, WP 0157 00), one inch wide by approximately two inches long to test area. Masking tape must have rubber or acrylic adhesive with a minimum peel strength of 60 ounces per inch of width.

   (2) Press the tape down firmly to the test area using the roll of tape itself.

   (3) Remove the tape in one abrupt motion, pulling perpendicular to the panel.

   (4) Examine the tested area and the tape for any removed coating.
(5) The coating passes the test if no blistering of the paint is observed, and no paint is removed by the tape.

(6) The coating fails the test if blistering of the paint is observed, and/or paint is removed by the tape.

23. Inspection Requirements

Quality Assurance is responsible to see that all requirements of this Work Package are met. The most important requirements are listed below:

a. Stripped Paint – Paint stripping shall be verified as per paragraph 8.

b. Final Cleaning – Cleanliness shall be verified per paragraph 16.

c. Conversion Coating – The conversion coating shall be inspected, especially for powdery coating, per paragraph 17.

d. Workmanship – Refer to paragraph 20c.

e. Thickness – Paint thickness shall be verified per paragraphs 20d(4), 20e(4), and 20f(4).

f. Adhesion – The painted bilge shall pass wet tape adhesion tests. Test coupons or witness panels shall not be tested in place of the bilge itself. Refer to paragraph 22 for test procedures.

**WARNING**

CORROSION PREVENTIVE COMPOUND

24. Corrosion Preventive Compound (CPC) Application

CPC will be applied to the bilge area IAW WP 0161 00. This process may be deferred until later in the overhaul process, i.e., after aircraft painting.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT  
CH-47D HELICOPTER  
FINAL ACCEPTANCE AND TEST FLIGHT/ISSUE TO OWNING UNIT

INITIAL SETUP

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SCOPE

This work package outlines the procedures for aircraft final test flight and acceptance by the owning unit. The procedures may be changed or modified by the Contracting Officer to meet operational circumstances or conditions.

PREPARATION FOR ACCEPTANCE TEST FLIGHT

After completion of the required maintenance and repair, and prior to conducting final acceptance flight test, check, service, and/or perform the following items:

1. Depreserve helicopter per TM 55-1520-240-23.
2. Check and service hydraulic systems per TM 55-1520-240-23.
3. Check and service engine oil systems per TM 55-1520-240-23.
4. Check and service auxiliary power unit system per TM 55-1520-240-23.
5. Check and service all transmissions systems per TM 55-1520-240-23.
6. Install serviceable battery per TM 55-1520-240-23.
7. Install serviceable fire extinguishers per TM 55-1520-240-23.
8. Install serviceable first aid kits per TM 55-1520-240-23.
9. Install all avionics equipment per TM 11-1520-240-23.
PREPARATION FOR ACCEPTANCE TEST FLIGHT - continued

12. Check and service fuel system per TM 55-1520-240-23.

13. Perform maintenance test flight per TM 1-1520-240-MTF.

ISSUE OF AIRCRAFT TO OWNING UNIT

1. Transferring activity shall ensure the aircraft is prepared for the receiving unit IAW applicable publications. Transferring activity and receiving unit personnel shall jointly accomplish an aircraft inventory and logbook inspection. Transferring activity shall comply with DA PAM 738-751 for applicable forms and records. When applicable, transferring activity will request an AMCOM waiver for re-torque requirements that may come due during the receiving unit’s ferry flight to home station.

2. Transferring activity and receiving unit personnel may jointly perform a Maintenance Operational Check (MOC) and Acceptance Maintenance Test Flight (MTF) IAW TM 1-1520-240-MTF and other applicable publications. Transferring activity shall correct all legitimate deficiencies noted during the MOC/MTF.

3. Until the receiving unit accepts the aircraft (signed DD Form 1348-1A), the transferring activity shall maintain the aircraft in a flyable status for up to fourteen calendar days. Thereafter, the aircraft shall be funded for and placed in flyable storage IAW WP 0152 00 and other applicable publications.

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As Required

Personnel Required:
As Required

References:
TM 1-1500-328-23
TM 55-1520-240-23 Series

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package pertains to component overhaul and retirement schedules for the CH-47D. However, these schedules are dynamic and are constantly changing. The Depot/Contractor will insure that they are in receipt of the latest overhaul/retirement schedule information. Refer to TM 55-1520-240-23.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
STORAGE OF AIRCRAFT

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
As Required

Material/Parts:
As specified in referenced TM’s

Personnel Required:
As Required

References:
TM 1-1500-204-23 Series
TM 55-1520-240-23 Series

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package covers the different categories of aircraft storage and directs the Depot/Contractor to develop a storage plan for aircraft undergoing maintenance.

The Depot/Contractor shall be responsible for initiating action to place aircraft in storage. The type of storage shall be selected based on the length of time the aircraft will be inactive. When the decision is made to place an aircraft in storage, the aircraft will be prepared IAW TM 55-1520-240-23. Authorization to deviate from published procedures will be obtained, in writing, from AMCOM. All aircraft placed in storage shall be carefully inspected at regular intervals of 60 days or less, depending on local conditions. Stored aircraft shall be corrosion-treated if this precaution is found necessary when conducting inspection for corrosion. Particular attention shall be given to those areas where moisture deposits will not evaporate rapidly. Normally, corrosion will not be as prevalent on painted surfaces as on unpainted surfaces.

COMPONENTS INVOLVED IN AN ACCIDENT

Any component removed for reason of accident shall not be preserved, but shall be shipped in the same condition it was in after the accident.

CATEGORIES OF STORAGE

1. Flyable Storage

Flyable storage is the prescribed procedure to maintain a stored aircraft in operable condition. Next to daily use, this category of storage keeps the aircraft in the best possible condition. All scheduled preventative maintenance will be performed on aircraft in flyable storage, and periodic operation of the aircraft and all systems is required. There is no time limit on flyable storage. Refer to TM 55-1520-240-23.

2. Short Term Storage

Short term storage is used to store an aircraft for a period not to exceed 45 days. Aircraft in short term storage require extensive preservation, but minimal periodic attention. Refer to TM 55-1520-240-23.

3. Intermediate Storage

Intermediate storage is used to store aircraft for a period of 46 to 180 days. Aircraft in intermediate storage require very extensive preservation, but minimal periodic attention. Refer to TM 55-1520-240-23.
CATEGORIES OF STORAGE - continued

4. Long Term Storage

Procedures for long-term storage are not available for the storage of Army aircraft. If storage beyond 180 days is required, the aircraft will be de-preserved, returned to flyable status, operated, and re-preserved IAW TM 1-1500-204-23 and TM 55-1520-240-23.

5. Storage of Aircraft Undergoing Maintenance

There is no time limit for storage of aircraft undergoing maintenance. This category will include general requirements for storage of aircraft undergoing any maintenance action that causes the aircraft to be inactive for more than fourteen days. Due to the wide range of maintenance actions that may create this situation, some storage procedures will not be required and a degree of latitude is given to the Depot/Contractor on the storage measures needed for the particular situation. The fourteen-day limit is a guideline and variances are allowed. The Depot/Contractor will develop a written storage plan for execution of this DMWR based on estimated time of completion of the work, availability of storage facilities, and existing environmental conditions. Forward the plan to AMCOM/Contracting Officer for approval.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
FACILITIES REQUIREMENTS

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**SCOPE**

This work package outlines the general facility requirements for execution of this DMWR.

**OVERHAUL FACILITIES**

Overhaul facilities shall be equipped to perform all operations prescribed in this DMWR. The following describes facilities needed for overhaul of the helicopter. Table 1 is a listing of the typical shops required to perform these operations. Included are the space requirement factors necessary for planning for each aircraft processed under this DMWR. These factors multiplied by the total number of aircraft scheduled in the facility at any one time will give total facility floor space requirements. Included also in Table 1 are the general utility requirements for typical shop areas. Under no circumstances should Table 1 be considered a mandatory listing of shop layout. Specific qualification of a contractor will be done by means of a facility survey, completed before beginning any contractual work. Facility surveys will be performed under the direction of the Contracting Officer.

**UTILITIES REQUIRED**

Compressed air shall be available at 125–psig minimum. Distribution systems should have large headers connected into several receivers located in areas of heaviest usage. All equipment requiring compressed air should have lubrication requirements verified. Steam shall be medium pressure. Controls for environmental purposes should be as follows:

1. General purpose areas - electrical
2. Sensitive central area - electronic/pneumatic
3. Hazardous areas - pneumatic

Special high-efficiency particle arrestors should be utilized for "clean room" environment. Electrical systems should meet requirements of the national electrical code governing area where work is to be done.
INSPECTION/REPAIR SHOP AREAS FOR DETAILED CLOSE TOLERANCE PARTS

A totally enclosed inspection shop space with forced air ventilation is recommended. Filters able to arrest particles sized in excess of 50 to 100 microns shall be used. Fans able to maintain a slight positive pressure within the enclosed area shall be used. Walls and ceilings should be smooth, and with chip resistant surfaces. The flooring space should be sealed cement or tile to provide a dust free and easily maintained surface. The floor space should be adequate to maintain quality and production. All lighting shall be flush or of the type that will neither retain nor discharge foreign particles. Magnification shall be provided to accomplish those tasks that cannot be done without visual assistance. No grinding, filing, or sanding other than final hard polishing of bits and pieces, such as forgings, shall be allowed in the inspection area. Clean conditions to include clothing and hand tools are mandatory.

PSA, INSPECTION, AND REPAIR SHOP AREA

A totally enclosed area, isolated from corrosion generating materials or environment, is recommended. The floor shall be sealed cement or tile to provide an easily maintained surface. In addition, the floor shall be of sufficient strength to support the major assembly tools. The major assembly tools also should be free of vibration. The general areas shall be void of material or equipment not directly connected with the overhaul.

PAINT SHOP AREA

A totally enclosed area, isolated from corrosion generating materials or environment, is recommended. The flooring shall be sealed cement or tile to provide an easily maintained surface. Paint shops at all rework facilities should have adequate ventilation systems, to protect the health of the workers and to prevent deposition of overspray on newly painted or about-to-be-painted surfaces. The air flow should be from ceiling to floor. Exhaust air should pass through a suitable filter or scrubber to minimize air pollution outside the shop area. The paint shop should not be used for other operations, such as paint stripping, cleaning, and blasting.

CLEANING, STRIPPING, AND PLATING SHOP AREAS

NOTE

All stripping operations shall be performed in a shaded area. Never perform stripping operations in direct sunlight.

Area should be suitable for performing all of the requirements of the DMWR. In addition, corrosion removal will be performed in this area.

PACKAGING, UNPACKING, AND STORAGE AREA

This area should be totally enclosed, and it should be insured that there are no environmental conditions detrimental to the components.

AIRFIELD REQUIREMENTS

Suitable airfield facilities shall be provided including airspace available to perform maintenance flight testing, as specified in WP 0150 00. Tie-down and ground run-up areas must also be provided.

SPECIAL TOOLS AND EQUIPMENT

TM 55-1520-240-23 and WP 0158 00 provide a listing of special tools and equipment by nomenclature, part number, and Commercial and Governmental Entity Code (CAGE).

INSPECTION AND TEST EQUIPMENT

All special inspection or test equipment is identified in TM 55-1520-240-23 and this DMWR.
EXPENDABLE AND DURABLE ITEMS LIST

WP 0157 00 contains a listing of expendable and durable items requirements for use in this DMWR. Use of approved equivalent materials is authorized in lieu of items listed in WP 0157 00. Expendables are those products that may be consumed in use or that lose their identity in an assembly.

NOTE

Expendable material requirements of publications referenced in this DMWR are not included in WP 0157 00. Consult the applicable referenced publication for any additional expendable requirements.

Table 1. Typical Utility and Space Requirements

<table>
<thead>
<tr>
<th>AREA</th>
<th>AREA REQUIRED PER AIRCRAFT (SQ-FT)</th>
<th>LIGHT INTENSITY (FOOT CANDLES)</th>
<th>PROCESS STEAM</th>
<th>COMP AIR</th>
<th>WATER</th>
<th>EXHAUST VENTILATION</th>
<th>ENVIRONMENTAL CONTROL</th>
<th>INDUSTRIAL DRAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Change Assembly</td>
<td>35</td>
<td>100</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Parts Repair</td>
<td>25</td>
<td>100</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component Paint Shop</td>
<td>60</td>
<td>100</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Assembly</td>
<td>210</td>
<td>100</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical and Instruments</td>
<td>15</td>
<td>125</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Aircraft Paint Shop</td>
<td>210</td>
<td>125</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Flight and Ground Check</td>
<td>380</td>
<td>70</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component Overhaul and Maintenance</td>
<td>160</td>
<td>125</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Structures</td>
<td>320</td>
<td>125</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avionics</td>
<td>60</td>
<td>125</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>PSA and Disassembly</td>
<td>55</td>
<td>100</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotor Wing Blade</td>
<td>45</td>
<td>100</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber, Glass and Plastics</td>
<td>75</td>
<td>100</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Plating Shop</td>
<td>15</td>
<td>100</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

END OF WORK PACKAGE
SCOPE

This work package, when developed, is intended to streamline and accelerate the overhaul process during mobilization of the depot.

EXPLANATION OF MOBILIZATION REQUIREMENTS

In the event of mobilization, all depot maintenance overhaul or repair procedures requirements except those necessary to return the end item, assembly, subassembly, or component to a serviceable condition are to be exempt or revised. These changes include a list of instructions for modifying preshop analysis and/or overhaul procedures. The pertinent procedures to be modified are referred to by page and work page number, followed by the action to be taken and will be provided by the procuring activity maintenance engineering group.

<table>
<thead>
<tr>
<th>WORK PACKAGE NO</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>When modified procedures are developed, they will be incorporated into this work package.</td>
</tr>
</tbody>
</table>

Under a state of mobilization, the procuring activity may elect to:

1. Require all items to be overhauled, maximizing the longevity of such items by requiring full turnaround time during depot maintenance. This action would “zero” the “time since overhaul” of the item.

2. Require a quick turnaround on all items during depot maintenance by electing to minor repair items. Minor repair is defined as follows:

Maintenance performed to address the cause for depot return of an item and to restore the item to serviceable condition. This is done through correction of specific failure or unserviceable conditions. An item’s inherent weakness is addressed by carrying out convenience maintenance, inspections, repairs, and other preventive maintenance that are determined to be cost effective. Minor repair changes the status of an item from an unserviceable item to a serviceable item retaining reliability and safety design level requirements, but it does not, in general, increase the item’s potential longevity. The determination to minor repair or overhaul is made after the item is inducted into the depot and undergoes a pre-shop analysis (PSA). For items with “time between overhauls” (TBOs), the only alternative to minor repair is overhaul. Minor repair does not “zero” the “time since new” or “time since overhaul” of the item.

END OF WORK PACKAGE
SCOPE

This work package describes the quality assurance requirements to be instituted during overhaul of the CH-47D Helicopter IAW this DMWR.

STATEMENT OF RESPONSIBILITY

The Depot/Contractor is responsible for complying with the quality assurance requirements contained in this work package and IAW ISO 9001 2000 standards or equivalent. The commodity manager reserves the right to perform inspections or make changes that ensure the depot work being performed meets the quality standards of the DMWR and preserves the inherent reliability of the item.

DEFINITIONS

For quality assurance definitions and terms refer to ISO 8402. For definitions specific to Flight Safety Parts (FSP) Critical Characteristics, Maintenance and Overhaul, QE STD 2, refer to AMCOM Regulation 702-7, Appendix D. All additional quality provisions shall be as specified by the applicable Procurement Request Order Number (PRON) or contract.

A list of inspection definitions is shown in Table 1. Accept and reject criteria for these defects and unique repair methods are found in applicable areas of this DMWR, TM 55-1520-240-23, and TM 1-1500-204-23.

