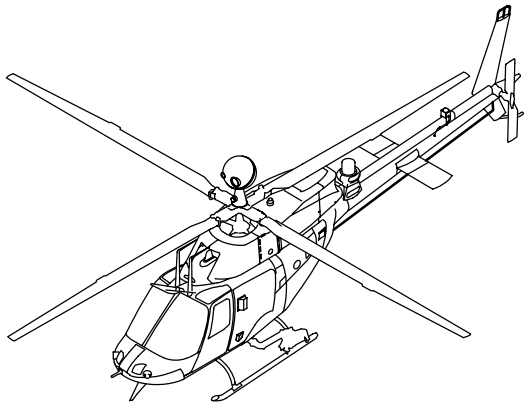
TECHNICAL MANUAL

AVIATION UNIT AND INTERMEDIATE MAINTENANCE MANUAL



ARMY MODEL OH-58D HELICOPTER

DISTRIBUTION STATEMENT A.
Approved for public release; distribution is unlimited.

***This manual together with TM 1-1520-248-23-2, TM 1-1520-248-23-3, TM 1-1520-248-23-4, TM 1-1520-248-23-5, TM 1-1520-248-23-6 and TM 1-1520-248-23-7, all dated 28 February 2000, supersedes TM 55-1520-248-23-1, TM 55-1520-248-23-2, TM 55-1520-248-23-3, TM 55-1520-248-23-4, TM 55-1520-248-23-5, TM 55-1520-248-23-6, TM 55-1520-248-23-7, TM 55-1520-248-23-8-1, TM 55-1520-248-23-8-2, and TM 55-1520-248-23-9, all dated 12 January 1988, including all changes.**

THIS VOLUME IS ONE OF A SERIES OF SEVEN VOLUMES AND IS INCOMPLETE WITHOUT TM 1-1520-248-23-2, TM 1-1520-248-23-3, TM 1-1520-248-23-4, TM 1-1520-248-23-5, TM 1-1520-248-23-6, AND TM 1-1520-248-23-7.

Headquarters, Department of the Army

28 FEBRUARY 2000

CHANGE
NO. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 31 January 2001

Aviation Unit and Intermediate
Maintenance Manual

ARMY MODEL
OH–58D HELICOPTER

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

TM 1–1520–248–23–1, 28 February 2000, is changed as follows:

1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages	Insert pages
A and B	A and B
i and ii	i and ii
3–1 through 3–4	3–1 through 3–4
3–9 through 3–18	3–9 through 3–18
3–25 through 3–32	3–25 through 3–32
3–37 and 3–38	3–37 and 3–38
3–45 through 3–48	3–45 through 3–48
–––––––––––	3–48.1 through 3–48.3/(3–48.4 blank)
3–49 through 3–56	3–49 through 3–56
3–59 and 3–60	3–59 and 3–60
3–63 through 3–68	3–63 through 3–68
3–71 and 3–72	3–71 and 3–72
3–79 and 3–80	3–79 and 3–80
3–85 and 3–86	3–85 and 3–86
3–91 through 3–100	3–91 through 3–100
3–111 through 3–116	3–111 through 3–116
3–119 and 3–120	3–119 and 3–120
3–123 through 3–142	3–123 through 3–142
3–151 and 3–152	3–151 and 3–152
3–155 through 3–160	3–155 through 3–160
3–167 and 3–168	3–167 and 3–168
3–169 through 3–171/(3–172 blank)	–––––––––––
Index 1 through Index 74	Index 1 through Index 74

2. Retain this sheet in front of manual for reference purposes.

By Order of the Secretary of the Army:

Official:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0100401

DISTRIBUTION:

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CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 November 2000

Aviation Unit and Intermediate
Maintenance Manual
For

ARMY MODEL
OH–58D HELICOPTER

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TM 1–1520–248–23–1, 28 February 2000, is changed as follows:

1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages	Insert pages
A/(B blank)	A/(B blank)
a through d	a through d
i through xii	i through xii
xv through xxix/(xxx blank)	xv through xxix/(xxx blank)
1–11 and 1–12	1–11 and 1–12
1–15 and 1–16	1–15 and 1–16
1–23 and 1–24	1–23 and 1–24
1–31 and 1–32	1–31 and 1–32
1–39 and 1–40	1–39 and 1–40
1–55 through 1–76	1–55 through 1–76
1–77 and 1–78	–––––––––––
1–79 through 1–90	1–79 through 1–90

TM 1–1520–248–23–1

C 1

Remove pages	Insert pages
1–101 through 1–110	1–101 through 1–110
––––––––––––	1–110.1 through 1–110.3/(1–110.4 blank)
1–111 and 1–112	1–111 and 1–112
––––––––––––	1–112.1/(1–112.2 blank)
1–113 through 1–120	1–113 through 1–119/(1–120 blank)
1–121 and 1–22	––––––––––––
1–123 and 1–124	(1–123 blank)/1–124
1–125 through 1–130	1–125 through 1–130
1–135 through 1–150	1–135 through 1–150
1–157 through 1–162	1–157 through 1–162
1–167 through 1–176	1–167 through 1–176
1–195 through 1–204	1–195 through 1–204
2–1 through 2–290	2–1 through 2–290
––––––––––––	2–290.1/(2–290.2 blank)
2–291 through 2–477/(2–478 blank)	2–291 through 2–528
Glossary–1 and Glossary–2	Glossary –1 and Glossary–2
Glossary–5 through Glossary–8	Glossary–5 through Glossary–8
Index–1 through Index–67/(Index–68 blank)	Index–1 through Index–74

2. Retain this sheet in front of manual for reference purposes.

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DISTRIBUTION:

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WARNING

HIGH VOLTAGE

The helicopter contains high voltage and shall be electrically grounded when parked. Serious burns and electrical shock can result from contact with exposed electrical wires or connectors.

WARNING

HIGH VOLTAGE

High voltage may be stored in the ignition system after operation of the APU. This high voltage can cause injury or death.

- Do not make contact with exposed wires or connectors.
- Allow at least 5 minutes after operation of the ignition system before disconnecting or removing ignition system components.
- Turn all power switches off before making any connections or disconnections.
- Observe instructions for grounding the power cable to discharge high voltage.
- For artificial respiration, refer to FM 21-11.

WARNING

STRAY VOLTAGE

Stray voltage may exist in electronic equipment installed in the helicopter. These voltages present an explosive hazard to fuel and fuel fumes. Severe injury or death could result.

WARNING

PITOT HEAT

The pitot tube assembly is very hot during and immediately after operation requiring pitot heat. Severe burns will result if contacted by hands or other parts of the body.

WARNING

LUBRICATING OILS HAZARDOUS

Lubricating oils DOD-L-85734, MIL-L-7808, and MIL-L-23699 contain materials hazardous to health. They can cause paralysis if swallowed. Prolonged contact with skin can cause irritation. Fire can result if oil is exposed to heat or flames.

- Use only in areas with adequate ventilation.
- Wash hands thoroughly after handling.