<table>
<thead>
<tr>
<th>TERM</th>
<th>DEFINITION</th>
<th>PROBABLE CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasion</td>
<td>Roughened surface, varying from light to severe</td>
<td>Foreign material present between moving parts</td>
</tr>
<tr>
<td>Bend</td>
<td>Any change in the intended configuration</td>
<td>Application of severe or excessive force</td>
</tr>
<tr>
<td>Break</td>
<td>Separation of part</td>
<td>Severe force, pressure, or overload</td>
</tr>
<tr>
<td>Burn</td>
<td>Loss of material</td>
<td>Excessive heat</td>
</tr>
<tr>
<td>Burnishing</td>
<td>The smoothing of a metal surface by mechanical action, but without loss of material. Generally found on plain bearing surfaces</td>
<td>Excessive friction</td>
</tr>
<tr>
<td>Burr</td>
<td>A rough edge or sharp projection</td>
<td>Impact from foreign object, or poor machining</td>
</tr>
<tr>
<td>Chipping</td>
<td>Breaking away of small particles</td>
<td>Heavy impact of foreign object</td>
</tr>
<tr>
<td>Corrosion</td>
<td>Surface chemical action that results in surface discoloration, a layer of oxide, rust, and removal of surface metal</td>
<td>Improper corrosion preventive procedures and excessive moisture</td>
</tr>
<tr>
<td>Crack</td>
<td>A break in material</td>
<td>Severe stress from overloading or shock; possible extension of a scratch</td>
</tr>
<tr>
<td>Dent</td>
<td>A small smoothly rounded depression</td>
<td>A sharp blow or excessive pressure</td>
</tr>
<tr>
<td>Distortion</td>
<td>A change from original shape</td>
<td>Application of severe heat or irregular forces</td>
</tr>
<tr>
<td>Erosion</td>
<td>Wearing away of material</td>
<td>Hot gases, corrosive liquids, or grit</td>
</tr>
</tbody>
</table>
**DEFINITIONS - continued**

Table 1. Inspection Definitions - continued

<table>
<thead>
<tr>
<th>TERM</th>
<th>DEFINITION</th>
<th>PROBABLE CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue failure</td>
<td>Sharp indentations, cracks, tool marks, and inclusions that result in progressive yielding of one or more local areas</td>
<td>Cyclic stress. As stress is repeated, cracks develop, then spread, usually from surface (or near surface) of the particular section. Finally, so little sound material remains that normal stress on part exceeds strength of the remaining material.</td>
</tr>
<tr>
<td>Flaking</td>
<td>Loose particles of material or surface covering</td>
<td>Imperfect bond or severe load</td>
</tr>
<tr>
<td>Fracture</td>
<td>See break</td>
<td></td>
</tr>
<tr>
<td>Gouging</td>
<td>Removal of surface material. Typified by rough and deep depressions</td>
<td>Protruding objects, misalignment</td>
</tr>
<tr>
<td>Heat oxidizing</td>
<td>Characterized by a discoloring film. Color varies from yellow to brown and blue to purple</td>
<td>High temperature operation</td>
</tr>
<tr>
<td>Indenting</td>
<td>Cavities with smooth bottoms and sides. Occurs on rolling contact surfaces of bearing components</td>
<td>Loose or foreign particles rolling between rotating elements of a bearing</td>
</tr>
<tr>
<td>Nick</td>
<td>A sharp-bottomed depression that may have rough outer edges</td>
<td>Dropping, banging</td>
</tr>
<tr>
<td>Off-square or misalignment of anti-friction bearing</td>
<td>Indicated by retainer deterioration, retainer bore erosion, and gouged retainer rolling element pockets of the inner and outer race. Two distinct rolling element paths may be seen on the race where off-square conditions exist</td>
<td>Caused by rolling element speed variation, which jams rolling elements into separator pockets</td>
</tr>
<tr>
<td>Pitting</td>
<td>Small indentation in a surface</td>
<td>Chemical pitting: Oxidation of surface or electrolytic action</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mechanical pitting: Chipping of loaded surfaces caused by improper clearances and overloading, and by pressure of foreign material</td>
</tr>
<tr>
<td>Scoring</td>
<td>Deep scratch following path of part travel</td>
<td>Result of localized lubrication break down between sliding surfaces</td>
</tr>
<tr>
<td>Scratch</td>
<td>A very shallow furrow or irregularity, usually longer than wide</td>
<td>Movement of a sharp object across the surface</td>
</tr>
<tr>
<td>Seizure</td>
<td>Fusion or binding of two adjacent surfaces preventing continued movement</td>
<td>Improper lubrication or wear</td>
</tr>
<tr>
<td>Stripped thread</td>
<td>Thread of a nut, stud, bolt, or screw damaged by tearing away part of thread</td>
<td>Improper installation, thread pitch or size</td>
</tr>
<tr>
<td>Tear</td>
<td>Parting of parent material</td>
<td>Excess tension, caused by an external force</td>
</tr>
<tr>
<td>Wear</td>
<td>Slow removal of parent material. Frequently wear is not visible to the naked eye</td>
<td>Result of abrasive substances contacting rolling surfaces, and acting as a lapping compound</td>
</tr>
<tr>
<td>Yielded</td>
<td>Deformation of the thread pitch on a stud or bolt</td>
<td>Excessive tension or torsion, caused by an external force</td>
</tr>
</tbody>
</table>
SPECIAL REQUIREMENTS FOR INSPECTION TOOLS AND EQUIPMENT

The overhaul facility is responsible for acquisition, maintenance, calibration, and disposition of all inspection and test equipment.

All instrumentation and test equipment used in compliance with this DMWR shall be calibrated and controlled IAW ANSI/NCSI Z540.1 or ISO 10012-1.

CERTIFICATION REQUIREMENTS

The Depot/Contractor activity shall be responsible for certifying that personnel skills, equipment, and material meet the requirements of the work to be accomplished to include QE-STD 2 certification requirements of AMCOM Reg 702-7. The activity shall also provide objective evidence certifying that specifications for special procedures such as welding, radiography, plating, nondestructive inspection, test cell operation, etc. have been complied with. Personnel performing nondestructive inspection shall be certified IAW AIA/NSA 410 series. Personnel performing welding procedures shall be certified IAW SAE AMS-STD-1595 series.

IN-PROGRESS INSPECTIONS

Inspecting and testing shall be prescribed by clear, complete, and current instructions (i.e. shop travelers, evaluation check sheets, assembly and inspection records, etc.), making reference to critical characteristics IAW AMCOM Reg 702-7 where applicable. These instructions shall assure inspection and test of materials, work processes, critical characteristics, and complete articles/assemblies are IAW this DMWR. Accept/reject criteria shall also be included. CCAD Regulation 700-11 is recommended as a guide for establishing responsibilities and procedures for development, review, approval, and control of process documents.

The activity performing this DMWR shall maintain records of all inspections and tests. These records shall indicate nature and number of inspections made, the number and types of deficiencies found, the quantities of items accepted or rejected and the nature of corrective action taken. Records pertinent to “Flight Safety Parts” shall be marked as such, and comply with AMCOM Reg 702-7.

Activities shall take prompt action to correct any conditions that have or could result in submission of supplies and services that do not conform to the item specifications. Refer to WP 0001 00.

The Depot's/Contractor's inspection system shall provide for procedures that will assure that applicable drawings, specifications, and instructions required by this DMWR, as well as authorized changes thereto, are used for fabrication, maintenance, inspection, and testing.

The activity shall maintain a positive identification system to indicate the status of all supplies used in compliance with this DMWR, whether manufactured, processed, or provided by subcontractors. Identification may be accomplished by means of tags, stamps, routing cards, or other control devices that will clearly show inspection and serviceability status. Serviceable and unserviceable material will be stored in segregated areas.

The Depot/Contractor shall perform oil analysis on all oil-wetted components that have been designated for participation in the Army Oil Analysis Program (AOAP). Specifically, oil samples shall be taken and analyzed during the induction process and immediately prior to issue of the helicopter to the field unit. Oil samples will be taken IAW AR 750-43, TB 43-0106, and TM 55-1520-240-23 from the following components/systems:

1. No. 1 and No. 2 Turbine Engines
2. No. 1 and No. 2 Engine Gearboxes
3. All Transmissions
4. No. 1 and No. 2 Hydraulic Systems
5. Utility Hydraulic System
IN-PROGRESS INSPECTIONS - continued

In Progress Inspections shall be performed prior to any final assembly or installation. Methods and procedures employed for inspection of material and coverage of work operations shall assure, to the maximum extent possible, that the product does conform to established DMWR standards.

ACCEPTANCE INSPECTIONS

Items overhauled IAW this DMWR will be accepted based on the following criteria:

1. Conformance to quality of material requirements.
2. Conformance to all in-progress quality assurance inspections.
3. Conformance to all final assembly testing requirements.
4. Conformance to the preservation, packaging, and marking requirements.

Upon completion of processing, each helicopter shall be examined to insure that all quality characteristics, individually and collectively, conform fully to established quality requirements. Included is the inspection of all applicable processing records, inspection records, and all other documents to insure that all work performed has been inspected or certified during the in-progress phase and that characteristics relating to work performed are determined to be in conformance with requirements.

All aircraft inventory items shall be checked for serviceable condition and appropriate entries shall be made on DA Form 2408-17, Aircraft Inventory Record. Preparation and use of this form shall be IAW DA PAM 738-751.

Upon completion of depot maintenance, the helicopter will be weighed IAW TM 55-1500-342-23 and appropriate entries will be made on DD Form 365 series forms.

An initial pre-flight inspection will be required immediately prior to first test flight. This inspection will verify that all components and systems are functioning properly. Pre-flight inspections will be performed only by personnel who have been qualified and authorized to perform this function IAW approved procedures, instructions, and U.S. Army directives, as provided by local AMRDEC Engineering or PRON/Contract requirements.

Prior to first test flight, the helicopter hydraulic systems will be purified IAW WP 0162 00. A functional test flight will consist of a thorough inspection and air-worthiness check of the helicopter before flight, during flight, and upon completion of test flight. Each helicopter completing depot maintenance shall be subjected to a test flight by a qualified test pilot IAW TM 1-1520-240-MTF. Any deficiencies or shortcomings found during test flight will be recorded on a Functional Test Flight Record Sheet. Upon completion of the test flight(s), transfer discrepancies to DA Form 2408-13-1. Correct all discrepancies and process DA Form 2408-13-1 IAW DA PAM 738-751.

TM 1-1500-328-23 establishes standards of serviceability for transfer of an aircraft after completion of depot maintenance. As a minimum, the following shall be accomplished:

1. All phase and periodic inspections shall be accomplished and documented. Upon receipt of helicopter for induction into depot maintenance, and again prior to issue of the aircraft to a field unit, an inventory of equipment listed on DA Form 2408-17 shall be accomplished.
2. All applicable helicopter forms and records shall be completed IAW DA PAM 738-751, prior to completion of depot maintenance.
3. All items listed on the Overhaul and Retirement schedule, TM 55-1520-240-23, as applicable shall be replaced if criteria contained in Section 8, of TM 1-1500-328-23 are not met, unless otherwise specified by the local AMRDEC Engineering or Contracting Officer.

END OF WORK PACKAGE
CHAPTER 4

SUPPORTING INFORMATION
DEPOT MAINTENANCE WORK REQUIREMENTS
CH-47D HELICOPTER

REFERENCES

SCOPE

This work package contains a list of official publications referenced in this DMWR. They are applicable to depot maintenance activities on the CH-47D airframe. They are organized in alphabetical order by Publication Number and include Regulations, DA Pamphlets, Standards, Depot Maintenance Work Requirements, Technical Bulletins, Technical Manuals and Miscellaneous Publications.

DEPOT MAINTENANCE WORK REQUIREMENTS

DMWR 1-1660-206 Depot Maintenance Work Requirement for Ignition Unit Assembly
DMWR 1-4810-229 Depot Maintenance Work Requirement for Gate Shut-Off Valve
DMWR 1-6115-511 Depot Maintenance Work Requirement for AC Generator Assembly
DMWR 55-1560-275 Depot Maintenance Work Requirement for Self Tuning Dynamic Absorber
DMWR 55-1615-296 Depot Maintenance Work Requirement for Forward and Aft Rotary Wing Head Assemblies
DMWR 55-1615-297 Depot Maintenance Work Requirement for Forward and Aft Controllable Swashplate Assemblies
DMWR 55-1615-316 Depot Maintenance Work Requirement for Instrumented Link Assembly
DMWR 55-1615-321 Depot Maintenance Work Requirement for Forward Transmission Assembly
DMWR 55-1615-322 Depot Maintenance Work Requirement for Drive Shafting
DMWR 55-1615-323 Depot Maintenance Work Requirement for Engine Transmission Assembly
DMWR 55-1615-324 Depot Maintenance Work Requirement for Aft Transmission Assembly
DMWR 55-1615-325 Depot Maintenance Work Requirement for Combining Transmission Assembly
DMWR 55-1620-208 Depot Maintenance Work Requirement for Forward Landing Gear Shock Strut Assembly
DMWR 55-1620-224 Depot Maintenance Work Requirement for Power Steering Assembly
DMWR 55-1620-225 Depot Maintenance Work Requirement for Aft Landing Gear Shock Strut Assembly
DMWR 55-1650-154 Depot Maintenance Work Requirement for Pump/motor Assembly
DMWR 55-1650-166 Depot Maintenance Work Requirement for Blade Lag Shock Absorber
DMWR 55-1650-302 Depot Maintenance work Requirement for Ramp Actuating Cylinder Assembly
DMWR 55-1650-395 Depot Maintenance Work Requirement for Pivoting Dual Actuator Cylinder
DMWR 55-1650-396 Depot Maintenance Work Requirement for Reservoir/cooler Subassembly, Hydraulic, Flight Control, CH-47D
DMWR 55-1650-397 Depot Maintenance Work Requirement for Integrated Lower Control Actuators
DMWR 55-1680-133 Depot Maintenance Work Requirement for Rescue and Cargo Winch
DMWR 55-1680-225 Depot Maintenance Work Requirement for Heater Fuel Control Assembly
DMWR 55-1680-246 Depot Maintenance Work Requirement for Extinguisher, Fire, Aircraft
# DEPOT MAINTENANCE WORK REQUIREMENTS - continued

<table>
<thead>
<tr>
<th>DMWR 55-1680-288</th>
<th>Depot Maintenance Work Requirement for Generator Control Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMWR 55-1680-289</td>
<td>Depot Maintenance Work Requirement for Electromechanical Linear Actuator</td>
</tr>
<tr>
<td>DMWR 55-1680-341</td>
<td>Depot Maintenance Work Requirement for Magnetic Brake Assembly</td>
</tr>
<tr>
<td>DMWR 55-1680-350</td>
<td>Depot Maintenance Work Requirement for Cockpit Control Drive Actuators</td>
</tr>
<tr>
<td>DMWR 55-1680-351</td>
<td>Depot Maintenance Work Requirement for Actuator, Electromechanical Linear</td>
</tr>
<tr>
<td>DMWR 55-2835-205</td>
<td>Depot Maintenance Work Requirement for Gas Turbine Engine Auxiliary Power Unit (APU)</td>
</tr>
<tr>
<td>DMWR 55-2840-254-1</td>
<td>Depot Maintenance Work Requirement for Engine, Aircraft Gas Turbine</td>
</tr>
<tr>
<td>DMWR 55-1650-398</td>
<td>Depot Maintenance Work Requirement for Hydraulic Starter/Pump</td>
</tr>
<tr>
<td>DMWR 55-1650-399</td>
<td>Depot Maintenance Work Requirement for Power Transfer Unit, Hydraulic Motor/Pump</td>
</tr>
<tr>
<td>DMWR 55-1650-400</td>
<td>Depot Maintenance Work Requirement for Swivelining Dual Actuator Cylinder</td>
</tr>
<tr>
<td>DMWR 55-1650-412</td>
<td>Depot Maintenance Work Requirement for Hydraulic Accumulator Assembly</td>
</tr>
<tr>
<td>DMWR 55-1650-414</td>
<td>Depot Maintenance Work Requirement for Variable Displacement Hydraulic Pump</td>
</tr>
<tr>
<td>DMWR 55-2910-200</td>
<td>Depot Maintenance Work Requirement for Fuel Transfer Pump Model RG1510G P/N 114P4010-1</td>
</tr>
<tr>
<td>DMWR 55-2915-168</td>
<td>Depot Maintenance Work Requirement for Motor Operated Gate Valve</td>
</tr>
<tr>
<td>DMWR 55-2915-296</td>
<td>Depot Maintenance Work Requirement for Centrifugal Fuel Booster Pump</td>
</tr>
<tr>
<td>DMWR 55-2995-107</td>
<td>Depot Maintenance Work Requirement for Hydraulic Starter Assembly</td>
</tr>
<tr>
<td>DMWR 55-2995-108</td>
<td>Depot Maintenance Work Requirement for Hydraulic Starter Assembly</td>
</tr>
<tr>
<td>DMWR 55-4140-216</td>
<td>Depot Maintenance Work Requirement for Mixed Flow Fan</td>
</tr>
<tr>
<td>DMWR 55-4140-220</td>
<td>Depot Maintenance Work Requirement for Vaneaxial Fan Assembly (Utility Hydraulic System)</td>
</tr>
<tr>
<td>DMWR 55-4140-221</td>
<td>Depot Maintenance Work Requirement for Vaneaxial Fan Assembly (Flight Boost)</td>
</tr>
<tr>
<td>DMWR 55-4320-278</td>
<td>Depot Maintenance Work Requirement for Variable Displacement Axial Piston Pump Assembly</td>
</tr>
<tr>
<td>DMWR 55-6110-227</td>
<td>Depot Maintenance Work Requirement for Generator Control Unit</td>
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<td>DMWR 55-6115-496</td>
<td>Depot Maintenance Work Requirement for AC Generator PN 31161-001</td>
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<td>DMWR 55-6115-507</td>
<td>Depot Maintenance Work Requirement for Generator</td>
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<td>DMWR 55-6130-290</td>
<td>Depot Maintenance Work Requirement for Power Supply P/N 28VS200Y-9</td>
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<td>DMWR 55-6610-349</td>
<td>Depot Maintenance Work Requirement for Counter Drum Pointer Altimeter TYPE AAU-31/A</td>
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<td>DMWR 55-6620-326</td>
<td>Depot Maintenance Work Requirement for Rate Of Flow Transmitter</td>
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<td>DMWR 55-6620-361</td>
<td>Depot Maintenance Work Requirement for Dual Fuel Flow Indicator</td>
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<td>DMWR 55-6680-333</td>
<td>Depot Maintenance Work Requirement for Pump Control Unit</td>
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<td>DMWR 55-6695-215</td>
<td>Depot Maintenance Work Requirement for Fuel Quantity Indicator</td>
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### DEPOT MAINTENANCE WORK REQUIREMENTS - continued

- DMWR 55-6610-349: Depot Maintenance Work Requirement for Counter Drum Pointer Altimeter TYPE AAU-31/A
- DMWR 55-6620-326: Depot Maintenance Work Requirement for Rate Of Flow Transmitter

### FIELD MANUALS

- FM 3-04.500: Army Aviation Maintenance

### MILITARY SPECIFICATIONS AND STANDARDS

<table>
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<th>Specification</th>
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<tr>
<td>MIL-C-5541E</td>
<td>Chemical Conversion Coating on Aluminum and Aluminum Alloys</td>
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<td>MIL-C-46168D(3)</td>
<td>Coating, Aliphatic Polyurethane, Chemical Agent Resistant</td>
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<td>MIL-F-18264D(2) Notice 1</td>
<td>Finishes: Organic, Weapons System, application and Control of</td>
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<td>Interchangeability and Replaceability of Component Parts for Aerospace</td>
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<td>Primer Coatings: Epoxy, High-Solids</td>
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<td>MIL-PRF-85582D</td>
<td>Primer Coatings: Epoxy, Waterborne</td>
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<td>Military Marking for Shipment and Storage</td>
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<td>MIL-STD-871A Notice 3</td>
<td>Electro Chemical Stripping of Inorganic Finishes</td>
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<td>MIL-STD-2073-1D(1)</td>
<td>Standard Practice for Military Packaging</td>
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### PAMPHLETS

- DA PAM 25-30: Consolidated Index of Army Publications and Blank Forms
- DA PAM 385-40: Army Accident Investigation and Reporting

### REGULATIONS

- AMCOM REG 702-7: Flight Safety Parts / New Source Testing Program Management
- AR 11-27: Army Energy Program
- AR 95-1: Flight Regulations
- AR 385-95: Army Aviation Accident Prevention
- AR 700-138: Army Logistics Readiness and Sustainability
- AR 700-139: Army Warranty Program
- AR 725-50: Requisition, Receipt and Issue System
REGULATIONS - continued

AR 750-1 Army Material Maintenance Policy
AR 750-43 Army Test, Measurement, and Diagnostic Equipment Program

TECHNICAL BULLETINS

TB 1-1500-341-01 Aircraft Components Requiring Maintenance Management and Historical Data Reports
TB 43-0002-3 Maintenance Expenditure Limits for Army Aircraft
TB 43-0106 Aeronautical Equipment Army Oil Analysis Program (AOAP)
TB 43-0123 Aviation Electronics Configuration Directory
TB 55-8100-200-24 Maintenance of Specialized Reusable Containers for Aircraft Equipment
TB ORD-1030 Army Vehicles, Installation and Use of Overhaul and Overhaul/MWO Data Plates

TECHNICAL MANUALS

TM 1-1500-204-23 Series Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual For General Aircraft Maintenance
TM 1-1500-250-23 Aviation Unit and Aviation Intermediate Maintenance for General Tie-down and Mooring on All Series Army Models, AH-64, UH-60, CH-47, UH-1, AH-1, OH-58 Helicopters
TM 1-1500-328-23 Aeronautical Equipment Maintenance Management Policies and Procedures
TM 1-1500-344-23 Aircraft Weapons System Cleaning and Corrosion Control
TM 1-1500-335-23 Nondestructive Inspection Methods
TM 1-1500-343-23 Organizational/Unit and Intermediate Maintenance for Avionic Cleaning and Corrosion Prevention /Control
TM 1-1520-240-10 Operators Manual for Army CH-47D Helicopter
TM 1-1520-240-MTF Maintenance Test Flight Manual for Army Model CH-47D Helicopter
TM 1-2840-265-23 Aviation Unit and Aviation Intermediate Maintenance Manual for Engine, Gas Turbine Model T55-GA-714A
TM 1-2840-265-23P Aviation Unit and Aviation Intermediate Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Engine, Gas Turbine Model T55-GA-714A
TM 11-1520-240-23 Aviation Unit and Aviation Intermediate Maintenance Manual for Army Model CH-47D Helicopter Avionics Configuration
TM 11-1520-240-23P Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List for CH-47D Electronic Equipment Configuration
TM 55-1500-322-24 Maintenance of Aeronautical Antifriction Bearings for Organizational, Intermediate, and Depot Maintenance Levels
TM 55-1500-342-23 Army Aviation Maintenance Engineering Manual for Weight and Balance
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TM 55-1500-345-23 Painting and Marking of Army Aircraft
TM 55-1520-240-23 Series Aviation Unit and Aviation Intermediate Maintenance Manual, CH-47D Helicopter
TM 55-1520-240-23P Series Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List for Helicopter, Cargo Transport CH-47D
TM 55-1520-240-PM Phased Maintenance Checklist CH-47D Helicopter
TM 55-1520-240-PMD Preventive Maintenance Daily Inspection Checklist CH-47D Helicopter
TM 55-1520-240-T-1 thru T-3 Aviation Unit and Aviation Intermediate Troubleshooting Manual for CH-47D Helicopter
TM 55-1730-229-12 Operator and Organizational Maintenance Manual, Power Unit, Aviation, Multi-Output GTED Electrical, Hydraulic, Pneumatic (AGPU)
TM 55-2620-200-24 Inspection, Maintenance Instructions, Storage, and Disposition of Aircraft Tires and Inner Tubes
TM 55-2835-205-23 Aviation Unit and Intermediate Maintenance for Gas Turbine Engine (Auxiliary Power Unit - APU) MODEL T-62T-2B
TM 55-1520-205-23P Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Gas Turbine Engine (Auxiliary Power Unit - APU), MODEL T-62T-2B

MISCELLANEOUS PUBLICATIONS

A-A-50271 Plate Identification
ANSI/NCSL Z540.1 Calibration System Requirements
ASTM-B244 Coatings, Anodic on Aluminum and of Other Nonconductive Coatings on Nonmagnetic Basis Metals with Eddy-Current Instruments, Measurement of Thickness
ASTM-B499 Metals, Magnetic Basis, Measurement of Coating Thicknesses by the Magnetic Method: Nonmagnetic Coatings
ASTM-D6193 Standard Practice for Stitches and Seams
ASTM-E1417 Inspection, Fluorescent Penetant
ASTM-E1444 Particle Examination, Magnetic
ASTM-E1742 Radiographic Examination
ASTM-E1794 Foam Cored Sandwich Panels (200 Deg F Elevated Humidity Service), Type II Panels, Adhesive for Bonding
AWS D17.1 Specification for Fusion Welding for Aerospace Applications
CTA 8-100 Army Medical Department Expendable/Durable Items
CTA 50-970 Expendable Items (Except; Medical, Class V, Repair Parts, and Heraldic Items)
D145-0006:10.0200 Boeing Vertol, Control Rigging Procedure Complete Aircraft
D145-0006:10.0300 Boeing Vertol Flight Control System – Motion Check Complete Aircraft
MISCELLANEOUS PUBLICATIONS - continued

D145-0006:10.0400  Boeing Vertol, Flight Control Feel Forces – System Check Complete Aircraft
ISO 9000  Quality Management Systems – Fundamentals and Vocabulary
ISO 9001  Quality Management Systems - Requirements
NAS 410  NAS Certification & Qualification of Nondestructive Test Personnel
NFPA 13, Vol. 1  Standard for Installation of Sprinkler Systems
OSHA 1910.159  Automatic Sprinkler Systems
PLM-TM-97059  Pall Purifier Operation and Maintenance Manual
SAE-AMS 2300  Premium Aircraft-Quality Steel Cleanliness, Magnetic Particle Inspection Procedure
SAE-AMS 2644  Inspection Materials, Penetrant
SAE-AMS 3041  Magnetic Particles, Nonfluorescent Wet Method, Oil Vehicle, Ready to Use
SAE-AMS 3043  Magnetic Particles, Nonfluorescent Wet Method, Oil Vehicle Aerosol Packaged
SAE-AMS-M3171  Magnesium Alloy, Processes for Pre-treatment and Prevention of Corrosion On
SAE-AMS-S-13165  Shot Peening of Metal Parts
SAE-AMS-W-6858  Welding, Resistance: Spot and Seam
T.O. 1-1-3  Inspection and Repair of Aircraft Integral Tanks and Fuel Cells
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
EXPENDABLE AND DURABLE ITEMS LIST

SCOPE

This work package lists expandable and durable items that you will need to operate and maintain the CH-47D Helicopter. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable Supplies and Durable Items List

Column (1) – Item Number. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item, e.g., Applicator (Item 44, WP 0157 00).

Column (2) – Level. This column includes the lowest of maintenance that requires the listed item (C=Operator/Crew).

Column (3) – National Stock Number. This is the NSN assigned to the item, which you can use to requisition it.

Column (4) – Item Name, Description, Commercial and Government Entity Code (CAGE), and Part Number (P/N). This column provides the other information you need to identify the item.

Column (5) – Unit of Measure (U/M). This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc

Table 1. Expendable and Durable Items List

<table>
<thead>
<tr>
<th>ITEM NUMBER</th>
<th>LEVEL</th>
<th>NATIONAL STOCK NUMBER</th>
<th>ITEM NAME, DESCRIPTION, GAGE, PART NUMBER</th>
<th>U/M</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C</td>
<td>-</td>
<td>Abrasive, cloth, type I, class I, grit 80, 100, 150, 220, 240 280, 320, 400, (81348), A-A-1048</td>
<td>RO</td>
</tr>
<tr>
<td>2</td>
<td>C</td>
<td>5350-00-967-5093</td>
<td>Abrasive, mat, fine grade, (58536) A-A-58054</td>
<td>RO</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>5350-01-097-0745</td>
<td>Abrasive, Paper, Aluminum Oxide, 600 grit</td>
<td>PG</td>
</tr>
<tr>
<td>4</td>
<td>C</td>
<td>7910-00-753-5242</td>
<td>Pad Scouring, Scotch Brite type A, Minnesota Mining and Materials Mfg. Co. (or equiv)</td>
<td>PG</td>
</tr>
<tr>
<td>5</td>
<td>C</td>
<td>-</td>
<td>Abrasive, paper, silicone carbide, waterproof 0000, 000, 180, 220, 240, 320, 360, 400 and 420 grit, A-A-1047</td>
<td>PG</td>
</tr>
<tr>
<td>6</td>
<td>C</td>
<td>5350-00-619-9168</td>
<td>Abrasive, paper, silicone carbide, waterproof 60 grit, (58536), A-A-1047</td>
<td>PG</td>
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<tr>
<td>7</td>
<td>C</td>
<td>5350-00-619-9167</td>
<td>Abrasive, paper, silicone carbide, waterproof 80 grit, (58536), A-A-1047</td>
<td>PG</td>
</tr>
<tr>
<td>8</td>
<td>C</td>
<td>5350-00-721-8115</td>
<td>Abrasive, paper, silicone carbide, waterproof 120 grit, (58536), A-A-1047</td>
<td>PG</td>
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<td>9</td>
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<td>5350-00-721-8117</td>
<td>Abrasive, paper, silicone carbide, waterproof 180 grit, (58536), A-A-1047</td>
<td>PG</td>
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Table 1. Expendable and Durable Items List - continued

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<tbody>
<tr>
<td>10</td>
<td>C</td>
<td>5350-00-224-7207 Abrasive, paper, silicone carbide, waterproof 240 grit, (58536), A-A-1047</td>
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<tr>
<td>11</td>
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<td>5350-00-224-7205 Abrasive, paper, silicone carbide, waterproof 280 grit, (58536), A-A-1047</td>
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<td>5350-00-224-7203 Abrasive, paper, silicone carbide, waterproof 320 grit, (58536), A-A-1047</td>
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<td>5350-00-224-7202 Abrasive, paper, silicone carbide, waterproof 360 grit, (58536), A-A-1047</td>
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<td>14</td>
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<td>5350-00-224-7201 Abrasive, paper, silicone carbide, waterproof 400 grit, (58536), A-A-1047</td>
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<td>15</td>
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<td>5350-00-224-7216 Abrasive, paper, silicone carbide, waterproof 500 grit, (58536), A-A-1047</td>
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<tr>
<td>16</td>
<td>C</td>
<td>5350-00-224-7215 Abrasive, paper, silicone carbide, waterproof 600 grit, (58536), A-A-1047</td>
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<tr>
<td>17</td>
<td></td>
<td>Not used</td>
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<tr>
<td>18</td>
<td>C</td>
<td>5350-01-326-9262 Abrasive, Grain, (80244), MIL-P-85891 (AS), type 5, grade A</td>
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<tr>
<td>19</td>
<td>C</td>
<td>- Accelerator, 611 for 610 filler Resin, Palmer Products Co. Inc. (or equiv)</td>
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<tr>
<td>20</td>
<td>C</td>
<td>6810-01-003-0262 Acetone, Technical, (81348) ASTM D329 (NOTE 3)</td>
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<td>21</td>
<td>C</td>
<td>8040-00-028-7098 Activator, Scotchcal A-2 Minnesota Mining and Materials Mfg. Co. (equiv)</td>
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<td>22</td>
<td>C</td>
<td>8040-00-273-8716 Adhesive, Bonding, MMM-A-121</td>
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<td>23</td>
<td>C</td>
<td>8040-00-142-9947 Adhesive, Velcro No. 40 (or equiv)</td>
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<td>24</td>
<td>C</td>
<td>8040-01-035-2845 Adhesive, EC2216, parts A and B, type 38, MMM-A-132</td>
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<td>25</td>
<td>C</td>
<td>8040-01-016-4726 Adhesive, Polyurethane, EC-3549 B/A (2 parts), Minnesota Mining and Materials Mfg. Co. (or equiv)</td>
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<td>26</td>
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<td>8040-00-018-7581 Adhesive, Pliogrip No. 3, Goodyear Tire and Rubber Co. (or equiv)</td>
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<td>8040-01-163-3481 Adhesive EA 9309 NA, Dexter Corp. (NOTE 5)</td>
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<td>28</td>
<td>C</td>
<td>8040-00-932-1945 Adhesive, EC-2216, Parts A and B, Minnesota Mining and Material Mfg. Co. (or equiv)</td>
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<td>29</td>
<td>C</td>
<td>8040-00-200-4390 Adhesive, EPON VI, MMM-A-134</td>
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<td>30</td>
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<td>8040-00-531-8030 Adhesive, EPON VIII, MMM-A-134</td>
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<td>31</td>
<td>C</td>
<td>8040-00-148-9849 Adhesive, Epocast 50-A, M &amp; T Chemicals, Inc. (or equiv)</td>
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<td>32</td>
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<td>8030-00-086-1506 Adhesive, EPON 828, Shell Chemical Co. (or equiv)</td>
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<td>33</td>
<td>C</td>
<td>8040-01-105-9100 Adhesive, ProSeal 719B-1/2, 719B-2, and 719B-4, Hexcel Co. (or equiv)</td>
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<td>C</td>
<td>8040-00-126-7798 Adhesive, ProSeal 501, Hexcel Co. (or equiv)</td>
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<td>8040-00-142-9721 Adhesive, PR1710, Products Research Corp. (or equiv)</td>
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<td>36</td>
<td>C</td>
<td>8030-01-058-9968 Adhesive, PR9021-B2 and PR9021-B4, Products Research Co. (or equiv)</td>
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<td>37</td>
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<td>8040-00-877-9872 Adhesive, RTV102, General Electric Corp. (or equiv), General Electric Corp. (or equiv) MIL-A-46106</td>
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<td>38</td>
<td>C</td>
<td>- Adhesive, Tereco No. 68, Technical Research Co. (or equiv)</td>
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<tr>
<td>39</td>
<td>C</td>
<td>8040-00-828-4936 Adhesive, Uralane 5716, Parts A and B, Furane Plastics (or equiv)</td>
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</table>
Table 1. Expendable and Durable Items List - continued