WARNING

The laser rangefinder/designator (LRF/D) is very dangerous. Looking at the laser beam or its reflection from a shiny surface can cause permanent blindness. Under noncombat conditions, the laser shall be used only in controlled areas and at times specified by a range control officer.

BATTERY ELECTROLYTE

Corrosive battery electrolyte (potassium hydroxide) requires rubber gloves, apron, and face shield when handling leaking batteries. Potassium hydroxide spilled on clothing or other material shall be washed immediately with clean water. If spilled on personnel, severe skin burns will result. Immediately start flushing the affected area with clean water and continue flushing until medical assistance arrives.

WARNING
RADIATION HAZARD

SELF-LUMINOUS DIALS

Self-luminous instrument dials contain radioactive materials.

- If glass is broken or case becomes unsealed, avoid personal contact. Injury to personnel could result.
- Forceps or gloves made of rubber or polyethylene shall be used to pick up contaminated material.
- Place material and gloves in a plastic bag. Seal bag and dispose of it as radioactive waste in accordance with AR 755-15 and TM 3-261.
- Repair procedure shall conform to requirements in AR 700-52.

WARNING

DRYCLEANING SOLVENT

Drycleaning solvent is flammable and toxic. It can irritate skin and cause burns.

- Use only in well-ventilated area away from heat and open flame.
- Wear rubber gloves and goggles.
- In case of contact, immediately flush skin or eyes with water for at least 15 minutes.
- Get medical attention for eyes.

WARNING

SOUND LEVEL

Sound pressure levels in this helicopter during operating conditions exceed the Surgeon General hearing conservation criteria. Hearing protection devices, such as aviator helmet or ear plugs or ear sound suppressors, are required to be worn by all personnel in and around the helicopter during its operation.

WARNING

MAIN AND TAIL ROTOR BLADES

Stay clear of turning main and tail rotor blades. Wind gusts, coast down or cyclic movement may cause the main rotor blade to flap down below the height of a person. Dangerous winds are created by the main rotor blades when blades are operated at or near top rpm. Adequate distance must be maintained from main and tail rotor blades during operation. Severe injury or death may result.

WARNING

ARMAMENT

Loaded weapons, or weapons being loaded or unloaded, shall be pointed in a direction which offers the least exposure to personnel or property in the event of accidental firing. Personnel should remain clear of hazardous area of all loaded weapons. Death or severe injury may result.

WARNING

HF ANTENNA

Ensure that HF antenna is not operating while performing maintenance. When operating, HF antenna emits infrared radiation that can cause radiation burns. If exposed to infrared radiation, seek medical aid immediately.

WARNING

ASBESTOS DUST

Avoid creating dust. Breathing asbestos dust may cause serious long-term bodily harm.

LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

NOTE: The portion of the text affected by the changes is indicated by a vertical bar in the outer margins of the page. Changes to illustrations are indicated by a vertical bar or a pointing hand adjacent to the area of the change.

Dates of issue for original and changed pages are:

Original . . . . . 0 . . . . 28 February 2000
Change . . . . . 1 . . . . 30 November 2000
Change . . . . . 2 . . . . . 31 January 2001

TOTAL NUMBER OF PAGES IN THIS VOLUME IS 1028, CONSISTING OF THE FOLLOWING:

Page No.	*Change No.
Cover-1	0
Cover-2 Blank	0
A — B	2
a — d	1
i	2
ii — xii	1
xiii — xiv	0
xv	1
xvi — xvii	0
xviii — xxix	1
xxx Blank	0
1-1 — 1-11	0
1-12	1
1-13 — 1-15	0
1-16	1
1-17 — 1-22	0
1-23	1
1-24 — 1-31	0
1-32	1
1-33 — 1-39	0
1-40	1
1-41 — 1-55	0
1-56	1
1-57	0
1-58 — 1-61	1
1-62 — 1-63	0
1-64 — 1-65	1
1-66	0
1-67 — 1-69	1
1-70	0
1-71	1
1-72 — 1-73	0
1-74 — 1-76	1
1-77 — 1-78 Deleted	1
1-79 — 1-80	1
1-81 Blank	1
1-82 — 1-85	1
1-86	0
1-87	1
1-88	0
1-89	1
1-90 — 1-100	0
1-101 — 1-105	1
1-106	0
1-107	1
1-108	0
1-109 — 1-110	1
1-110.1 — 1-110.3 Added	1
1-110.4 Blank	1
1-111 — 1-112	1
1-112.1 Added	1
1-112.2 Blank	1
1-113 — 1-116	1
1-117	0
1-118 — 1-119	1
1-120 Blank	1
1-121 — 1-122 Deleted	1
1-123 Blank	1
1-124 — 1-126	1
1-127	0
1-128 — 1-129	1
1-130 — 1-134	0
1-135 — 1-136	1
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1-138 — 1-141	1
1-142	0
1-143 — 1-144	1
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1-150	1
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1-161 — 1-162	1
1-163 — 1-167	0
1-168	1
1-169	0
1-170 — 1-173	1
1-174 — 1-175	0
1-176	1
1-177 — 1-195	0
1-196 — 1-197	1
1-198 — 1-199	0
1-200	1
1-201	0
1-202 — 1-203	1
1-204 — 1-206	0
2-1 — 2-478	1
2-479 — 2-528 Added	1
3-1	0
3-2 — 3-3	2
3-4 — 3-9	0
3-10 — 3-18	2
3-19 — 3-25	0
3-26	2
3-27	0
3-28	2
3-29	0
3-30 — 3-32	2
3-33 — 3-37	0
3-38	2
3-39 — 3-44	0
3-45 — 3-48	2
3-48.1 — 3-48.3 Added	2
3-48.4 Blank	2
3-49 — 3-55	2
3-56 — 3-58	0
3-59	2
3-60 — 3-63	0
3-64 — 3-67	2
3-68 — 3-71	0
3-72	2
3-73 — 3-79	0
3-80	2
3-81 — 3-85	0
3-86	2
3-87 — 3-90	0
3-91	2
3-92	0
3-93	2
3-94	0
3-95 — 3-99	2
3-100 — 3-110	0
3-111	2
3-112 — 3-113	0
3-114	2
3-115	0
3-116	2
3-117 — 3-118	0
3-119	2
3-120 — 3-122	0
3-123	2
3-124 — 3-125	0
3-126 — 3-130	2
3-131	0
3-132	2

* Zero in this column indicates an original page.

LIST OF EFFECTIVE PAGES (Cont)

Page No.	*Change No.
3-133	0
3-134 — 3-135	2
3-136 — 3-137	0
3-138 — 3-141	2
3-142 — 3-151	0
3-152	2
3-153 — 3-154	0
3-155 — 3-160	2
3-161 — 3-166	0
3-167 — 3-168	2
3-169 — 3-171/(3-172 Blank) Deleted	2
Glossary-1	1
Glossary-2 — Glossary-4	0
Glossary-5	1
Glossary-6 — Glossary-7	0
Glossary-8	1
Index 1 — Index 68	2
Index 69 — Index 74 Added	2

* Zero in this column indicates an original page.