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<td>40</td>
<td>C</td>
<td>Not used</td>
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<tr>
<td>41</td>
<td>C</td>
<td>6810-00-823-8003 Alcohol, Denatured, O-E-760</td>
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<td>42</td>
<td>C</td>
<td>6810-00-855-6160 Alcohol, Isopropyl, Technical, TT-I-735, (81348)</td>
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<td>42.1</td>
<td>C</td>
<td>Aluminum sheet, 2024-T3</td>
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<td>43</td>
<td>C</td>
<td>6810-00-584-3793 Ammonium Hydroxide, Technical, O-A-451</td>
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<td>45</td>
<td>C</td>
<td>- Bake coating, EV 6174, Bee Chemical Co. (or equiv)</td>
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<td>46</td>
<td>C</td>
<td>8135-00-282-0565 Barrier material, water vapor proof, class I, MIL-B-131</td>
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<tr>
<td>47</td>
<td>C</td>
<td>- Beads, glass, vacu-blast, MIL-G-9954</td>
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<td>47.1</td>
<td>C</td>
<td>6850-01-450-6162 Cleaning Compound, Solvent, (OWU71)</td>
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<td>48</td>
<td>C</td>
<td>7920-00-514-2417 Brush, acid swabbing, A-A-289 (58536)</td>
</tr>
<tr>
<td>49</td>
<td>C</td>
<td>7920-00-054-7768 Brush, fiber, MIL-B-23958</td>
</tr>
<tr>
<td>50</td>
<td>C</td>
<td>7920-00-051-4384 Brush non-metalic, type 3, size 5-3/8 diameter, round arms, MIL-B-23958</td>
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<td>51</td>
<td>C</td>
<td>8530-01-293-1387 Brush, tooth, A-A-123, (58536)</td>
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<td>52</td>
<td>C</td>
<td>7510-00-550-8446 Brush, typewriter, style1, H-B-00681</td>
</tr>
<tr>
<td>53</td>
<td>C</td>
<td>5350-00-165-7145 Buffing compound, Learock No. 888, Lee Mfg. Co. (or equiv)</td>
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<tr>
<td>54</td>
<td>C</td>
<td>8040-00-526-1910 Catalyst, PS-18, Component B, MIL-A-8576</td>
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<td>55</td>
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<td>8135-00-582-5170 Cellophane, sheet, commercial grade, L-C-110</td>
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<td>56</td>
<td>C</td>
<td>8040-00-281-1972 Cement, EC 1128, Minnesota Mining and Mfg. Co. (or equiv)</td>
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<td>57</td>
<td>C</td>
<td>- Cement M6249, US Rubber Co. (or equiv)</td>
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<td>58</td>
<td>C</td>
<td>8030-00-714-3013 Cement, Pro Seal 590M, Hexcel Corp. (or equiv)</td>
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<tr>
<td>59</td>
<td>C</td>
<td>8040-00-526-1910 Cement, resin, PS-18, component A, MIL-A-8576</td>
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<td>60</td>
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<td>8305-00-267-3015 Cheesecloth, type 2, class B, CCC-C-440</td>
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<td>61</td>
<td>C</td>
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<tr>
<td>62</td>
<td>C</td>
<td>Chromic Acid Pickle Solution, type VI, MIL-M-3171</td>
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<tr>
<td>63</td>
<td>C</td>
<td>9920-00-292-9946 Cleaner, pipe, 840507</td>
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<tr>
<td>64</td>
<td>C</td>
<td>6850-01-181-0273 Cleaning compound, aircraft surface, alkaline water base, MIL-C-87936</td>
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<tr>
<td>65</td>
<td>C</td>
<td>6850-00-355-0985 Cleaning compound, windshield, Indosil 21, Indosil Co. (or equiv)</td>
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<tr>
<td>66</td>
<td>C</td>
<td>6850-01-224-0098 Cleaning compound, aircraft surface, MIL-C-43616</td>
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<tr>
<td>67</td>
<td>C</td>
<td>6850-01-235-0872 Cleaning Compound, Aircraft ,MIL-PRF-85570D, type II (QPL)</td>
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<td>68</td>
<td>C</td>
<td>6850-01-339-5227 Cleaning Compound, Aircraft, MIL-PRF-87937, type II</td>
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<td>6850-01-474-2319 Cleaning Compound, Solvent, (81349), type II, MIL-PRF-680</td>
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<td>70</td>
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<td>6850-01-399-0676 Cleaning Compound, Solvent (OXSOL 100)</td>
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<td>6850-01-458-8081 Cleaning Compound, Solvent, Desoclean, (85570) (NOTE 1)</td>
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<tr>
<td>72</td>
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<td>7930-01-367-0996 Cleaning Solvent, General Purpose, DS-108, (30256) (NOTE 2)</td>
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<td>8305-00-753-2967 Cloth, cleaning, CCC-C-46D</td>
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<td>Cloth, cleaning and polishing,</td>
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<td>7920-00-044-9281 Cloth, cleaning, low-lint (type II), A-A-59323, (58536)</td>
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<td>76</td>
<td>C</td>
<td>8305-00-191-3977 Cloth, cotton, airplane, MIL-C-5646</td>
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<td>Description</td>
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<td>8305-00-913-5817 Cloth, flannel, cotton (or equiv), A-A-50129, (58536)</td>
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<td>8305-00-530-0109 Cloth, glass, No. 181, MIL-C-9084</td>
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<td>8305-00-503-6961 Cloth, glass, 181-150, MIL-C-9084</td>
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<td>- Hardener, Epoxide 206, Union Carbide Corp.</td>
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<td>9150-00-149-7431 Hydraulic fluid, fire-resistant, MIL-PRF-83282</td>
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<td>6850-00-139-5297 Rain repellent and/or parting agent, Vydax-550, Du Pont E.I. De Nemours (or equiv), IL-W-006882</td>
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<td>8040-00-200-3793 Resin, paraplex (P-43) (or equiv), MIL-R-7575</td>
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<td>9535-00-416-8553 Screen 0.040-inch perforated grill, diamond pattern 0.5-inch wide x 0.75-inch long, Diamond Mfg. Co. (or equiv)</td>
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<td>8030-00-723-5345 Sealant, Pro Seal 700, Hexcel Corp. (or equiv)</td>
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<td>159</td>
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<td>8030-00-083-6523 Sealant, PR9021 A-1, A-2, and A-4</td>
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<td>8030-01-476-2255 Sealing compound, classes A and C, AMS-S-8802</td>
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<td>8030-01-361-1814 Sealing compound, (types I, II, and III) MIL-PRF-81733, (81349)</td>
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<td>8030-00-965-2437 Sealing compound, MIL-S-11030</td>
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<td>7920-01-068-1246 Sponge, Cellulose</td>
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<td>5350-00-240-2920 Wool, Metallic</td>
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<td>6640-01-399-1149 Tape, Blast, (0F6E2), P/N BT-100</td>
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<td>7510-00-846-8674 Tape, Pressure Sensitive Adhesive</td>
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<td>5640-00-103-2254 Tape, Duct</td>
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<td>7510-00-266-6707 Tape, Pressure-Sensitive Adhesive, A-A-883 (3” wide)</td>
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<td>7510-01-031-3129 Tape, Pressure-Sensitive Adhesive, (1 inch wide)</td>
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<td>7510-00-720-7516 Tape, Pressure-Sensitive Adhesive</td>
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<td>178</td>
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<td>7510-01-416-8859 Tape, Pressure-Sensitive Adhesive, A-A-113</td>
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<td>7510-01-300-2125 Tape, Pressure Sensitive Adhesive, (04963), P/N YR-500</td>
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<td>181</td>
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<td>8315-01-035-7308 Fastener Tape, Pile</td>
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<td>9330-00-993-1606 Plastic Sheet</td>
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<tr>
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<td>8010-00-181-8080 Thinner, Paint Products, MIL-T-81772 (NOTE 4)</td>
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Table 1. Expendable and Durable Items List - continued

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<th>Item</th>
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<td>Thinners, Paint (5A188) Solvent Blend MIL-T-81772 Type 2 Rev. (NOTE 4)</td>
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<td>Thread, cotton, 4 ply, size 10-3</td>
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<td>Recorder, Temperature, Model 110-3, 180-230 deg F</td>
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<td>Recorder, Temperature, PN 110-1, 100-150 deg F</td>
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<td>Tongue depressor (wood spatula), LLL-S-007.29</td>
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<td>Wheel, abrasive, no-woven nylon (class 2, type II), W-81319</td>
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NOTES

1. Desoclean 45, also known as P/N 02X413, NSN 6850-01-458-8081, is authorized as a drop in replacement for MEK in all aviation Technical Manuals and DMWRs. It has an allowable HAP with a vapor pressure of less than 45 mm Hg at 70 degrees F. If the DMWR or TM states to use MEK, then Desoclean 45 may be substituted for use. If the DMWR or TM states a chemical other than MEK, then Desoclean 45 is not authorized.

2. DS-108, NSN 7930-01-367-0994, is authorized as an MEK substitute for only the following applications: 1) cleaning prior to painting, 2) cleaning prior to applying sealants, and 3) cleaning prior to Fluorescent Penetrant Inspection. DS-108 does not contain HAPs and has a vapor pressure less than 7 mm Hg at 70 degrees F.

3. Acetone or Aliphatic Naphtha is authorized as an MEK substitute for cleaning prior to applying sealants, only. Acetone is to be used only for wipe cleaning of composite components because of possible debonding. Acetone is not to be used in cleaning polycarbonate/stretchable acrylic transparencies because of possible interactions. Acetone and Aliphatic Naphtha do not contain HAPs.

4. Thinner, MIL-T-81772, is authorized as an MEK substitute for cleaning prior to painting. MIL-T-81772 is a blend of MEK, MIBK, Acetates, Toluene, and Xylene. The thinner must have vapor pressure less than 45 mm Hg at 70 degrees F to the NESHAP requirements.

5. Adhesive, Item 27, is preferred for rotor blade repairs. Item 27 does not require the use of scrim cloth to prevent squeeze out. Item 27 contains beads that prevent it from being squeezed below the thickness of the beads.

END OF WORK PACKAGE
SCOPE

This work package lists, or provides references, for all tools required to perform work IAW this DMWR.

TOOL LISTING

A complete listing of all special tools and test equipment authorized for use during performance of maintenance on the CH-47D helicopter/accessories are listed in TM 55-1520-240-23, with the exception of the following:

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<th>NOMENCLATURE</th>
<th>PART NUMBER</th>
<th>CAGE</th>
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<tr>
<td>1</td>
<td>DRIVE SYSTEM ALIGNMENT CHECKING FIXTURE (WP 0148 00)</td>
<td>114G1168-2</td>
<td>77272</td>
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<td>2</td>
<td>ENGINE MOUNTS LOCATING FIXTURE ASSEMBLY (WP 0118 00)</td>
<td>114G1242-1</td>
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<td>3</td>
<td>CORROSION PREVENTION COMPOUND (CPC) APPLICATION EQUIPMENT (WP 0161 00)</td>
<td>2205RK</td>
<td>87267</td>
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<td>4</td>
<td>HYDRAULIC FLUID PURIFICATION APPERATUS (WP 0162 00)</td>
<td>PEO1078-12HW83</td>
<td>18350</td>
</tr>
</tbody>
</table>

END OF WORK PACKAGE
SCOPE

This work package defines conditions where it will be mandatory to replace aircraft parts.

MANDATORY PARTS REPLACEMENT

 Replacement of parts during the overhaul process is based on Pre-Shop Analysis findings, using serviceability criteria defined by this DMWR and referenced technical manuals. Under certain conditions, the Procuring Agency/Contracting Officer will specifically require replacement of certain parts or components based on past experience and projected end item usage. Mandatory parts replacement will fall into the following categories:

1. Part or component is unserviceable based on Pre-Shop Analysis findings.
2. Part or component is outside of Overhaul and Retirement Schedule – Refer to WP 0151 00.
3. Part or component does not meet aircraft transfer criteria – Refer to WP 0003 00.
4. Procuring Agency/Contracting Officer directs that part or component be replaced.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CRITICAL SAFETY ITEMS AND FLIGHT SAFETY CRITICAL AIRCRAFT PARTS

SCOPE
This DMWR incorporates the U.S. Army Aviation and Missile Command (AMCOM) Flight Safety Parts (FSP) Program. The purpose of the program is to provide enhanced life cycle management and control of parts critical to the safe operation of the aircraft. Specifics of the program are in AMCOM Reg 702-7. Appendix D of the Reg describes the minimum level of activity that is required by the Maintenance and Overhaul Facility for FSP’s, wherein the Facility affects or involves the Critical Characteristics (CC’s) associated with the FSP. The program requirements are intended to establish and maintain the integrity of the CC’s throughout the maintenance and overhaul process.

DEFINITIONS

Flight Safety Part, (Aircraft and Components)
Any part, assembly, or installation containing a CC whose failure, malfunction, or absence, could cause loss of, or serious damage to the aircraft, and/or serious injury or death to the occupants.

Flight Safety Part, (Engine)
Any part, assembly, or installation containing a CC whose failure, malfunction, or absence could cause an uncommanded engine shut down, and/or an uncontained engine failure resulting in loss of, or serious damage to the aircraft, and/or serious injury or death to the occupants.

Critical Characteristic
Any feature throughout the life cycle of a FSP, such as dimension, finish, material, assembly, manufacturing or inspection process, installation, operation, field maintenance, or depot overhaul requirement which if nonconforming, missing or degraded could cause the failure or malfunction of the FSP.

Approved Source
A manufacturer or vendor who has satisfied, prior to contract award, all AMCOM source approval requirements as set forth in the Competition Advocate’s Shopping List (CASL) to include, if applicable, engineering testing requirements (fatigue, endurance, and/or interchangeability).

Contractor
Any company or Government owned and operated depot performing maintenance and overhaul for AMCOM.

FLIGHT SAFETY PARTS POLICY
To maintain the integrity and quality of FSP, components, sub-assemblies, and assemblies undergoing maintenance and overhaul, contractors providing such services are required to adhere to the requirements of AMCOM Reg 702-7, in its entirety. If a contractor has difficulty in maintaining process control, as evident through such things as internal management audits, customer audits, the receipt of quality deficiency reports for parts previously supplied to AMCOM et.al., this will require immediate corrective action for the current contract and could affect the award of future contracts.

FLIGHT SAFETY PARTS LISTING
See Table 1 for current “Installation Critical” FSP’s listing for the CH-47D Helicopter. For complete listing of all FSP’s, refer to the AMCOM maintained CSI/NST Database.
REQUIREMENTS

All requirements of AMCOM Reg 702-7, Appendix D, paragraphs 6.1 – 6.7, shall be complied with by a contractor receiving a contract for maintenance and overhaul of FSP’s. If a process or processes that involve a CC is subcontracted, this requirement must be imposed, in it entirety, on the subcontractor performing the work. If, during maintenance and overhaul, replacement parts are required that are not identified on the repair parts lists, the contractor will contact the Contracting Officer for instructions on how to procure these parts.

PLANNING

Plan Content
Each maintenance and overhaul process affecting a FSP CC as identified in the DMWR or other AMCOM authorized maintenance and overhaul procedure must be controlled by detailed procedures outlining each step or parameter of the process along with any required materials, tooling, equipment, or operator certification. All procedures must be clearly defined and the values of characteristics recorded as applicable. Plans shall clearly define sequence of operation, machine type, and accept/reject limits for the specific process or operation. Critical process not easily verified shall clearly define process operating parameters with tolerances. Plans shall clearly identify all CC’s.

Frozen Planning Requirements
The Depot/contractor is responsible for developing maintenance and overhaul planning. Review and control of these plans will be the responsibility of the Contractor Control Board (CCB) consisting of qualified personnel equipped with adequate resources to assure development of complete, reliable, and traceable documentation. Parts maintained and overhauled utilizing these plans shall meet all contractual requirements. Plans developed for the maintenance and overhaul of FSP shall be frozen at the time the Product Verification Audit (PVA) is approved by the Government, or when a PVA is not required, prior to induction of the first maintenance and overhaul asset. Once frozen, plans shall remain frozen throughout the existing contract and all subsequent contracts for maintenance and overhaul of the item unless changes to the planning are made IAW this standard. In addition, all plans shall be made available to the Government at any time upon request. For future contracts, verification of the currency of this planning will also be required at the time of bid submission if specified in the solicitation.

Changes to Frozen Planning
Frozen maintenance and overhaul planning pertaining to a CC shall not be changed without prior CCB recommendation, justification to AMCOM, and receipt of approval by the Contracting Officer. Changes occurring as the result of an AMCOM approved Engineering Change Proposal (ECP), or AMCOM Engineering Directive (AED) requires CCB approval only. All changes to frozen planning affecting CCs will be submitted to AMCOM for approval. When the item, CC, or process is accomplished by a subcontractor, the planning shall be reviewed and approved by the contractor, and be subject to the same restrictions as above. Changes to frozen planning not effecting CCs require only CCB approval.

AUDITS
Contractors are to perform self-audits of their frozen planning when that planning applies to CCs produced or verified in house. At a minimum, audits will be performed at the start of each maintenance and overhaul contract, annually, and when process changes occur. It is incumbent upon the contractor to assure that subcontractors accomplish self-audits, and maintain records verifying their vendors are in full compliance with the audit requirement. All audit findings will be recorded and corrective action will be documented.

CRITICAL CHARACTERISTICS

Inspection of Critical Characteristics
All CCs which can be nondestructively inspected shall be subjected to 100 percent inspection by the contractor or subcontractor. However, assemblies containing CCs need only be disassembled to the extent required by the statement of work to return the assemblies to a serviceable condition. In these cases, inspection of CCs is not necessary. CCs which require destructive testing are to be tested on a lot or batch basis, with no skip lots.
Inspection of Critical Characteristics - continued

allowed. All completed work instructions shall identify the FSP part number, serial or lot number, and characteristic inspected. CCs shall be identified on the work instruction in such a manner as to draw attention to them. Work instructions shall reflect the exact readings or dimensions, date of inspection, identity of inspector, and any required inspection certification. These requirements are in addition to other contractual requirements.

Nonconforming Critical Characteristics
Nonconformances of CCs shall not be dispositioned “use as is” or “repair” through contractor actions. Rework to DMWR or other AMCOM approved procedures are acceptable. Waivers or deviations may be requested as specified in the contract. Request for waivers/deviations of CCs shall be classified as critical and will be forwarded to AMCOM for approval/disapproval.

Contradictory Critical Characteristics
Contradictions between the DMWR or other AMCOM approved procedures shall be brought to the attention of the Contracting Officer immediately and any work pertaining to the CC in question shall be stopped until a written resolution to the contradiction is issued to the contractor by the Contracting Officer.

Delivered Non-conformances
Contractors shall notify the Contracting Officer immediately of any discovered nonconformances that may exist in previously delivered FSP. Notification is required whether the characteristic in question has been classified as a CC or not. Notification shall include a description of the suspected nonconformance, contract number, part number, and affected serial numbers, or lot number, when applicable.

RECORDS

Traceability of Records
All records relating to FSP shall be traceable to the date and place of maintenance and overhaul. Records shall provide the degree of traceability required to enable subsequent verification of all aspects of material, manufacture, special process, personnel certification, variability control charts (if applicable), assembly, and inspection of CCs. Special processes include, but are not limited to, heat treat, shotpeening, and nondestructive inspection.

Purchasing Records
All purchase orders for subcontracted products or processes that contain CCs must clearly identify the CC, reference AMCOM Reg 702-7 for compliance. All documents and referenced data for FSP shall be available for review by the Government to determine compliance.

Retention of Records
The contractor shall retain copies of all records generated pursuant to this standard and make these records available to the Government upon request. Records shall be retained for a period of five years after the contractor ceases the maintenance and overhaul process of the part for which this standard applies. At the end of this period or in the event of relocation or shutdown, all records shall be offered to the Contracting Officer prior to disposal.

CERTIFICATION OF PERSONNEL

Contractor personnel performing work or having inspection responsibilities pertaining to CCs, shall be certified to the appropriate professional level as outlined in the applicable national standards, best commercial practices, or as contractually required. A system for tracking personnel certification shall be an element in the contractor internal audit program to assure all certifications are maintained in a current status.
MEASUREMENT AND TEST EQUIPMENT

Calibration
Calibration of inspection equipment shall be IAW contractual requirements. All aspects of the supplier’s calibration confirmation system shall be subject to Government verification at unscheduled intervals. The supplier's measurement and test equipment and shall be made available for use by the Government, as needed. All measuring equipment that is used to measure CCs shall be monitored for effectiveness and reproducibility. A recommended method is provided in ISO 10012-1.

Tolerance
Measurement and test equipment used to inspect FSPs must be discriminate to within 10 percent of the total tolerance for the feature being inspected except for tolerances less than 0.001-inch. Measurement and test equipment must be discriminate to 20 percent of the total tolerance for the feature being inspected when tolerance is less than 0.001-inch.

GOVERNMENT FURNISHED MATERIAL
When material is furnished by the Government, the contractor’s procedures shall include, as a minimum, the following:

1. Examination upon receipt to detect damage in transit.
2. Inspection for completeness and proper type.
3. Periodic inspection and precautions to assure adequate storage conditions are maintained, and to guard against damage from handling and deterioration during storage.
4. Functional testing, either prior to or after installation, or both, as required by contract to determine satisfactory operation.
5. Identification and protection from improper use or disposition.
6. Verification of quality.
7. Damaged/nonconforming Government Furnished Material shall be identified as such and is to be segregated in a secure area pending Government disposition instructions.

<table>
<thead>
<tr>
<th>PART NUMBER / CAGEC</th>
<th>DASH NUMBER (S)</th>
<th>NOMENCLATURE</th>
<th>CRITICAL CHARACTERISTIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>114C1013 (77272)</td>
<td>-1, -3 thru –7</td>
<td>Link Assembly, Connecting</td>
<td>1. Proper installation of bolt, nut, washers, and cotter pins</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2. Proper installation of rivet</td>
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<td></td>
<td>3. Proper installation of rod end jam nuts</td>
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<td></td>
<td>4. Torque</td>
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</tbody>
</table>
Table 1. Flight Safety “Installation” Critical Aircraft Parts – CH-47D - continued

<table>
<thead>
<tr>
<th>PART NUMBER / CAGEC</th>
<th>DASH NUMBER (S)</th>
<th>NOMENCLATURE</th>
<th>CRITICAL CHARACTERISTIC</th>
</tr>
</thead>
</table>
| 114C1014 (77272)   | -1, -2, -3, -16, -21, -22 | Link Assembly, Connecting | 1. Current installation of link assembly  
2. Installation critical  
3. Jam nuts installed and torque  
4. Proper installation of bolt, nut, washers, and cotter pins  
5. Proper installation of rivet  
6. Proper installation of rod end, solid section attachments, link assembly and rod end jam nuts  
7. Torque |
| 114C1016 (77272)   | -1, -2          | Link Assembly | 1. Installation of jam nuts  
2. Proper installation of bolt, nut, washers, and cotter pins  
3. Rivet secure  
4. Torque |
| 114C1110 (77272)   | -1, -2          | Support, Assembly | Installation critical |
| 114C1111 (77272)   | -1              | Support Assembly | Installation critical |
| 114C1112 (77272)   | -6, -7          | Support Assembly, Brake | Installation critical |
| 114C1113 (77272)   | -4              | Support Assembly | Installation critical |
| 114C1114 (77272)   | -1              | Support Assembly | Installation critical |
| 114C1120 (77272)   | -1              | Shaft, Pedal Post Support | 1. Proper installation of bolt, nut, washers, and cotter pins  
2. Shafts and mating components at same location  
3. Torque |
| 114C1122 (77272)   | -1, -2          | Post Assembly, LH and RH | 1. Installation critical  
2. Proper installation of impedance bolt, plate guide, pin and lever return spring, eye bolt, and pedal pivot shafts  
3. Proper installation of locking pin and mating drive arm |
| 114C1145 (77272)   | -1              | Shaft          | 1. Proper installation of AN320-6 nut  
2. Proper installation of spacers, washers, and bushings |
Table 1. Flight Safety “Installation” Critical Aircraft Parts – CH-47D - continued

<table>
<thead>
<tr>
<th>PART NUMBER / CAGEC</th>
<th>DASH NUMBER (S)</th>
<th>NOMENCLATURE</th>
<th>CRITICAL CHARACTERISTIC</th>
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<tbody>
<tr>
<td>114C1182 (77272)</td>
<td>-1</td>
<td>Link Assembly, Thrust Control</td>
<td>1. Proper installation of bearings and spacer&lt;br&gt;2. Proper installation of bolt, nut, washers, and cotter pins&lt;br&gt;3. Proper orientation of link assembly&lt;br&gt;4. Torque</td>
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<tr>
<td>114C1217 (77272)</td>
<td>-1</td>
<td>Shaft Assembly, Support</td>
<td>1. Proper installation of bolt, nut, washers, and cotter pins&lt;br&gt;2. Proper installation of MS17826-4 nut&lt;br&gt;3. Proper installation of spacers, washers, and bushings&lt;br&gt;4. Torque</td>
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<tr>
<td>114C3010 (77272)</td>
<td>-25, -26, -27,</td>
<td>Connecting Link, Rigid</td>
<td>1. Installation critical&lt;br&gt;2. Proper application of Albi fire retardant coatings&lt;br&gt;3. Proper installation of rivet, roll pin, rod end insert, rod end jam nuts, bushings, bolt, nut washers, bonding jumper clamp and cotter pins&lt;br&gt;4. Torque</td>
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<td>-29, -31, -32,</td>
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<td>114C3043 (77272)</td>
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<td>Yoke Assembly</td>
<td>1. Proper installation of flange and slip bushings, bearings and spacer, bolt, nut, washers, countersink washers, and cotter pins&lt;br&gt;2. Torque</td>
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<td>114C3314 (77272)</td>
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<td>Shaft</td>
<td>1. Assembly contains FSP&lt;br&gt;2. Proper installation of spacers, washers, bushings, bolt, nut, cotter pins, and MS21025-20 nut&lt;br&gt;3. Torque</td>
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<tr>
<td>114C3316 (77272)</td>
<td>-20</td>
<td>Bellcrank Assembly</td>
<td>1. Bellcrank hub bearings are serviceable and properly installed&lt;br&gt;2. Proper installation of all bushings&lt;br&gt;3. Proper installation of bolt, nut, washers, and cotter pins&lt;br&gt;4. Torque</td>
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<tr>
<td>114C3318 (77272)</td>
<td>-20</td>
<td>Bellcrank Assembly</td>
<td>1. Bellcrank hub bearings are serviceable and properly installed&lt;br&gt;2. Proper installation of all bushings&lt;br&gt;3. Proper installation of bolt, nut, washers, and cotter pins&lt;br&gt;4. Torque</td>
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</table>
Table 1. Flight Safety “Installation” Critical Aircraft Parts – CH-47D - continued

<table>
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<th>PART NUMBER / CAGEC</th>
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<td>114C3319 (77272)</td>
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<td>Bellcrank Assembly</td>
<td>1. Bellcrank hub bearings are serviceable and properly installed</td>
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<td>2. Proper installation of all bushings</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>4. Torque</td>
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<tr>
<td>114C3320 (77272)</td>
<td>-22</td>
<td>Bellcrank Assembly</td>
<td>1. Bellcrank hub bearings are serviceable and properly installed</td>
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<td>2. Proper installation of all bushings</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>4. Torque</td>
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<td>114C3324 (77272)</td>
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<td>Bellcrank Assembly</td>
<td>1. Bellcrank hub bearings are serviceable and properly installed</td>
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<td>2. Proper installation of all bushings</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<tr>
<td>114C3325 (77272)</td>
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<td>Bellcrank Assembly</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>114C3327 (77272)</td>
<td>-24</td>
<td>Connecting Link</td>
<td>1. Bearings are properly staked</td>
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<td>Assembly</td>
<td>2. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>3. Torque</td>
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<tr>
<td>114C3328 (77272)</td>
<td>-20</td>
<td>Link Assembly</td>
<td>1. Bearings are properly staked</td>
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<td>2. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>3. Torque</td>
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<tr>
<td>114C3410 (77272)</td>
<td>-1</td>
<td>Beam Assembly,</td>
<td>1. Proper installation of bearings, locating pads, slip bushings, bolts, nuts, washers,</td>
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<td></td>
<td></td>
<td>Walking</td>
<td>and cotter pins</td>
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<td>2. Torque</td>
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<tr>
<td>114C3411 (77272)</td>
<td>-6</td>
<td>Idler Assembly</td>
<td>1. Ensure hub bearings are serviceable and properly installed</td>
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<td></td>
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<td></td>
<td>2. Insure proper clearance on top side of all idler assemblies</td>
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<td></td>
<td>3. Proper installation of flanged bushings, bolt, nut, washers, and cotter pins</td>
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<td>4. Torque</td>
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<tr>
<td>PART NUMBER / CAGEC</td>
<td>DASH NUMBER (S)</td>
<td>NOMENCLATURE</td>
<td>CRITICAL CHARACTERISTIC</td>
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</tbody>
</table>
| 114CS110 (77272)   | -2, -4, -6     | Damper, Viscous | 1. Correct damper and damper arm assembly properly installed  
2. Proper installation of all mounting hardware |
| 114D3053 (77272)   | -1             | Bolt, Internally Relieved | Installation critical |
| 114H6800 (77272)   | -5, -9, -11    | Shock Absorber, Blade Lag | 1. Assembly contains FSP  
2. Installation critical  
3. Proper installation of bushings and positive retention bolts |
| 114R1702 (77272)   | -37, -38       | Blade Assembly, Rotary Wing | 1. Proper installation of blade with specified blade sling, and vertical pin with pin reaction adapter set  
2. Proper installation of upper and lower vertical pins and vertical pin nuts |
| 114R2096 (77272)   | -2             | Bushing, Sleeve | Proper installation of bushings and positive retention bolts |
| 114R2172 (77272)   | -1             | Pin, Vertical Hinge | 1. Evidence of inspection accomplishment must be maintained on file (magnetic particle inspection, eddy current and fluorescent penetrant inspection)  
2. No MRB action permitted below minimum Rockwell Hardness  
3. Proper installation of blade with specified blade sling; vertical pin with pin reaction adapter set  
4. Proper installation of upper and lower vertical pins and vertical pin nuts |
| 114R3116           | -38, -45, -46  | Bearing, Sleeve | Proper installation of shoulder bushing, sliding bushing, and impedance bolt |
| 114R3433 (77272)   | -1, -5, -7, -9 | Drive Arm Assembly, Lower | 1. Assembly contains FSP’s  
2. Proper installation of bushings, bearings, sliding bushing, impedance bolt, and or positive retention bolt |
| 114R3434 (77272)   | -1, -5, -7, -9 | Drive Arm Assembly, Upper | 1. Assembly contains FSP’s  
2. Proper installation of shoulder bushing, sliding bushing, and impedance bolt |
| 114R3610 (77272)   | -1             | Turnbuckle | Installation critical |
| 114R3611 (77272)   | -1, -2, -3, -4 | Link Assembly, Forward | 1. Assembly contains FSP’s  
2. Proper installation of upper and lower pitch link rod ends, bushings, serrated bushings, and positive retention bolts |
<table>
<thead>
<tr>
<th>PART NUMBER / CAGEC</th>
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<th>NOMENCLATURE</th>
<th>CRITICAL CHARACTERISTIC</th>
</tr>
</thead>
</table>
| 114R3650 (77272)    | -6, -7, -9, -11, -13, -15, -16 | Bolt Assembly             | 1. Assembly contains FSP’s  
2. No MRB action permitted below minimum Rockwell Hardness  
3. Proper installation of upper and lower pitch link rod ends, bushings, serrated bushings, and positive retention bolts |
| 114RS352 (77272)    | -2             | Bolt, Self-Retaining      | 1. No MRB action permitted below minimum Rockwell Hardness  
2. Proper installation of upper and lower pitch link rod ends, bushings, serrated bushings, and positive retention bolts |
| 114S3881 (77272)    | -1             | Support Assembly, Beam    | Installation critical                                                                                                                                     |
| 114S3882 (77272)    | -1             | Support Assembly, Beam    | Installation critical                                                                                                                                     |
| 114S3883 (77272)    | -5             | Support Assembly          | Installation critical                                                                                                                                     |
| 145C1014 (77272)    | -9             | Link Assembly, Connecting | 1. Proper installation of bolt, nut, washers, and cotter pins  
2. Proper installation of rivet  
3. Proper installation of rod end, solid section attachments, link assembly, and rod end jam nuts  
4. Torque |
| 145C1290 (77272)    | -1             | Detent Assembly           | Installation critical                                                                                                                                     |
| 145C1306 (77272)    | -1             | Control Assembly, Cyclic  | 1. Proper installation of bolt, nut, washers, and cotter pins  
2. Proper installation of elbow assembly, cyclic grip assembly, rubber grommet, and connector  
3. Torque |
| 145C1330 (77272)    | -1             | Bellcrank Assembly        | 1. Bearings serviceable and properly installed  
2. Bushings properly installed  
3. Proper installation of bellcrank  
4. Proper installation of bolt, nut, washers, and cotter pins  
5. Torque |
| 145C1331 (77272)    | -1             | Bellcrank Assembly        | 1. Bearings serviceable and properly installed  
2. Bushings properly installed  
3. Proper installation of bellcrank  
4. Proper installation of bolt, nut, washers, and cotter pins  
5. Torque |

Table 1. Flight Safety “Installation” Critical Aircraft Parts – CH-47D - continued
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<th>PART NUMBER / CAGEC</th>
<th>DASH NUMBER (S)</th>
<th>NOMENCLATURE</th>
<th>CRITICAL CHARACTERISTIC</th>
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</table>
| 145C1332 (77272)   | -1             | Bellcrank Assembly | 1. Bearings serviceable and properly installed  
|                     |                |              | 2. Bushings properly installed  
|                     |                |              | 3. Proper installation of bellcrank  
|                     |                |              | 4. Proper installation of bolt, nut, washers, and cotter pins  
|                     |                |              | 5. Torque |
| 145C1333 (77272)   | -1             | Bellcrank Assembly | 1. Bearings serviceable and properly installed  
|                     |                |              | 2. Bushings properly installed  
|                     |                |              | 3. Proper installation of bellcrank  
|                     |                |              | 4. Proper installation of bolt, nut, washers, and cotter pins  
|                     |                |              | 5. Torque |
| 145C1375 (77272)   | -1             | Control Installation, Thrust | 1. Bushings properly installed  
|                     |                |              | 2. Proper installation of ball slide assembly, thrust grip assembly, grip wire bundle, clamping arrangement, and connector  
|                     |                |              | 3. Proper installation of grip wire bundle  
|                     |                |              | 4. Proper installation of pivot hardware, thrust lever attaching hardware, and sealant over cotter pin sharp edges  
|                     |                |              | 5. Torque |
| 145C1409 (77272)   | -1             | Idler Assembly, Yaw | 1. Bearings serviceable and properly installed  
|                     |                |              | 2. Bushings properly installed  
|                     |                |              | 3. Proper installation of bolt, nut, washers, and cotter pins  
|                     |                |              | 4. Torque |
| 145C1410 (77272)   | -1             | Idler Assembly, Pitch | 1. Bearings serviceable and properly installed  
|                     |                |              | 2. Bushings properly installed  
|                     |                |              | 3. Proper installation of bolt, nut, washers, and cotter pins  
|                     |                |              | 4. Torque |
| 145C1411 (77272)   | -1             | Idler Assembly, Roll | 1. Bearings serviceable and properly installed  
|                     |                |              | 2. Bushings properly installed  
|                     |                |              | 3. Proper installation of bolt, nut, washers, and cotter pins  
|                     |                |              | 4. Torque |
| 145C1413 (77272)   | -1, -3         | Support Assembly | Installation critical |
Table 1. Flight Safety “Installation” Critical Aircraft Parts – CH-47D - continued