TECHNICAL MANUAL
NO. TM 1-1520-248-23

HEADQUARTERS
Department of the Army
Washington, D.C., 28 February 2000

AVIATION UNIT AND INTERMEDIATE MAINTENANCE MANUAL FOR ARMY MODEL OH-58D HELICOPTER

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-LS-P, Redstone Arsenal, AL 35898-5230. You may also submit your recommended changes by E-mail directly to ls-lp@redstone.army.mil in the format provided in the back of this manual immediately preceding the hard copy 2028. DA Form 2028's may also be faxed to DSN 788-6546 or commercial fax 256-842-6546. A reply will be furnished to you.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

TABLE OF CONTENTS **PAGE**

*This manual together with TM 1-1520-248-23-2, TM 1-1520-248-23-3, TM 1-1520-248-23-4, TM 1-1520-248-23-5, TM 1-1520-248-23-6 and TM 1-1520-248-23-7, all dated 28 February 2000, supersedes TM 55-1520-248-23-1, TM 55-1520-248-23-2, TM 55-1520-248-23-3, TM 55-1520-248-23-4, TM 55-1520-248-23-5, TM 55-1520-248-23-6, TM 55-1520-248-23-7, TM 55-1520-248-23-8-1, TM 55-1520-248-23-8-2, and TM 55-1520-248-23-9, all dated 12 January 1988, including all changes.

TABLE OF CONTENTS (Cont)

TABLE OF CONTENTS (Cont) PAGE

TABLE OF CONTENTS (Cont) **PAGE**

TABLE OF CONTENTS (Cont) **PAGE**

HOW TO USE THIS MANUAL

1. GENERAL

To get the job done correctly, you must be able to find all the information you need. Knowing how to use this manual is the key. You should know what is in this manual, how the manual is organized, and how to use it.

2. ORGANIZATION

a. The complete OH-58D/OH-58D(R) Kiowa Warrior helicopter (AVUM/AVIM) maintenance manual consists of a set of seven volumes. These volumes are numbered as follows: TM 1-1520-248-23-1 through TM 1-1520-248-23-7.

b. Volumes are made up of chapters. Each chapter is numbered in Arabic numerals (1, 2, 3, etc.). Each chapter has maintenance information on a particular helicopter system.

c. Chapters are broken down into sections. Sections are numbered in Roman numerals (I, II, III, etc.).

d. Sections are made up of paragraphs and tasks. The first three sections of Chapter 1 are made up of paragraphs that describe and locate the helicopter systems and components. Other sections throughout the manual are made up primarily of tasks, but all sections contain introductory paragraphs that describe the section contents. Sections cover major parts of a system.

e. Tasks are detailed descriptions of maintenance procedures. Some tasks are brief. Some are several pages long.

f. The title of each task contains the name of the component followed by the type of operation that is being described, e.g., Removal, Cleaning, Inspection, Repair, Installation, and others as applicable.

g. A task starts with an initial setup (content detailed in paragraph 8.) which is followed by a step-by-step procedure on how to perform the task correctly. The steps in the procedures have illustrations to help make things clear.

h. The words **"**INSPECT**"** or **"**INSPECT**"** may be seen in a task. **"**INSPECT**"** means that the repairer shall stop and check the component. **"**INSPECT**"** means that a Technical Inspector (TI) is required. Do not go beyond that point in the procedure until the TI has completed his inspection.

i. If applicable, a paragraph at the end of a task called **"**FOLLOW-ON MAINTENANCE**"** may be seen. The steps listed will be required to place the helicopter in a flyable state following the completion of the maintenance task.

j. Operational checks and troubleshooting procedures are contained in the three-volume TM 1-1520-248-T manual. A reference to TM 1-1520-248-T will be made if an operational check must be performed to ensure serviceability.

3. PARAGRAPH NUMBERING

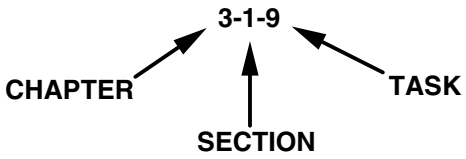
a. Paragraph numbers are assigned to each major information subject.

b. Paragraphs are individually numbered by chapter and sequence.

4. TASK NUMBERING

Task numbers are in three parts. The first is the chapter number. The second is the section number in that chapter. The third number is the task's actual sequence in the section. Each number is separated by a (–) as shown in the example:

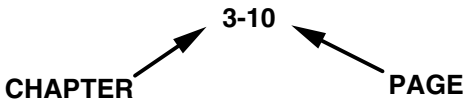
HOW TO USE THIS MANUAL — continued



Task numbers are the most important numbers in the manual. Always use the task number, NOT the page number, to find information.

5. PAGE NUMBERING

Except for front matter (all material that precedes Chapter 1), appendices, glossary, alphabetical index, and foldouts, all page numbering is by chapters. The first number is the number of the chapter; the second number is the number of the page in that chapter. The numbers are separated by a dash as shown in the example:



6. MANUAL INDEX

a. The alphabetical index for the entire manual is located at the end of each volume of volumes 1 through 6. The index lists all task titles and certain key paragraphs of non-task text in alphabetical order. After you find the title in the index, it tells the task number or paragraph number of that task or text. For example, if you need information on the wire cutter, go to the **"**C**"** section of the index and look under **"**Cutter.**"**

There you will find:

Cutter (Rapid Deployment), Lower Wire — Removal/Installation 2-2-60

The index tells that the wire cutter information for the lower wire cutter is in Chapter 2, section 2, task 60.

b. You can find your task in the index, even if you only know a single word in the title. In the sample title above you could also find your tasks by looking under **"**Wire**"**. Examples:

Wire Cutter (Rapid Deployment), Lower — Removal/Installation 2-2-60

Or, you could look under **"**Lower**"**:

Lower Wire Cutter (Rapid Deployment) — Removal/Installation 2-2-60

In using the manual index, many similar task titles will be encountered. Some titles are similar though in different systems. This is true with shafts, brackets, supports, bearings, etc. The index will provide the name of the correct system to help you avoid going to the wrong paragraph/task.

c. Any task can be located in the way described. If you know the name, job, part, assembly, procedure, description, etc., you can use one of the words to find the paragraph number in the index.

7. GLOSSARY

a. A glossary of words used throughout the manual is located just before the alphabetical index in each volume of volumes 1 through 6. Section I of the glossary is the list of abbreviations and acronyms. Abbreviations are shortened terms for words. Acronyms are shortened terms for several words and use only the first letter of each of the words. Abbreviations and acronyms are defined where first used. The glossary provides a good place to check if there is any doubt.

HOW TO USE THIS MANUAL — continued

b. Section II of the glossary contains definitions of unusual terms that appear in the manual. Many words have more than one meaning. A word that has a certain meaning in everyday language could have a different meaning for the helicopter. This is the reason for the definitions. If you see an unfamiliar word in the manual, check the list of definitions.

c. Review the glossary periodically to ensure familiarity with the abbreviations, acronyms, and unusual terms.