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</table>
| 145C1414 (77272)    | -1              | Support Assembly, Control        | 1. Bushings properly installed  
                              |                  |                                                 | 2. Proper installation of bolt, nut, washers, and cotter pins  
                              |                  |                                                 | 3. Torque                                                      |
| 145C1415 (77272)    | -1, -2          | Connecting Link, Rigid           | 1. Bearing properly staked  
                              |                  |                                                 | 2. Proper installation of bolt, nut, washers, and cotter pins  
                              |                  |                                                 | 3. Proper installation of flanged and straight slip bearings  
                              |                  |                                                 | 4. Proper installation of rivet  
                              |                  |                                                 | 5. Proper installation of rod end jam nuts  
                              |                  |                                                 | 6. Torque                                                      |
| 145C1420 (77272)    | -1, -2          | Connecting Link Assembly         | 1. Bearing properly staked  
                              |                  |                                                 | 2. Proper installation of bolt, nut, washers, and cotter pins  
                              |                  |                                                 | 3. Proper installation of flanged and straight slip bushings  
                              |                  |                                                 | 4. Torque                                                      |
| 145C1450 (77272)    | -1              | Spring Assembly, Roll            | 1. Bearing properly staked  
                              |                  |                                                 | 2. Proper installation of bolt, nut, washers, and cotter pins  
                              |                  |                                                 | 3. Proper installation of lockwire  
                              |                  |                                                 | 4. Proper installation of roll spring  
                              |                  |                                                 | 5. Proper installation of threaded end cap  
                              |                  |                                                 | 6. Torque                                                      |
| 145C1456 (77272)    | -1              | Spring Assembly, Yaw             | 1. Bearing properly staked  
                              |                  |                                                 | 2. Proper installation of bolt, nut, washers, and cotter pins  
                              |                  |                                                 | 3. Proper installation of lock wire  
                              |                  |                                                 | 4. Proper installation of yaw spring  
                              |                  |                                                 | 5. Proper installation of threaded end cap  
                              |                  |                                                 | 6. Torque                                                      |
| 145C1457 (77272)    | -1              | Bellcrank                        | 1. Bearings serviceable and properly installed  
                              |                  |                                                 | 2. Proper installation of bolt, nut, washers, and cotter pins  
                              |                  |                                                 | 3. Proper installation of bushings  
                              |                  |                                                 | 4. Torque                                                      |
| 145C1458 (77272)    | -3              | Idler Assembly, Pitch            | Installation critical                                           |
Table 1. Flight Safety “Installation” Critical Aircraft Parts – CH-47D - continued

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</tr>
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</table>
| 145C1459 (77272)    | -1              | Idler Assembly | 1. Idler hub bearings are serviceable and properly installed  
|                     |                 |              | 2. Proper installation of bolt, nut, washers, and cotter pins  
|                     |                 |              | 3. Proper installation of bushings  
|                     |                 |              | 4. Torque |
| 145C1463 (77272)    | -1              | Link Assembly | 1. Bellcrank hub bearings are serviceable and properly installed  
|                     |                 |              | 2. Proper installation of bolt, nut, washers, and sleeve assembly  
|                     |                 |              | 3. Proper installation of lower bearing and sleeve assembly  
|                     |                 |              | 4. Torque |
| 145C1471 (77272)    | -1              | Spring Assembly, Pitch | 1. Bearing properly staked  
|                     |                 |              | 2. Proper installation of bolt, nut, washers, and cotter pins  
|                     |                 |              | 3. Proper installation of lock wire  
|                     |                 |              | 4. Proper installation of pitch spring and threaded end cap  
|                     |                 |              | 5. Torque |
| 145C2010 (77272)    | -10, -11, -12, -13, -14, -15, -16, -17 | Connecting Link, Rigid | 1. Installation critical  
|                     |                 |              | 2. Proper application of Albi Fire Retardant Coatings  
|                     |                 |              | 3. Proper installation of rod end jam nuts, rivet, roll pin, associated hardware, bolt, nut, washers, and cotter pins  
|                     |                 |              | 4. Torque |
| 145C2013 (77272)    | -3, -4          | Connecting Link, Rigid | 1. Proper installation and orientation of rod end jam nuts, rivet, roll pin, associated hardware, bolt, nut, washers, and cotter pins  
|                     |                 |              | 2. Torque |
| 145C2510 (77272)    | -1, -4          | Bellcrank Assembly | Installation critical |
| 145C2511 (77272)    | -1              | Bellcrank Assembly | 1. Proper installation of bushings, bearings, bellcrank assembly orientation, bolt, nut, washers, and cotter pins  
|                     |                 |              | 2. Torque |
| 145C2512 (77272)    | -1              | Bellcrank | 1. Proper installation of bushings, bearings, bellcrank assembly orientation, bolt, nut, washers, and cotter pins  
<p>|                     |                 |              | 2. Torque |</p>
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<tbody>
<tr>
<td>145C2513 (77272)</td>
<td>-3</td>
<td>Bellcrank Assembly, Aft</td>
<td>Installation critical</td>
</tr>
</tbody>
</table>
| 145C2514 (77272) | -1             | Bellcrank Assembly | 1. Proper installation of bushings, bearings, bellcrank assembly orientation, bolt, nut, washers, and cotter pins  
2. Torque |
| 145C2515 (77272) | -1             | Bellcrank Assembly | 1. Proper installation of bushings, bearings, bellcrank assembly orientation, bolt, nut, washers, and cotter pins  
2. Torque |
| 145C2516 (77272) | -9, -12        | Bellcrank Assembly | Installation critical |
| 145C3050 (77272) | -3             | Bellcrank, Aft Longitudinal | 1. Assembly contains FSP’s  
2. Hub bearings and spacer are properly installed and serviceable  
3. Proper installation of bolt, nut, washers, and cotter pins  
4. Proper installation of flange and slip bushings  
5. Torque |
| 145C3051 (77272) | -1             | Yoke Assembly | 1. Bake after chromium plating  
2. No MRB action permitted below minimum Rockwell Hardness  
3. Proper installation of washer, cotter pin, and NAS 75-20-206 bushing  
4. Shot peen set up approval required  
5. Torque |
| 145C3110 (77272) | -1             | Shaft, Shouldered | 1. Bellcrank hub bearings are serviceable and properly installed  
2. Proper installation of all bushings  
3. Proper installation of bolt, nut, washers, and cotter pins  
4. Torque |
| 145C3111 (77272) | -1             | Bellcrank Assembly | 1. Bellcrank hub bearings are serviceable and properly installed  
2. Proper installation of all bushings  
3. Proper installation of bolt, nut, washers, and cotter pins  
4. Torque |
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<td>1. Bellcrank hub bearings are serviceable and properly installed</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>145C3122</td>
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<td>145C3171</td>
<td>(77272)</td>
<td>Bellcrank Assembly</td>
<td>1. Bearings are properly staked</td>
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<td>145C3172</td>
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<td>Connecting Link, Rigid</td>
<td>1. Bellcrank hub bearings are serviceable and properly installed</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>145C3221</td>
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<td>1. Bellcrank hub bearings are serviceable and properly installed</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>145C3230</td>
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<td>1. Bellcrank hub bearings are serviceable and properly installed</td>
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<td>2. Proper installation of all bushings, and input/output arms</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<tr>
<td>145C3231</td>
<td>(77272)</td>
<td>Bellcrank Assembly</td>
<td>1. Bellcrank hub bearings are serviceable and properly installed</td>
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<td>2. Proper installation of bolt, bushings, nut, washers, and cotter pins</td>
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<td>3. Torque</td>
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<td>145C3265</td>
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<td>2. Proper installation of rod end jam nuts, and rivet</td>
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<td>3. Torque</td>
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<tr>
<td>145C3266</td>
<td>(77272)</td>
<td>Support Assembly, Forward Pylon</td>
<td>Proper installation of bushings, dowel pins, bolt, nut, washers, and cotter pin</td>
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<td>145C3313</td>
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<td>Shaft, Shouldered</td>
<td>Proper installation of spacers, washers, bushings, and 145C3333-1 nut</td>
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<td>145C3317</td>
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<td>Bellcrank Assembly</td>
<td>1. Bellcrank hub bearings are serviceable and properly installed</td>
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<td>2. Proper installation of all bushings</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>4. Torque</td>
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<tr>
<td>145C3360</td>
<td>-3</td>
<td>Connecting Link, Rigid</td>
<td>Installation critical</td>
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<tr>
<td>145C3361</td>
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<td>Connecting Link, Rigid</td>
<td>Installation critical</td>
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<tr>
<td>145C3510</td>
<td>-1</td>
<td>Bellcrank, Assembly</td>
<td>1. Proper installation of bushings, bearings, bellcrank orientation, bolt, nut, washers, and cotter pins</td>
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<td>145C3516</td>
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<td>Bellcrank Assembly</td>
<td>1. Proper installation of bushings, bearings, bellcrank orientation, bolt, nut, washers, and cotter pins</td>
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<tr>
<td>145C6100</td>
<td>-1, -3</td>
<td>Actuator, Electro, Mechanical</td>
<td>1. Proper installation of actuator</td>
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<td>2. Proper installation of actuator mounting supports</td>
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<td>3. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>4. Proper installation of safety wire</td>
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<td>5. Torque</td>
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<tr>
<td>145CS101</td>
<td>-3, -4</td>
<td>Brake, Magnetic</td>
<td>1. Proper installation of bolt, nut, washers, and cotter pins</td>
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<td>2. Proper positioning of magnetic brake output arm</td>
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<tr>
<td>145CS114</td>
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<td>Actuator, Electro, Mechanical</td>
<td>1. Assembly contains FSP’s</td>
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<td>2. Proper installation of countersunk washers</td>
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<td>3. Proper installation of locking tab washer, wire bundle, bolt, nut, washers, and cotter pins</td>
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<td>6. Torque</td>
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</table>
| 145CS131 (77272)    | -2              | Transducer, Linear | 1. Proper installation of bolt, nut, washers, and cotter pins  
 2. Proper installation of safety wire  
 3. Rod end bearing assembly properly safetied  
 4. Torque |
| 145CS340 (77272)    | -1, -3, -5, -7, -9, -11, -13, -15, -17 | Connecting Link, Rigid | 1. Proper installation of rod end jam nuts, rivet secured, bushing, bonding jumper clamp, bolt, nut, washers, and cotter pins  
 2. Torque |
| 145CS360 (77272)    | -1, -2, -3, -4, -5 | Connecting Link, Rigid | 1. Installation critical  
 2. Proper installation of bolt, nut, washers, and cotter pins  
 3. Proper installation of rod end jam nuts and rivet  
 4. Torque |
| 145D3306 (77272)    | -5              | Support Assembly, Rotary Drive Shaft | Installation critical |
| 145D5300 (77272)    | -3, -5, -9, -11, -12, -13, -15, -16, -17, -20 | Combining Transmission Assembly | 1. Assembly contains FSP’s  
 2. Installation critical |
| 145DS022 (77272)    | -2, -4          | Bolt, Internally Relieved | 1. Proper installation of transmission  
 2. Proper torque of nuts  
 3. Torque of bolts |
| 145DS027 (77272)    | -4, -5, -6      | Pressure Switch, Lubricating | Installation critical |
| 145PS700 (77272)    | -1              | Aft Link Assembly, Engine | Installation critical |
| 145R2003 (77272)    | -1 thru –10     | Head, Rotary Wing | 1. Assembly contains FSP’s  
 2. Installation critical  
 3. Proper installation of lifting device, hub nut tang washer, retaining ring, and bushings  
 4. Torque |
| 145R2004 (77272)    | -1 thru –9, -11, -13, -15, -17 thru –20 | Head, Rotary Wing | 1. Assembly contains FSP’s  
 2. Installation critical  
 3. Proper installation of lifting device, hub nut tang washer, retaining ring, and bushings  
 4. Torque |
| 145R3116 (77272)    | -4, -5          | Bushing, Sleeve | Installation critical |
| 145R3120 (77272)    | -1, -2          | Bolt, Self-Locking | Proper installation of bushings and positive retention bolts |
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| 145R3438 (77272)    | -1, -5         | Collar Assembly, Drive        | 1. Assembly contains FSP’s  
2. Proper installation of bearings, bushings, sliding bushing, positive retention bolt, or impedance bolt  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145R3551 (77272)    | -1, -2, -5, -6, -11, -12 | Swashplate, Controllable     | 1. Assembly contains FSP’s  
2. Proper installation of bushings, impedance bolts, and or positive retention bolts  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145R3650 (77272)    | -1, -3, -4, -5, -6 | Bolt Assembly                 | 1. Assembly contains FSP’s  
2. Installation critical  
3. No MRB action permitted below minimum Rockwell Hardness  
4. Proper installation of bushings, impedance bolts, and or positive retention bolts  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145RS353 (77272)    | -1, -2         | Bolt Assembly                 | 1. No MRB action permitted below minimum Rockwell hardness  
2. Proper installation of bushings, bearings, sliding bushing, impedance bolts, and or positive retention bolts  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1109 (77272)    | -3             | Shaft                         | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1645 (77272)    | -1             | Right Tie Rod                 | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1646 (77272)    | -1             | Panel, Structural, Al         | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1830 (77272)    | -1             | Shaft Support Assembly        | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1831 (77272)    | -3             | Stop Fitting                  | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1871 (77272)    | -1             | Support Fitting               | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1872 (77272)    | -1             | Upper Support Fitting         | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1875 (77272)    | -1             | Support                       | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1877 (77272)    | -1             | Support, Intermediate Gearbox | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1880 (77272)    | -1             | Lower Support Fitting         | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
| 145S1892 (77272)    | -1             | Support Fitting               | Installation critical  
|                     |                |                                |                                                                                                                                                                                                                           |
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<td>145S3882 (77272)</td>
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<td>Support Assembly</td>
<td>Installation critical</td>
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<tr>
<td>234D6205 (77272)</td>
<td>-1</td>
<td>Nut, Self-Locking</td>
<td>Installation critical</td>
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<td>234R2088 (77272)</td>
<td>-1, -2</td>
<td>Pitch Shaft Assembly</td>
<td>1. Assembly contains FSP’s&lt;br&gt;2. Ensure rollers are in cages of pitch bearings&lt;br&gt;3. Proper installation of bearings, tie bar pins, retention hardware, and same pitch housing reinstalled</td>
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<tr>
<td>414C1123 (77272)</td>
<td>-1, -2</td>
<td>Arm Assembly, Pedal</td>
<td>1. Proper installation of plate and associated hardware&lt;br&gt;2. Proper installation of spring tab, bolt head orientation, and cotter pins&lt;br&gt;3. Torque</td>
</tr>
<tr>
<td>414C1130 (77272)</td>
<td>-1</td>
<td>Lever, Remote</td>
<td>1. Bearings serviceable and properly installed&lt;br&gt;2. Bushings properly installed&lt;br&gt;3. Proper installation of bolt, nut, washers, and cotter pins&lt;br&gt;4. Torque</td>
</tr>
<tr>
<td>414C1131 (77272)</td>
<td>-1</td>
<td>Bellcrank Assembly</td>
<td>1. Barrel nut and retainer properly installed&lt;br&gt;2. Bushings properly installed&lt;br&gt;3. Proper installation of bolt, nut, washers, and cotter pins&lt;br&gt;4. Torque</td>
</tr>
<tr>
<td>414C1141 (77272)</td>
<td>-1, -2</td>
<td>Bellcrank Assembly</td>
<td>1. Barrel nut and retainer properly installed&lt;br&gt;2. Bushings properly installed&lt;br&gt;3. Proper installation of bolt, nut, washers, and cotter pins&lt;br&gt;4. Torque</td>
</tr>
<tr>
<td>414C1150 (77272)</td>
<td>-1</td>
<td>Lever Assembly</td>
<td>1. Bushings properly installed&lt;br&gt;2. Proper installation of bolt, nut, washers, and cotter pins&lt;br&gt;3. Torque</td>
</tr>
<tr>
<td>414C1160 (77272)</td>
<td>-1, -2</td>
<td>Bellcrank Assembly</td>
<td>1. Bearings serviceable and properly installed&lt;br&gt;2. Bushings properly installed&lt;br&gt;3. Proper installation of bolt, nut, washers, and cotter pins&lt;br&gt;4. Shaft, spacers, plugs, and bushings properly installed&lt;br&gt;5. Torque</td>
</tr>
<tr>
<td>PART NUMBER / CAGEC</td>
<td>DASH NUMBER (S)</td>
<td>NOMENCLATURE</td>
<td>CRITICAL CHARACTERISTIC</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-------------------------</td>
</tr>
</tbody>
</table>
| 414C1161 (77272)   | -1             | Bellcrank Assembly | 1. Bearings serviceable and properly installed  
|                    |                |              | 2. Bushings properly installed  
|                    |                |              | 3. Proper installation of bolt, nut, washers, and cotter pins  
|                    |                |              | 4. Torque  |
| 414C1163 (77272)   | -1             | Bellcrank Assembly | Installation critical  |
| 414C1165 (77272)   | -1, -2         | Bellcrank Assembly | 1. Bearings serviceable and properly installed  
|                    |                |              | 2. Bushings properly installed  
|                    |                |              | 3. Proper installation of bolt, nut, washers, and cotter pins  
|                    |                |              | 4. Torque  
|                    |                |              | 5. Installation critical  |
| 414C1168 (77272)   | -1, -2         | Bellcrank Assembly | 1. Assure free rotation  
|                    |                |              | 2. Bearings serviceable and properly installed  
|                    |                |              | 3. Bushings properly installed  
|                    |                |              | 4. Hub bearings serviceable and properly installed  
|                    |                |              | 5. Proper installation of bolt, nut, washers, and cotter pins  
|                    |                |              | 6. Torque  |
| 414C2520 (77272)   | -3, -4         | Connecting Link, Rigid | 1. Proper installation of rod end jam nuts, rivet secured, bolt, nut, washers, and cotter pins  
|                    |                |              | 2. Torque  |
| 414C3056 (77272)   | -3, -4         | Link Assembly, Swashplate | 1. Assembly contains FSP’s  
|                    |                |              | 2. Installation of lockwire and cotter pins  
|                    |                |              | 3. Proper installation of locking tab washer  
|                    |                |              | 4. Proper routing and installation of wire bundle  
|                    |                |              | 5. Torque  |
| 414C3409 (77272)   | -1             | Arm, Control | Proper installation of bearings, locating pads, bolts, nuts, washers, and cotter pins  |
| AN173 (88044)      | -7, -7A        | Bolt, Close Tolerance | Installation critical  |
| AN174 (88044)      | 12, H23A, H24A | Bolt, Close Tolerance | Installation critical  |
| AN176 (88044)      | H7A, H11A      | Bolt, Close Tolerance | Installation critical  |
| BACB30FD (81205)   | 4H5, 5H5       | Bolt, Shear | Installation critical  |
Table 1. Flight Safety “Installation” Critical Aircraft Parts – CH-47D - continued

<table>
<thead>
<tr>
<th>PART NUMBER / CAGEC</th>
<th>DASH NUMBER (S)</th>
<th>NOMENCLATURE</th>
<th>CRITICAL CHARACTERISTIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>BACB30ST10 (16258)</td>
<td>-38, -40</td>
<td>Bolt, Self-Retaining</td>
<td>Installation critical</td>
</tr>
<tr>
<td>BACB30ST12 (56878)</td>
<td>-39</td>
<td>Bolt, Self-Retaining</td>
<td>Installation critical</td>
</tr>
<tr>
<td>BACB30ST8 (56878)</td>
<td>-31, -32, -35</td>
<td>Bolt, Self-Retaining</td>
<td>Installation critical</td>
</tr>
<tr>
<td>BACN10TR8 (81205)</td>
<td>--</td>
<td>Nut, Self-Locking</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-3 (80205)</td>
<td>-8, -11, -12, -16</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-4 (80205)</td>
<td>-8, -11, -12, -13, -15, -16, -17, -18, -19, -20, -21, -22, -24, -25, -27, -31, -32, -34, -35, -39, -43, -44</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-5 (80205)</td>
<td>-17, -20, -21, -22, -23, -24, -25, -26, -33, -35, -46, -47, -75, -81, -106</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-6 (80205)</td>
<td>-23, -25, -34, -43, -44, -46, -49, -75, -82</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-7 (80205)</td>
<td>-50, -51, -113</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-8 (80205)</td>
<td>-41, -46, -52, -65, -72</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-6 (80205)</td>
<td>-23, -25, -34, -43, -44, -46, -49, -75, -82</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-7 (80205)</td>
<td>-50, -51, -113</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-8 (80205)</td>
<td>-41, -46, -52, -65, -72</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>MS27576-9 (80205)</td>
<td>-21, -25</td>
<td>Bolt, Close Tolerance</td>
<td>Installation critical</td>
</tr>
<tr>
<td>NAS634 (80205)</td>
<td>-60</td>
<td>Bolt, Shear</td>
<td>Installation critical</td>
</tr>
</tbody>
</table>
### Table 1. Flight Safety “Installation” Critical Aircraft Parts – CH-47D - continued

<table>
<thead>
<tr>
<th>PART NUMBER / CAGEC</th>
<th>DASH NUMBER (S)</th>
<th>NOMENCLATURE</th>
<th>CRITICAL CHARACTERISTIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAS75-8 (80205)</td>
<td>-102</td>
<td>Bushing, Sleeve</td>
<td>Installation critical</td>
</tr>
<tr>
<td>NAS75-20</td>
<td>-123, -206</td>
<td>Bushing, Sleeve</td>
<td>Installation critical</td>
</tr>
</tbody>
</table>

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CORROSION PREVENTION COMPOUND (CPC) APPLICATION ON CH-47 AIRCRAFT

INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Corrosion Prevention Compound Application Equipment – Refer to Manufacturer’s Recommendations

Material/Parts:
Tape, Masking (Item 175, WP 0157 00)
Corrosion Prevention Compound (CPC) (Item 91, WP 0157 00)

Personnel Required:
As Required

SCOPE

WARNING

CORROSION PREVENTION COMPOUND

This work package describes application of Corrosion Preventive Compound (CPC), (Item 91, WP 0157 00), to the CH-47D Helicopter. CPC will be applied during the overhaul process to the following areas:

1. Below Floor Area, sta 45 to sta 485 – Refer to Figure 1, Sheet 1 and Sheet 2.
2. Forward and Aft Wheel Well Areas – Refer to Figure 2.
3. Forward Landing Gear Support Beams, sta 240 to sta 260 – Refer to Figure 3.
4. Pod Panel Box, sta 460 to sta 482, WL 0 to WL minus 40 – Refer to Figure 4.
5. Left and Right Forward Electrical Compartments – Refer to Figure 5.
6. Ramp Under Floor Area (All Internal Structure) – Refer to Figure 6, Sheet 1 and Sheet 2.

GENERAL APPLICATION PROCEDURES

The specified CPC (Cor-Ban 35) is a long lasting, high solids, low volatiles, high penetration, water displacing compound for use on high profile aircraft substrates. The product can be applied using conventional airless or air-operated spray equipment. The coating should be applied at 1.0 to 1.5 mil wet film thickness to a clean, dry surface. Tack free drying time is one hour. Total drying time is 18 hours. It dries to a salmon pink color. Material is removable with any aliphatic cleaning solvent.
GENERAL APPLICATION PROCEDURES - continued

For hard to reach areas, or for touch-up operations, the CPC is supplied in aerosol cans with various applicators as detailed below. The extension tubes are provided with aluminum sleeves for shaping and directing the spray.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cor-Ban 35 Aerosol</td>
<td>004675</td>
<td>Aerosol can</td>
</tr>
<tr>
<td>Format 18 F</td>
<td>006224</td>
<td>Aerosol extension tube, 18-inch long, fan spray</td>
</tr>
<tr>
<td>Format 48 F</td>
<td>008460</td>
<td>Aerosol extension tube, 48-inch long, fan spray</td>
</tr>
<tr>
<td>Format 18 180</td>
<td>006226</td>
<td>Aerosol extension tube, 18-inch long, 180 degree spray</td>
</tr>
<tr>
<td>Format 18 360</td>
<td>006227</td>
<td>Aerosol extension tube, 18-inch long, 360 degree spray</td>
</tr>
</tbody>
</table>

MANUFACTURER INFORMATION

Zip-Chem Products
400 Jarvis Drive
Morgan Hill, CA 95037
800-648-2661

NOTE

Mask lubricated joints, bearings, electrical connectors, and wiring prior to application of any CPC. Use masking tape (Item 175, WP 0157 00).

CPC APPLICATION LOCATIONS

Apply CPC to the following locations:

1. Below Floor Area, sta 45 to sta 485
1. Below Floor Area, sta 45 to sta 485 - continued

Figure 1. CPC Application – Below Floor Area (Sheet 1 of 2)
1. Below Floor Area, sta 45 to sta 485 - continued

Figure 1. CPC Application – Below Floor Area (Sheet 2 of 2)

NOTE

WP 0149 00 specifies procedures for stripping and reapplication of coatings in the cabin bilge, sta 95 to sta 485. CPC should be applied to this area immediately following completion of WP 0149 00 procedures to preclude additional cleaning before application. Also, apply CPC to bottom former, sta 482, and hinges.
2. Forward and Aft Wheel Well Areas

Figure 2. CPC Application – Forward and Aft Wheel Well Areas
3. Forward Landing Gear Support Beams, sta 240 to sta 260

Figure 3. CPC Application – Forward Landing Gear Support Beams
4. Pod Panel Box, sta 460 to sta 482, WL 0 to WL minus 40

Figure 4. CPC Application – Pod Panel Box, sta 460 to sta 482, WL 0 to WL minus 40
5. Left and Right Forward Electrical Compartments

Figure 5. CPC Application – Left and Right Forward Electrical Compartments
6. Ramp Under Floor Area

Figure 6. CPC Application – Ramp Under Floor Area (Sheet 1 of 2)
6. Ramp Under Floor Area - continued

Figure 6. CPC Application – Ramp Under Floor Area (Sheet 2 of 2)

END OF WORK PACKAGE
INITIAL SETUP

Test Equipment:
As Required

Tools and Special Tools:
Hydraulic Fluid Purification Apparatus,
PN PEO 1078-12HW83
AGPU

Material/Parts:
Hydraulic Fluid (Item 114, WP 0157 00)

Personnel Required:
As Required

References:
TM 55-1520-240-23 Series
TM 55-1730-229-12
PLM-TM-97059, Pall Purifier Operation and
Maintenance Manual

Equipment Conditions:
As Required

Special Environmental Condition:
As Required

SCOPE

This work package describes the hydraulic fluid purification procedures for the CH-47D Helicopter.

PURPOSE

The purpose of purifying the hydraulic fluid is to increase aircraft reliability by removing air; causative agents of corrosion, and particulate contamination from the fluid and thus decreasing wear on the components. The purification process will extend the useful life of the hydraulic fluid, decrease fluid change requirements, and reduce waste disposal expense.

The spinning disk purifier used in this procedure is manufactured by Pall Aeropower Corporation. It has been specially developed to ensure that the working properties of the fluid being purified do not degrade. It does not utilize desiccants, high vacuum, or added heat, all of which are detrimental processes that cause other potential fluid problems.

This procedure will be performed after aircraft MOC and before functional test flight or more frequent as directed by the Contracting Officer. Hydraulic oil samples will be taken after purification process is complete, and after the functional test flight(s) are complete.

HYDRAULIC FLUID PURIFICATION PROCESSES

To purify aircraft hydraulic fluid, perform the following processes in sequence listed below:

1. Drain AGPU into clean recycle container.
2. Purify fluid in clean recycle container.
3. Fill AGPU from clean recycle container.
4. Flush aircraft utility hydraulic system.
5. Fill AGPU from clean recycle container.
6. Flush No. 1 Flight Boost system.
HYDRAULIC FLUID PURIFICATION PROCESSES - continued

7. Fill AGPU from clean recycle container.

8. Flush No. 2 Flight Boost system.

9. Transfer fluid to clean recycle container.

10. Purify clean recycle container.

11. Fill AGPU from clean recycle container.

WARNING

It is critical that the purifier is connected to the AGPU return port. If connected to the pressure port the purifier could explode, causing personal injury and damage to purifier and/or AGPU.

CAUTION

When operating the purifier indoors, vapors may need to be vented away from the purifier. Connect a suitable outlet line (3/4-inch ID minimum) to the coalescing filter outlet and vent the line outside. Do not block or cap vent line while purifier is operating.

Prior to connecting AGPU to aircraft, the aircraft log book shall be inspected to ensure applying hydraulic power and electrical power to aircraft will not damage any components i.e. pitch change links disconnected at upper end, upper boost actuators disconnected, or wires disconnected etc.

When operating AGPU, ensure rotor blades are not over the exhaust of AGPU.

NOTE

Operators shall read and become familiar with the commercial pall purifier operations manual and be a qualified operator of the AGPU prior to using the equipment. This procedure requires 90-day currency to keep operators knowledgeable on procedures.

Recycle container adapter kit desiccant breather and AGPU vent breather should be blue in color. Desiccant should be replaced when it turns pink, white or brown.
SETTING UP THE PALL PURIFIER

**WARNING**

Refer to PLM-TM-97059 for set-up procedures.

The Pall Purifier is used to reduce the particulate matter, air, chlorine and water content in the hydraulic systems. It is imperative that the following precautions are observed:

**WARNING**

Upon receipt and prior to each use, make sure the purifier is serviced with the same fluid as the aircraft. If in doubt, drain purifier (see instructions to drain purifier).

Outlet pressure should never exceed 70 psig or serious injury to personnel and equipment may occur. Inlet pressure should be no less than minus 10 inches HG (minus ten inches mercury) vacuum and no more than 20 psig.

**CAUTION**

Vacuum chamber pressure should read between 22 inches and 26 inches HG vacuum.

Hydraulic oil temperature should never exceed 145 degrees F (63 degrees C).

Due to the high current demand of the purifier, any source that cannot provide at least 20 amps service may cause the unit to burn up internal electrical relays. Electrical extension cords are not recommended. If power is not readily available, a portable generator rated at 3 KW or larger is recommend.

The Pall Purifier should only be connected to a power source providing 115 volts, 60 cycles, capable of carrying at least a 20-amp load.

STARTING THE PALL PURIFIER

1. Open the inlet and outlet valves.

2. Close bypass ball valve.

3. Recheck hose connections between the purifier and the contaminated reservoir for tightness.

4. Depress the "START" button and check the following indicators:
   a. Discharge pressure gage should not exceed 70 psig.
   b. Inlet pressure gage should read between minus 10 inches HG vacuum and 20 psig.
   c. Inlet hydraulic fluid temperature gage should not exceed 145 degrees F (63 degrees C).
   d. Check discharge filter replacement light. If lit, depress "STOP" button.
   e. After one to three minutes of successful operation, check the chamber vacuum gage. It should read between 22 inches and 26 inches HG vacuum.
STARTING THE PALL PURIFIER - continued

5. If any problems are encountered with unit operation, refer to PLM-TM-97059.

DRAIN AGPU INTO CLEAN RECYCLE CONTAINER – (Refer to Figure 1)

WARNING

AGPU must be shut down when connected to the purifier. Failure to do so may damage purifier.

WARNING

HYDRAULIC FLUID

1. Operate the AGPU in high-pressure bypass until the fluid temperature reaches 140 degrees F (60 degrees C).

2. Shut down AGPU.

3. Attach hose from PURIFIER INLET port to AGPU DRAIN port.

4. Attach hose from PURIFIER OUTLET port to CLEAN RECYCLE CONTAINER INLET port.

5. On the AGPU:
   a. Open reservoir vent.
   b. Open reservoir drain valve.
   c. Open return bleed valve.
   d. Open system drain valve.
   e. Ensure that the RESERVOIR select lever is in AGPU position.

6. On the purifier:
   a. Open inlet valve.
   b. Open outlet valve.
   c. Close bypass ball valve.

DRAIN AGPU INTO CLEAN RECYCLE CONTAINER – (Refer to Figure 1) - continued

7. Start purifier:
   a. Start purifier (See detailed start procedures above).
   b. Monitor purifier limitations.

8. Operate purifier until AGPU reservoir is empty and fluid level in purifier begins to drop.

9. When purifier fluid level begins to drop:
a. Shut purifier off.
b. Close reservoir vent on AGPU.
c. Close return bleed valve on AGPU.
d. Close reservoir drain valve on AGPU.
e. Close system drain valve on AGPU.
f. Close purifier inlet valve.
g. Close purifier outlet valve.
h. Disconnect hose from AGPU.

10. If clean recycle container is not at least 3/4 full after draining AGPU, then:
   a. Remove breather adapter from clean recycle container 2-inch bung.
   b. Fill clean recycle container to 3/4 full using new fluid.
   c. Replace breather adapter to clean recycle container 2-inch bung.
DRAIN AGPU INTO CLEAN RECYCLE CONTAINER – (Refer to Figure 1) - continued

Figure 1. Drain AGPU into Clean Recycle Container

PURIFY FLUID IN CLEAN RECYCLE CONTAINER – (Refer to Figure 2)

1. Attach hose from PURIFIER INLET port to CLEAN RECYCLE CONTAINER OUTLET port.

2. Attach hose from PURIFIER OUTLET port to CLEAN RECYCLE CONTAINER INLET port.

3. On purifier:
   a. Open inlet valve.
   b. Open outlet valve.
   c. Close bypass ball valve.
PURIFY FLUID IN CLEAN RECYCLE CONTAINER – (Refer to Figure 2)

4. Start purifier:
   a. Start purifier.
   b. Monitor purifier limitations.

5. Operate purifier a minimum of 2 hours regardless of parts per million (PPM) water sensor readings.

6. After 2 hours of operation and desired PPM readings are obtained:
   a. Shut purifier off.
   b. Close purifier inlet valve.
   c. Close purifier outlet valve.
   d. Disconnect hose from clean recycle container inlet.