8. INITIAL SETUP

The first page of each maintenance task in the manual contains the initial setup. Always check the initial setup before starting a task on the helicopter. The initial setup contains information you must know. DON'T START A TASK UNTIL:

- You understand the task
- You understand what you are to do
- You understand what is needed to do the work
- You have the things you need.

An example initial setup is shown below. Not all tasks have the headings shown.

Each part of the initial setup is explained by the following subparagraphs (a. through h.). Each subparagraph describes initial setup entries in order of their appearance in the example.

a. **Title:** The title in the upper border contains the chapter/section/task number and title of the task as listed in the index. The task is performed at the intermediate level if (AVIM) appears in the title.

b. **This Task Covers:** This entry appears in the border below the title. The task may require one or more operations (such as removal and installation).

c. **Applicable Configurations:** This entry specifies the model or models for which the task is used, i.e., OH-58D, OH-58D(R), or All.

d. **Tools:** This heading identifies the list of tool kit(s) by MOS(s). The tools in the kit(s) and any others listed will be all that are required to perform the task. Tasks requiring tools other than those in this tool kit are considered SPECIAL TOOLS. Special tools could be: (1) tools from the shop set: (2) tools from the kits of other MOSs, or (3) tools made especially for the OH-58D helicopter. Special tools will be listed in addition to MOS tool kits when needed. Tool kits and special tools have an item number assigned to them and are located in Appendix B. Appendix B contains a **"**Tools and Test Equipment Requirements**"** listing. Each item listed has an Equipment Reference Code. This code is used to clearly identify a tool or item of test equipment, e.g., (B127). It is acceptable to use a torque wrench other than that which is listed as long as the torque range is the same. Example: 1/4 - inch drive torque wrench **30 INCH-POUNDS to 150 INCH-POUNDS** or 3/8 - inch drive torque wrench **30 INCH-POUNDS to 150 INCH-POUNDS.** If a tool or a part will have to be made, it is listed in an index in Appendix H. The index will identify the tool or part by name or part number, and a figure number in Appendix H will be referenced. All information required to construct a part or tool is provided in the figure.

HOW TO USE THIS MANUAL — continued

INITIAL SETUP EXAMPLE

9-6-1. WEIGHT-ON-GEAR SWITCH (RAPID DEPLOYMENT LANDING GEAR) — REMOVAL/ INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Personnel Required:
67S Scout Helicopter Technical Inspection (TI)
68F Aircraft Electrician

Tools:
Electrical Repairer Tool Kit (B177)

Material:
Sealing Compound (D179)
Lockwire (D132)
Rubber Gloves (D111)

References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

e. **Material:** This heading identifies the list of materials needed to complete the task. Most materials cannot be used on the helicopter a second time; they are expendable. Expendable materials are items such as solvent, grease, oil, hydraulic fluid, etc.

(1) Each expendable has an item number assigned to it and is located in Appendix D. The item number is placed in parentheses following the item name on the initial setup page. A typical example of an expendable item is:

Lockwire (D132)

See the expendable and durable item list in Appendix D for more information about expendable and durable materials.

(2) Some parts are also expendable.

(3) It may be necessary to use a part as a tool to do a step in a task. These parts do not appear in TM 1-1520-248-23P. A typical example would be when a bolt is used to temporarily hold an assembly in place or to align two pieces of material to be fastened.

f. **Personnel Required:** This heading lists the people required to perform the task. It also tells the MOS of each person and the number of persons required. For example:

67S Scout Helicopter Repairer (2)
67S Scout Helicopter Technical Inspector (TI)

This listing would indicate that two 67S repairers and a 67S technical inspector will be needed to complete the task.

IF YOUR MOS IS NOT LISTED IN THE PERSONNEL REQUIRED COLUMN IN THE INITIAL SETUP, CHECK WITH YOUR MAINTENANCE SUPERVISOR FIRST BEFORE STARTING THE TASK.

g. **References:** This heading identifies the list of other technical manuals (TMs) needed to complete a task. The steps in the task will tell you when you must refer to another TM.

h. **Equipment Condition:** This heading identifies the list of tasks or parts of tasks that must be accomplished before starting a task. It may require an operation such as jacking the helicopter, or just the tailboom; or removing parts, assemblies, etc. These operations are described in other tasks or technical manuals. The paragraphs or TMs that describe how to do these operations are referenced here. If the job is to be done on the helicopter, the statement **"**Helicopter Safed**"** will appear here. The reference will be to Task 1-6-7 where armament safing is described. It is essential that equipment conditions listed in a particular task be followed in sequence so that required conditions are not missed and all required tasks are reviewed prior to start of maintenance.

9. WARNINGS, CAUTIONS AND NOTES

The warnings used in this manual may be in text or icon format. Text warnings are used to describe hazardous situations, and icons are for hazardous materials and certain operations where defined.

Icon warnings are pictorial images which may be used in place of words. The safety summary sheet, which is located immediately after the title page, explains in detail what each icon means.

WARNING AND CAUTION STATEMENTS

WARNING and CAUTION statements are used prior to operating or maintenance procedures, practices, or conditions considered essential to the protection of personnel (WARNING) or equipment and property (CAUTION). A WARNING or CAUTION will apply each time the related step is repeated. Prior to starting any task, the WARNINGS or CAUTIONS included in the text for that task will be reviewed and understood. Refer to the materials list figure at the beginning of the appropriate manual section for material used during maintenance of this equipment. The detailed warnings for hazardous material and operations are listed separately in the safety summary as **"**Hazardous Materials and Operations Icons**"**.

HAZARDOUS MATERIALS

This publication describes physical and chemical processes which may require the use of chemicals, solvents, paints, or other commercially available material. The user of this publication should obtain the material safety data sheets (Occupational Safety and Health Administration (OSHA) Form 20 or equivalent) from the manufacturers or suppliers of materials to be used. The user must become completely familiar with the manufacturer/supplier information and adhere to the procedures, recommendations, warnings, and cautions of the manufacturer/supplier for the safe use, handling, storage, and disposal of these materials.

HAZARDOUS MATERIALS WARNINGS

Warnings for hazardous material in this manual are designed to warn personnel of hazards associated with such items when they come in contact with them during actual use. For each hazardous material used, material safety data sheet (MSDS) is required to be provided and available for review by the users. Consult your local safety and health staff concerning any questions on hazardous chemicals, MSDSs, personnel protective equipment requirements, and appropriate handling and emergency procedures.

This Safety Summary gives the complete warnings for hazardous material used in this manual.

NOTES

Notes tell something extra or special a person must know to do the task. They can appear before or after the item they tell about. Notes shall be read and remembered when working on the helicopter.

10. USE OF SHALL, WILL, SHOULD, AND MAY

Within this technical manual the word shall is used to indicate a mandatory requirement. The word will is used to express a declaration of purpose or futurity. The word should is used to indicate a desired result

HOW TO USE THIS MANUAL — continued

or a nonmandatory but preferred method of accomplishment. The word may is used to indicate an acceptable method of accomplishment.

11. TORQUING INFORMATION

a. An inspector shall be present to verify all torques specified in this manual.

b. Each hardware fastener (except types used in sheet metal work) is assigned an applied torque.

c. There are two types of applied torques. They are: special torques and standard torques.

(1) Special torques differ from standard torques as determined by engineers who look at each application. Special torques are given in bold type. Torque wrenches and adapters to be used when a special torque is given are listed under Tools in the initial setup.

(2) Standard torques are listed in Appendix P. Standard torques not listed in Appendix P can be found in TM 1-1500-204-23. Standard torque applies to all fasteners for which a special torque is not specified.

12. INSPECTION INFORMATION

General inspection information is in the front of each chapter or section for the equipment covered in that chapter or section. Inspection criteria peculiar to a specific part, assembly, or component are in the inspection steps of the removal/installation task for that part, assembly, or component.

13. GENERAL MAINTENANCE INFORMATION

The following are considered standard maintenance practices. Instructions about these practices are not normally included in maintenance procedure task steps.

a. Lines shall be tagged before they are disconnected. Tubes and parts shall be capped or plugged when they are disconnected.

b. Used preformed packings, retainers, gaskets, cotter pins, lockwashers, etc., shall be discarded. New parts shall be installed.

c. Packings shall be lubricated before installation. Specific instructions are provided in each maintenance procedure.

d. Tubes and related parts shall be tied out of the way with twine, not lockwire.

e. Disassembly procedures reflect disassembly needed to support total authorized repair. You may not need to disassemble a part as far as described in the task. Follow the steps to disassemble as far as needed to repair/replace worn or damaged parts.

f. Before a component or the disassembled parts of a component are inspected, they are cleaned as required.

g. Components and mating surface areas shall be inspected for serviceable condition before installation.

h. Guide lines shall be used when any item is hoisted overhead.

i. When a nut is tightened or loosened on a bolt, the bolt head shall be held with a wrench.

j. When a coupling nut on a line is tightened or loosened, the mating fitting shall be held with a wrench.

k. A special torque shall be cited when a direction to torque is given. A standard torque is required when no specific torque is given. Standard torque information is located in Appendix P of this manual and TM 1-1500-204-23.

l. When torquing hardware, observe compliance with drag torque as required. To determine drag torque, thread nut onto screw or bolt until at least two threads protrude. The nut shall not contact the mating part. The torque necessary to begin turning the nut is the drag torque. Drag torque is explained in more detail in TM 1-1500-204-23.

m. Chafing is a condition which occurs when two or more components contact each other in such a manner that friction and consequent wear occur. This condition is not acceptable. Proper routing, clamping, and component installation are required.

14. ELECTRICAL WIRING AND CABLING

This technical manual contains removal and installation procedures for wiring harness/cable assemblies that are permanently installed in the helicopter. Wiring harnesses/cable assemblies that can or are normally removed with avionic/electronic equipment are contained in TM 11-1520-248-23. Wiring harnesses/cable assemblies applicable to armament systems are contained in TM 9-1090-214-23&P where these wiring harnesses/cable assemblies are external to the helicopter fuselage.

15. GENERAL REFERENCES

a. Refer to TM 55-1500-323-24 for all electrical tasks of a general nature not peculiar to the OH-58D helicopter.

b. Refer to TM 1-1500-204-23 for mechanical tasks of a general nature not peculiar to the OH-58D helicopter.

c. Refer to TM 1-1520-266-23 for approved nondestructive inspection methods.

16. APPENDICES

The organization and content of Appendices to this manual are provided for reference as required during performance of maintenance tasks.

Appendix A is a list of References.
Appendix B is the Maintenance Allocation Chart and Tool and Test Equipment Requirements List.
Appendix C is the Helicopter Inventory Master Guide.
Appendix D is an Expendable Supplies and Materials List.
Appendix E describes Storage of Helicopter.
Appendix F is Wiring Data.
Appendix G provides Weight and Balance Data.
Appendix H provides Locally Manufactured Items Data.
Appendices J, K and L are reserved for future use.
Appendix M provides Electrical Bonding Procedures.
Appendix N is reserved for future use.
Appendix P provides Standard Torque Values.
Appendix Q provides Corrosion Control Information.
Appendix R is reserved for future use.

Table 1. Organization and Content of Appendix A

Organization	Content
References List	List of additional manuals required for use by maintenance personnel in the performance of their duties.

Table 2. Organization and Content of Appendix B

Organization	Content
Section I	Introduction to Maintenance Allocation Chart.
Section II	Maintenance Allocation Chart.
Section III	Tool and Test Equipment Requirements. Tools and test equipment, including special tools and common tool sets required for each maintenance function as referenced in Maintenance Allocation Chart and individual tasks.
Section IV	List of remarks for each maintenance function as referenced in the Maintenance Allocation Chart.

Table 3. Organization and Content of Appendix C

Organization	Content
Helicopter Inventory Master Guide	Paragraph that provides general information.
Security	Normally, helicopter inventory records are not classified.
Inventoriable Items	List of mission equipment, loose equipment, modification kits, and special environment equipment.
Periods of Inventory	Guidelines on the events and frequency of events that mandate an inventory accounting of listed items.

Table 4. Organization and Content of Appendix D

Organization	Content
Scope	Description of purpose and limits for the Appendix.
Explanation of Columns	Description of the tabular layout by function.
	Expendable Supplies and Material List in both numerical and alphabetical order.

Table 5. Organization and Content of Appendix E

Organization	Content
Section I	General Information including components involved in accidents, Requirements, Storage Categories, Procedures, and Inspection.
Section II	Description of procedures required to store the OH-58D in a flyable state.
Section III	Description of procedures required to store the OH-58D for a short term.
Section IV	Description of procedures required to store the OH-58D for an intermediate period of time.

Table 6. Organization and Content of Appendix F

Organization	Content
Wiring Diagrams	Essential general wiring information about electrical systems and circuits.
Equipment List	Electrical equipment items listed by reference designator, and their nomenclature, location, and access in tabular form.
Wire Repair and Replacement	Wiring repair and replacement data including wire sizes and part numbers, wire construction, marking, soldering, support, and stripping.
Routing and Clamping	Diagrams of OH-58D wire bundle clamping arrangements.

Table 7. Organization and Content of Appendix G

Organization	Content
Section I	General information required for intermediate maintenance personnel to perform their phase of weight and balance control.
Section II	Instruction on proper use of forms and charts required for calculations and documentation of weight and balance data.
Section III	Specific instructions for properly weighing the OH-58D helicopter.

Table 8. Organization and Content of Appendix H

Organization	Content
Part Number Index	Part numbers arranged in alphanumeric order along with figure reference for each part number.
Illustrations of Locally Manufactured Items	Illustrations of locally manufactured items in sufficient detail to enable their construction.