Figure 2. Purify Clean Recycle Container
FILL AGPU WITH FLUID FROM CLEAN RECYCLE CONTAINER – (Refer to Figure 3)

**WARNING**

AGPU must be shut down when connected to the purifier. Failure to do so may damage purifier.

1. Shut down AGPU.

2. Attach hose from PURIFIER INLET port to CLEAN RECYCLE CONTAINER OUTLET port.

3. Attach hose from PURIFIER OUTLET port to AGPU RETURN port.

4. On the AGPU:
   a. Open reservoir vent.
   b. Close reservoir drain valve.
   c. Open return bleed valve.
   d. Close system drain valve.
   e. Ensure that the RESERVOIR select lever is in AGPU position.

5. On the purifier:
   a. Open inlet valve.
   b. Open outlet valve.
   c. Close bypass ball valve.

6. Use purifier to refill AGPU reservoir to at least ¾ full:
   a. Start purifier.
   b. Monitor purifier limitations.

7. After AGPU reservoir has been filled:
   a. Shut purifier off.
   b. Close reservoir vent on AGPU.
   c. Close return bleed valve on AGPU.
   d. Close purifier inlet valve.
   e. Close purifier outlet valve.
   f. Disconnect hoses from purifier and clean recycle container.
   g. Put caps on hoses and store properly.
FILL AGPU WITH FLUID FROM CLEAN RECYCLE CONTAINER – (Refer to Figure 3) - continued

Figure 3. Fill AGPU From Clean Recycle Container

FLUSH AIRCRAFT FLIGHT BOOST AND UTILITY SYSTEMS – (Refer to Figure 4)

WARNING

1. Ensure the AGPU reservoir is full. If not, fill AGPU from clean recycle container.

2. Attach hose from AGPU PRESSURE port to aircraft primary or utility GSE PRESSURE connector.

3. Attach hose from aircraft primary or utility GSE RETURN connector to DIRTY RECYCLE CONTAINER INLET port.

4. Plug in aircraft battery. AC power source from AGPU to aircraft should be set to 20 KW setting.
FLUSH AIRCRAFT FLIGHT BOOST AND UTILITY SYSTEMS – (Refer to Figure 4) - continued

NOTE

Personnel are required to use the aircraft intercom communication system to maintain voice communications between the person operating the flight controls and the AGPU operator.

5. Apply external power to the aircraft and establish voice communication via intercom communication system.

6. Recheck the AGPU reservoir fill level gage on the hydraulic control panel to ensure the reservoir is full. Add fluid if necessary.

7. Start AGPU.

8. Turn on AC power to aircraft (20 KW setting).

9. Ensure the RESERVOIR select lever on the AGPU is in AGPU position.

10. Set hydraulic power switch to on.

11. Decrease pressure on AGPU to 1000 psi.

12. Set the AGPU hydraulic output switch to on.

13. Increase pressure on AGPU to 3000 psi.

CAUTION

Do not let the reservoir go empty. Extensive damage to the AGPU hydraulic pump will occur.

NOTE

AGPU fluid level will decrease to between 1/2 and 1/3 full on the reservoir level gage. Do not allow the reservoir level to decrease below 1/3 full (5-7 gallons flushed).

14. If flushing Flight Boost systems, cycle flight controls (collective, cyclic, and pedals) five times each; then cycle flight controls three times each. If flushing the Utility system, run No.1 and No.2 PTUs for 10 seconds, extend winch 10 feet and retract, and then operate center cargo hook, ramp and tongue two times each.

15. Flush is complete.

16. Switch AGPU hydraulic output to off.

17. Disconnect hose from aircraft primary or utility GSE return connector.

18. Decrease hydraulic pressure on AGPU to 1000 psi.

19. Fill aircraft reservoir.
   a. Monitor quantity indicator on aircraft maintenance panel.
   b. For Utility system, open utility depressurize valve on aircraft and hold in on the APU start module in aircraft. For Flight Boost system go on to next step.
   c. Switch AGPU hydraulic output to on.
   d. Increase pressure on AGPU to 3000 psi.
FLUSH AIRCRAFT FLIGHT BOOST AND UTILITY SYSTEMS – (Refer to Figure 4) - continued

20. When aircraft reservoir is full, switch AGPU hydraulic output to off.

21. Decrease hydraulic pressure on AGPU to 500 psi.

22. Switch hydraulic power to off.

23. Shut down AGPU.

24. Disconnect hoses from AGPU, aircraft, and dirty recycle container.

25. Put caps on hoses and store properly.

Figure 4. Flush Aircraft Flight Boost and Utility Systems
TRANSFER FLUID TO CLEAN RECYCLE CONTAINER – (Refer to Figure 5)

1. Attach hose from PURIFIER INLET port to DIRTY RECYCLE CONTAINER OUTLET port.

2. Attach hose from PURIFIER OUTLET port to CLEAN RECYCLE CONTAINER INLET port.

3. On the purifier:
   a. Open inlet valve.
   b. Open outlet valve.
   c. Close bypass ball valve.

4. Start purifier:
   a. Start purifier.
   b. Monitor purifier limitations.

5. Operate purifier until fluid level in purifier begins to drop or until clean recycle container is full.

6. When fluid level in purifier begins to drop or clean recycle container is full:
   a. Shut purifier off.
   b. Close purifier inlet valve.
   c. Close purifier outlet valve.
   d. Disconnect hoses from purifier and clean recycle container.
   e. Put caps on hoses and store properly.
TRANSFER FLUID TO CLEAN RECYCLE CONTAINER – (Refer to Figure 5) - continued

Figure 5. Transfer Fluid to Clean Recycle Container

DRAIN PURIFIER – (Refer to Figure 6)

1. Close inlet valve on purifier.

2. Open outlet valve on purifier.

3. Connect hose to PURIFIER OUTLET port and put other end of hose in bucket.
DRAIN PURIFIER – (Refer to Figure 6) - continued

4. Start purifier:
   a. Start purifier.
   b. Monitor purifier limitations.
   c. Ensure flow from purifier output into bucket.

5. Operate purifier until it automatically shuts down.

6. When purifier shuts down:
   a. Turn purifier switch off.
   b. Close purifier outlet valve.
   c. Disconnect hose from purifier.
   d. Put caps on hoses and store properly.

![Diagram of Drain Purifier]

Figure 6. Drain Purifier

FILL PURIFIER FROM CLEAN RECYCLE CONTAINER – (Refer to Figure 7)

1. Disconnect hose from PURIFIER OUTLET.

2. Open inlet, outlet, and bypass ball valves on purifier.

3. Attach hose from PURIFIER INLET port to CLEAN RECYCLE CONTAINER OUTLET port.

4. Start purifier:
   a. Start purifier.
   b. Monitor purifier limitations.
FILL PURIFIER FROM CLEAN RECYCLE CONTAINER – (Refer to Figure 7) - continued

5. When desired fluid level in purifier is achieved:
   a. Shut purifier off.
   b. Close purifier inlet valve.
   c. Close purifier outlet valve.
   d. Close purifier bypass ball valve.
   e. Disconnect hose from purifier and clean recycle container.
   f. Put caps on hoses and store properly.

---

**Figure 7. Fill Purifier from Clean Recycle Container**
PARTS LISTS

The purification apparatus for the CH-47 must be assembled from parts obtained through the DoD supply system and purchased from commercial vendors. The complete apparatus consists of the following:

a. PEO1078-12HW83 Purifier (1 ea)
b. DB1004-1 Drum Breather Kit (2 ea)
c. ST3003 Stainless Steel Drums (SS30) (2 ea)
d. B600 Desiccant Breather (2 ea)
e. Hoses to purify aircraft
f. Hose to purify AGPU
g. Purifier Connections
h. Sampler assembly

A breakout of the above follows.

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### Table 3. Parts List for Additional Hose to Purify AGPU

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### Table 5. Parts List for Clean and Dirty Recycle Containers

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Purchase from:
Y2K Fluid Power, Inc.
3020 Centerville Road
St. Paul, MN 55117
(651) 415-1864

END OF WORK PACKAGE
For oils and lubricants used to maintain the CH-47D Helicopter, refer to TM 55-1520-240-23 and WP 0157 00.

END OF WORK PACKAGE
DEPOT MAINTENANCE WORK REQUIREMENT
CH-47D HELICOPTER
CH-47D TAIL NUMBER CROSS REFERENCE

SCOPE

This work package provides a ready reference concerning the aircraft manufacture date, initial serial number, remanufacture date, airframe hours at remanufacture, and "D" model serial number.

BRIEF HISTORY OF THE CHINOOK

Evolution of the CH-47 is as follows:

June 1959 – Initial development contract awarded to the Vertol Company
April 1961 – Initial Chinook rollout
September 1961 – First Flight
August 1962 – U.S. Army accepts first production CH-47
1962 – First of eventually 750 Chinooks destined for Vietnam War
1970 – International Chinook sales augment reduced Army production
1982 – CH-47D deliveries begin – continued thru the mid-1990's
May 1990 – MH-47E first flight
1992 – Approximately 200 U.S. Army and Allied Chinooks participate in Persian Gulf War
August 1999 – CH-47SD first flight
June 2001 – CH-47F first flight

TAIL NUMBER CROSS REFERENCE INFORMATION

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END OF WORK PACKAGE
FOR THE COMMANDER:

ROBERT W. ENGLISH, III
Colonel, OD
Chief of Staff

OFFICIAL:

RICHARD E. TURNER
Deputy Director
Integrated Materiel Management Center
REQUEST FOR DEPOT ENGINEERING SUPPORT

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(Use Continuation Sheet If Necessary)

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RECOMMENDED SOLUTIONS OR DISPOSITION:

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ANNOTATION FORM

1 Jul 96

Edition of Jun 95 to Obsolete
These are the instructions for sending an electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: “Whomever” <whomever@wherever.army.mil>
To: 2028@redstone.army.mil

Subject: DA Form 2028
1. **From:** Joe Smith
2. **Unit:** home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St:** MO
6. **Zip:** 77777
7. **Date Sent:** 19–OCT–93
8. **Pub no:** 55–2840–229–23
9. **Pub Title:** TM
10. **Publication Date:** 04–JUL–85
11. **Change Number:** 7
12. **Submitter Rank:** MSG
13. **Submitter FName:** Joe
14. **Submitter MName:** T
15. **Submitter LName:** Smith
16. **Submitter Phone:** 123–123–1234
17. **Problem:** 1
18. **Page:** 2
19. **Paragraph:** 3
20. **Line:** 4
21. **NSN:** 5
22. **Reference:** 6
23. **Figure:** 7
24. **Table:** 8
25. **Item:** 9
26. **Total:** 123
27. **Text:**

This is the text for the problem below line 27.
### RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM)

**DATE** 8/30/02

**TO:** (Forward to proponent of publication or form)(Include ZIP Code)
Commander, U.S. Army Aviation and Missile Command
ATTN: AMSAM--MMC--MA--NP
Redstone Arsenal, 35898

**FROM:** (Activity and location)(Include ZIP Code)
MSG, Jane Q. Doe
1234 Any Street
Nowhere Town, AL 34565

**PART 1 -- ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS**

**PUBLICATION/FORM NUMBER** TM 9–1005–433–24

**DATE** 16 Sep 2002


<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PAGE NO.</th>
<th>PARA– GRAPH</th>
<th>LINE NO. *</th>
<th>FIGURE NO.</th>
<th>TABLE NO.</th>
<th>RECOMMENDED CHANGES AND REASON</th>
</tr>
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<tr>
<td>1</td>
<td>WP0005</td>
<td>PG 3</td>
<td>2</td>
<td></td>
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<td>Test or Corrective Action column should identify a different WP number.</td>
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</table>

* Reference to line numbers within the paragraph or subparagraph.

**TYPED NAME, GRADE OR TITLE**
MSG, Jane Q. Doe, SFC

**TELEPHONE EXCHANGE/ AUTOVON, PLUS EXTEN- SION**
788–1234

**SIGNATURE**

DA FORM 2028, FEB 74
REPLACES DA FORM 2028, 1 DEC 68, WHICH WILL BE USED.

USAPA V3.01
<table>
<thead>
<tr>
<th>PAGE NO.</th>
<th>COLM NO.</th>
<th>LINE NO.</th>
<th>NATIONAL STOCK NUMBER</th>
<th>REFERENCE NO.</th>
<th>FIGURE NO.</th>
<th>ITEM NO.</th>
<th>TOTAL NO. OF MAJOR ITEMS SUPPORTED</th>
<th>RECOMMENDED ACTION</th>
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</thead>
</table>

**PART III – REMARKS** (Any general remarks, suggestions for improvement of publications and blank forms may be used if more space is needed.)

**MSG, Jane Q. Doe, SFC**

**TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION**

788–1234

**SIGNATURE**
### RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

For use of this form, see AR 25-30; the proponent agency is OD/SC4.

**TO:** (Forward to proponent of publication or form) (Include ZIP Code)  
Commander, U.S. Army Aviation and Missile Command  
ATTN: AMSAM-MMC-MA-NP  
Redstone Arsenal, AL  35898

**FROM:** (Activity and location) (Include ZIP Code)

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<tr>
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<td>PAGE NO.</td>
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*Reference to line numbers within the paragraph or subparagraph.*

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<th>TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION</th>
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DA FORM 2028, FEB 74  
REPLACES DA FORM 2028, 1 DEC 68, WHICH WILL BE USED.  
USAPA V3.01
PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

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<th>TITLE</th>
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<th>COLM NO.</th>
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<th>REFERENCE NO.</th>
<th>FIGURE NO.</th>
<th>ITEM NO.</th>
<th>TOTAL NO. OF MAJOR ITEMS SUPPORTED</th>
<th>RECOMMENDED ACTION</th>
</tr>
</thead>
</table>

PART III – REMARKS  
(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)

TYPED NAME, GRADE OR TITLE

TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION

SIGNATURE
### The Metric System and Equivalents

#### Linear Measure

| 1 centimeter = 10 millimeters = .39 inch | 1 centiliter = 10 milliliters = .34 fl. ounce |
| 1 decimeter = 10 centimeters = 3.94 inches | 1 deciliter = 10 centiliters = 3.38 fl. ounces |
| 1 meter = 10 decimeters = 39.37 inches | 1 liter = 10 deciliters = 33.81 fl. ounces |
| 1 dekameter = 10 meters = 32.8 feet | 1 dekaliter = 10 liters = 2.64 gallons |
| 1 hectometer = 10 dekameters = 328.08 feet | 1 hectoliter = 10 dekaliters = 26.42 gallons |
| 1 kilometer = 10 hectometers = 3,280.8 feet | 1 kiloliter = 10 hectoliters = 264.18 gallons |

#### Liquid Measure

- 1 centiliter = 10 milliliters = .34 fl. ounce
- 1 deciliter = 10 centiliters = 3.38 fl. ounces
- 1 liter = 10 deciliters = 33.81 fl. ounces
- 1 dekaliter = 10 liters = 2.64 gallons
- 1 hectoliter = 10 dekaliters = 26.42 gallons
- 1 kiloliter = 10 hectoliters = 264.18 gallons

#### Weights

| 1 centigram = 10 milligrams = .15 grain | 1 sq. centimeter = 100 sq. millimeters = .155 sq. inch |
| 1 decigram = 10 centigrams = 1.54 grains | 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches |
| 1 gram = 10 decigrams = .035 ounce | 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet |
| 1 dekagram = 10 grams = .35 ounce | 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet |
| 1 hectogram = 10 dekagrams = 3.52 ounces | 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres |
| 1 kilogram = 10 hectograms = 2.2 pounds | 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile |
| 1 quintal = 100 kilograms = 220.46 pounds | 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile |

#### Square Measure

- 1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
- 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
- 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
- 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
- 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
- 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

#### Cubic Measure

- 1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
- 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
- 1 cu. meter = 1000 cu. decimeters = 35.31 feet

#### Approximate Conversion Factors

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<tr>
<th>To change</th>
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<tr>
<td>inches</td>
<td>centimeters</td>
<td>2.540</td>
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<tr>
<td>feet</td>
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<tr>
<td>yards</td>
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<td>.914</td>
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<tr>
<td>miles</td>
<td>kilometers</td>
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<td>square inches</td>
<td>square centimeters</td>
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<td>square feet</td>
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<td>square yards</td>
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<td>square kilometers</td>
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<tr>
<td>acres</td>
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<td>cubic feet</td>
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<tr>
<td>cubic yards</td>
<td>cubic meters</td>
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<tr>
<td>fluid ounces</td>
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<tr>
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<tr>
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<tr>
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<tr>
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<td>pound-feet</td>
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<td>pound-inches</td>
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#### Temperature (Exact)

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<th>Celsius temperature</th>
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<td>5/9 (after subtracting 32)</td>
<td>.007062</td>
<td>.876</td>
<td>.333</td>
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</table>

- 1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
- 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
- 1 cu. meter = 1000 cu. decimeters = 35.31 feet

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