Appendices J, K and L are reserved for future use.

Table 9. Organization and Content of Appendix M

Organization	Content
Section I	Introduction and general information including intended purpose, definitions, electrical bonding classes, and tools.
Section II	Description of tools required.
Section III	Resistance requirements for each class of bonding.
Section IV	Surface preparation and methods of bonding.
Section V	Testing of completed bonds.

Appendix N is reserved for future use.

Table 10. Organization and Content of Appendix P

Organization	Content
Introduction	General information about the Appendix.
Torque Values	General and specific information about torquing procedures including Torque Tables.
Selection and Use of Torque Wrench	Methods of choosing torque wrenches and procedures and calculations.

Table 11. Organization and Content of Appendix Q

Organization	Content
Section I	An introduction that explains purpose of Appendix and defines corrosion.
Section II	Explanation of Inspection and Corrosion Prone Areas as to Purpose of Inspection and Responsibilities for Corrosion Control.
Section III	Preventive Maintenance described in terms of Prevention and Preservation.
Section IV	Required references to appropriate manuals for Corrosion Control Processes and Equipment Requirements.
Section V	Description of Corrosion Prone Areas. Provision of and reference to Inspection and Repair Procedures. Data is both tabular and pictorial.

Appendix R is reserved for future use.

SAFETY SUMMARY

1. GENERAL SAFETY INSTRUCTIONS.

This manual contains procedures which, if not followed properly, can cause injury or long-term health hazards to personnel. This safety summary includes general safety precautions and instructions that must be understood and applied during operation and maintenance to ensure personnel safety. Prior to performing any task, the WARNINGs included in that task shall be reviewed and understood.

2. WARNINGS.

WARNINGs are used in this manual to highlight operating or maintenance procedures, practices, conditions, statements which are considered essential to protection of personnel (WARNING). WARNINGs immediately precede the step or procedure to which they apply. WARNINGs consist of four parts: heading (WARNING or icon [see HAZARDOUS MATERIALS WARNINGS]), or statement of the hazard, maintenance precautions, and possible result if disregarded.

WARNING

Highlights an essential operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury or long-term health hazards to personnel.

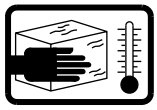
3. HAZARDOUS MATERIALS WARNINGS.

Hazardous Materials Warnings in this manual are provided through use of the Hazard Symbols listed below. Consult the HAZARDOUS MATERIALS DESCRIPTION below or Material Safety Data Sheets (MSDS) (Occupational Safety and Health Administration (OSHA) Form 20 or equivalent) for specific information on hazards, effects, and protective equipment requirements. If you do not have an MSDS for the material involved, contact your supervisor or the base Safety or Bioenvironmental Engineering Office.

3.1 Hazardous Materials and Operations Icons. Icons are used in this manual to identify dangers associated with hazardous materials and certain conditions. The symbols used and their definitions are as follows.

The abstract bug symbol shows that a material may contain bacteria or viruses that present a danger to your life or health.

The symbol of drops of a liquid onto a hand shows that the material will cause burns or irritation of human skin or tissue.



The symbol of a hand in a block of ice shows that the material is extremely cold and can injure human skin or tissue.

The rapidly expanding symbol shows that the material may explode if subjected to high temperatures, sources of ignition, or high pressure.

The symbol of a person wearing goggles shows that the material will injure your eyes.

The symbol of a flame shows that a material can ignite and burn you.

The symbol of a skull and crossbones shows that a material is poisonous or is a danger to life.

The symbol of three circular wedges shows that the material emits radioactive energy and can injure human tissue or organs.

The symbol of a human figure in a cloud shows that vapors of a material present a danger to your life or health.

The symbol of a lightning bolt shows that you may contact voltage and current that may present a danger to your life or health.

To avoid violent reactions that can cause personal injury, always pour acid into water, never water into acid.

The symbol of a head with the ear highlighted shows that the noise level may injure your hearing.

3.2 Hazardous Materials Description. The following hazardous materials are used in this manual. Each icon represents certain hazards as described above. Beneath the icons is the hazardous material name. Below the icons and material name is a description of the hazardous material. Only the icons and material name are used in the text of the manual. If a full description of the hazardous material is required while performing procedures in this manual, use the material name to locate the appropriate description below.

ACETONE

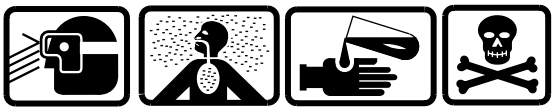
Acetone is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not smoke while using acetone, and do not use it where others are smoking. Prolonged inhalation of vapor can irritate eyes and mucous membranes and can cause dizziness and headache. If any liquid contacts skin, wash with soap and water. Immediately remove solvent-saturated clothing. If vapors cause drowsiness, go to fresh air. In all cases get immediate medical attention. When handling large quantities of liquid (more than a gallon), use at air-exhausted workbench. Wear approved gloves. Store solvent and dispose of liquid-soaked rags in approved metal safety container. Metal containers of solvent must be grounded to maintain electrical continuity.

ACRYLIC LACQUER

Acrylic lacquer is flammable. Keep away from open flames, sparks, and heat. Overexposure may cause coma, headache, narcotic effect, confusion, depression, irritation of skin, eyes, and respiratory system. Remove contaminated clothing. Wipe off with towel or cloth. Remove remainder with mineral spirits or lacquer remover and thoroughly wash skin area with soap and water. Immediately flush eyes with water for 15 minutes. If inhaled, move to fresh air. If breathing has stopped perform resuscitation. In all cases get immediate medical attention. When working with acrylic lacquer, wear approved protective gloves, goggles or safety glasses, protective clothing, and approved respirator. Use in a well-ventilated area.

ADHESION PROMOTER

Adhesion promoter is flammable; keep away from sparks, flames, and non-explosion proof devices. Inhalation may cause nose and throat irritation, headache, drowsiness, weakness, or exhaustion. Prolonged or repeated skin contact may cause irritation. Vapor and liquid may cause eye irritation. Ingestion may cause intoxication and gastrointestinal irritation. Prolonged overexposure to ethanol can have adverse effects on liver. If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Remove contaminated clothing and wash with soap and water. Flush eyes with plenty of water for 15 minutes while holding eyelids open. If ingested, dilute with one to two glasses of water or milk. Induce vomiting by sticking finger down throat. In all cases, get immediate medical attention. When working with adhesion promoter, wear approved respirator, goggles, and rubber gloves. Work in well-ventilated area.

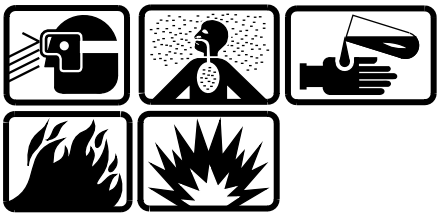


ADHESIVE, EA934NA

Adhesive can cause allergic reaction, skin sensitization, or gastrointestinal irritation. Contact with eyes can cause severe burns. Wash skin immediately with soap and water. Flush eyes with water for at least 15 minutes. Get immediate medical attention in event of eye contact with adhesive. Wash contaminated clothing before reuse. Wear approved respirator in closed area. Work in well-ventilated area using approved rubber gloves and safety glasses or goggles.

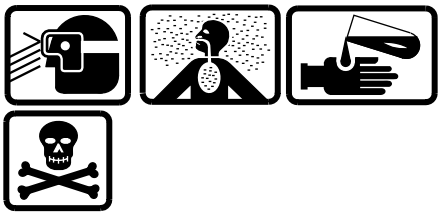
ADHESIVE, MMM-A-1617, TYPE I, II, OR III

Adhesive may cause irritation to skin, eyes, and respiratory system. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. In all cases get immediate medical attention. When working with adhesive, wear approved protective gloves, goggles or faceshield, and respirator approved for organic solvents. Use in a well-ventilated area away from open flame, spark sources, and heat.



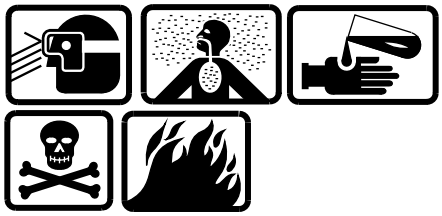
ADHESIVE PRIMER

Adhesive primer is flammable and its vapor is explosive. Keep away from heat, open flame or other sources of ignition. Inhalation will cause irritation to the respiratory tract. Symptoms are headache, nausea, dizziness, and drowsiness. Move to fresh air and administer oxygen. If skin or eyes are affected wash skin with soap and water and flush eyes with water for 15 minutes. In all cases get immediate medical attention. When working with adhesive primer, wear approved respirator, rubber gloves and splashproof goggles and faceshield. Work in well-ventilated area.



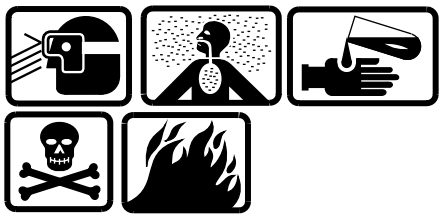
ADHESIVE VAPORS

Adhesive vapors may cause irritation of eyes, nose, and respiratory system. Eye and skin contact with material may cause irritation. If ingested, may cause gastric distress. Flush eyes with water for 15 minutes. Wash skin with soap and water. If inhaled, move to fresh air. In all cases get immediate medical attention. Work in a well-ventilated area. Wear approved gloves and safety glasses.



ANTI-ICING/DEICING FLUID

Anti-icing/Deicing fluid contains diluted alcohol. Alcohol is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not use while smoking or while others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. If vapors cause drowsiness, go to fresh air. Contact with skin may cause irritation. If liquid touches skin or eyes, flush thoroughly with water. Remove contaminated clothing.



ANTISEIZE COMPOUND

Antiseize compound is flammable; do not use near open flames, welding areas, or on hot surfaces. When decomposed by heating, toxic gases are released. Do not use while smoking or when others are smoking. Liquid can cause severe skin and eye irritation. Inhalation of vapor can cause drowsiness, headache and unconsciousness. Wash affected skin with soap and water. Flush eyes with water for at least 15 minutes. If drowsiness occurs, go to fresh air. Seek medical attention if overexposed. Use approved respirator, gloves, and goggles for prolonged use. Dispose of liquid soaked rags in an approved, grounded metal safety container.

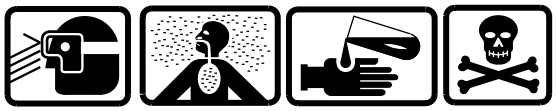
CHEMICAL CONVERSION MATERIALS

Chemical conversion materials are strongly oxidizing and are a fire hazard in contact with acid, reducing agents, and combustible and

readily oxidizing materials; separate storage is mandatory. Thoroughly rinse rags and containers contaminated with chemical conversion materials and dispose of in a fireproof container. Contact with skin and eyes can cause burns. Breathing of dust or vapors can cause ulceration of mucous membranes. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. If ingested, drink milk of magnesia, aluminum hydroxide gel, or lime water followed by large amounts of water. In all cases get immediate medical attention. Wash contaminated clothing before wearing. When working with chemical conversion materials, wear approved respirator, rubber apron, gloves, and goggles or faceshield in a well-ventilated area away from heat, open flames or sparks. Follow approved toxic waste disposal procedures. Read manufacturers label for additional information.

CHROMIC ACID

Chromic acid is highly reactive; do not mix with organic or oxidizable materials such as paper or wood. When mixing solutions, add acid slowly to water, not water to acid. Any contact with skin, or inhalation of vapors and powder can irritate skin and can cause skin ulcers. Repeated or prolonged exposure can cause permanent injury. If any liquid or powder contacts skin, flush affected area with water, and immediately change contaminated clothing. If skin ulcers appear, get immediate medical attention. When handling dry material or solution at air-exhausted workbench, wear approved gloves, apron, and goggles. When handling dry material or solution at unexhausted workbench, wear approved respirator, gloves, apron, and long sleeves.

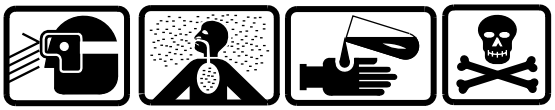


CLEANING COMPOUND

Aircraft cleaning compound is flammable and is toxic to the skin by absorption and to the liver and kidneys. It can cause irritation of the eyes and respiratory system, skin irritation and headache. Thoroughly wash skin area with water and immediately flush eyes with water for 15 minutes. If ingested, do not induce vomiting. In all cases get immediate medical attention. When working with cleaning compound, wear approved chemical cartridge respirator, rubber gloves, safety goggles, and protective clothing. Keep away from heat and open flames. Use in a well-ventilated area.

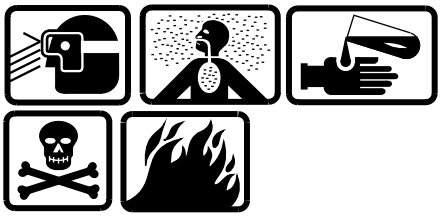
COMPRESSED AIR

When using compressed air for any cleaning or drying operation, do not exceed 30 psig at the nozzle. Eyes can be permanently damaged by contact with liquid or large particles propelled by compressed air. Inhalation of air-blown particles or solvent vapor can damage lungs. If injury occurs, get immediate medical attention. When using air for drying or cleaning at an air-exhausted workbench, wear approved goggles or faceshield. When using air for drying or cleaning at an unexhausted workbench, wear approved respirator and goggles.



CORROSION PREVENTIVE COMPOUND, MIL-C-11796

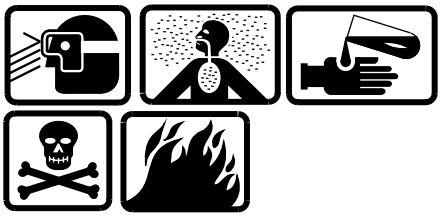
If solution of petrolatum corrosion preventive compound is decomposed by heat, toxic gases are released. Prolonged contact with solution or mist can cause skin irritation. If there is any prolonged contact with skin, wash contacted area with soap and water. If solution contacts eyes, flush eyes with water immediately. Remove saturated clothing. If solution is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling solution, wear approved rubber gloves. If prolonged contact with mist is likely, wear approved respirator.



CORROSION PREVENTIVE COMPOUND, MIL-C-16173

Corrosion preventive compound is combustible; do not use near open flames, near welding areas, or on hot surfaces. Prolonged contact with skin

can cause skin irritation. Prolonged inhalation of vapor can cause dizziness, headache, and intoxication. If there is any prolonged contact with skin, wash affected area with soap and water. If liquid contacts eyes, flush eyes thoroughly with water. Remove contaminated clothing. If vapors cause light-headedness, go to fresh air. If liquid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid or when applying it at air-exhausted workbench, wear approved gloves. When handling liquid or when applying it at unexhausted workbench, wear approved gloves and goggles. Dispose of liquid-soaked rags in approved metal container.



CORROSION PREVENTIVE COMPOUND, MIL-C-27725

Corrosion preventive compound is flammable. Keep away from ignition sources. Overexposure may cause headache, dizziness, nausea, skin drying, eye irritation, and respiratory irritation. Corrosion preventive compound may also cause narcotic effects, shortness of breath and could affect the central nervous system. Thoroughly wash with soap and water and apply emollient cream or lotion and immediately flush eyes with water for 15 minutes. If inhaled move to fresh air. In all cases get immediate medical attention. When working with corrosion preventive compound, wear approved protective gloves, goggles, and clothing. Use in a well-ventilated area. If adequate ventilation is not available, wear approved respirator.

CORROSION REMOVING AND METAL CONDITIONING COMPOUND

Corrosion removing and steel protecting compound causes skin irritation. Avoid contact with skin and eyes. If irritation occurs, get immediate medical attention. Wear approved gloves and goggles or faceshield when handling. Wash hands thoroughly after handling.

DENATURED ETHYL ALCOHOL

Denatured ethyl alcohol and its vapor are flammable and explosive — do not use it where others are smoking. POISON — do not ingest. Ingestion will cause vomiting, stupor, and collapse. Inhalation of vapor may cause headache and drowsiness. If vapors cause drowsiness, go to fresh air. Immediately remove wet clothing. When working with denatured ethyl alcohol, wear approved respirator, gloves, and goggles. If splashing could occur, wear an approved faceshield over the goggles. In case of contact with eyes, flush with water for at least 20 minutes and obtain medical attention. Dispose of liquid soaked rags in approved metal container. Metal containers must be grounded to maintain electrical continuity.

DRILLING OPERATIONS

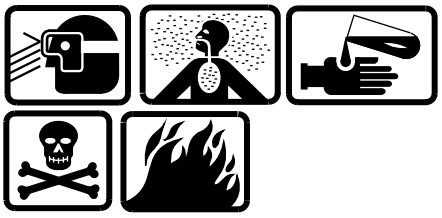
Metallic structures drilling operations produce airborne metallic dust particles that are harmful to respiratory tract and eyes. Avoid breathing dust and use eye protection when drilling. Avoid composite materials that are toxic to skin, eyes and respiratory tract. When drilling advanced composite materials, avoid inhalation of dust and wear protective gloves and eye protection.

DRY LUBRICANT

Overexposure can cause nausea, vomiting, and irritation of skin, eyes, and respiratory system. If symptoms occur, seek fresh air. Wash affected skin with soap and water. Flush eyes with water for 15 minutes. If ingested do not induce vomiting. In all cases, seek medical attention. Wear approved protective gloves, goggles, and respirator.

DRYCLEANING SOLVENT

Drycleaning solvent is combustible; do not use near open flames, near welding areas, or on hot surfaces. Prolonged contact of skin with liquid can cause skin irritation. Repeated inhalation of vapor can irritate nose and throat and can cause dizziness. If any liquid contacts skin or eyes, immediately flush affected area thoroughly with water. Remove solvent-saturated clothing. If vapors cause dizziness, go to fresh air. In all cases get immediate medical attention. When handling liquid or when applying it in an air-exhausted, partially covered tank, wear approved gloves. When handling liquid or when applying it at an unexhausted, uncovered tank or workbench, wear approved respirator and goggles.

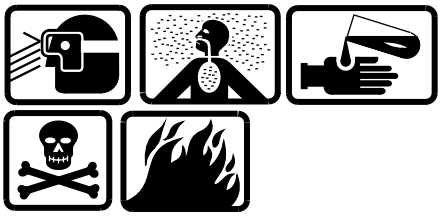


DYNASOLVE 165

Dynasolve 165 contains powerful organic solvents. It is harmful if inhaled or swallowed. Avoid breathing vapors or mist. Keep away from heat and flame. Avoid contact with eyes and skin. Wear gloves, safety goggles, and protective clothing when handling. Use with adequate ventilation. Contact of skin with liquid or inhalation of vapor can cause severe burns, and respiratory system irritation. If any solution, liquid, or vapor contacts skin or eyes, flush affected areas thoroughly with water. Immediately change any contaminated clothing. If vapors are inhaled, go to fresh air. In all cases get immediate medical attention.

ELECTRIC SHOCK

To prevent electric shock, ensure electrical power is off before working on helicopter. Remove watches, rings and other jewelry before working on electrical circuits. Voltage and/or current may be contacted that could present a threat to your health or life. If voltage/current is contacted and breathing ceases, CPR must be administered by qualified personnel. Seek medical aid. For electrical shock safety steps and procedures, refer to TM 1-1500-204-23 and TB 385-4.



EPOXY PRIMER COATING

Epoxy primer coating is flammable. It contains lead and may cause irritation of nose, throat, eyes, skin, respiratory system, and nervous system. Overexposure may result in headache, narcotic effect, nervousness, drying of skin, and possible death. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. If ingested, do not induce vomiting. In all cases get immediate medical attention. When working with epoxy primer coating wear approved respirator, chemical splash goggles, solvent resistant gloves, apron, protective clothing, and barrier cream. Work in a well-ventilated area.

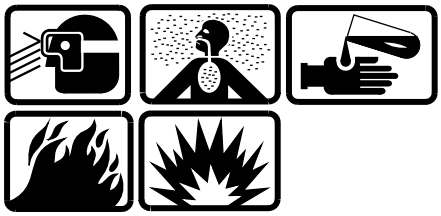
EPOXY RESIN

Filled epoxy resin may cause skin and eye irritation. Thoroughly wash skin area with soap and warm water and immediately flush eyes with water for 15 minutes. In all cases get immediate medical attention. When working with epoxy resin, wear approved protective gloves and goggles. Use in a well-ventilated area and avoid breathing vapors.

FINGERPRINT REMOVER

Fingerprint remover is flammable. Do not use near heat or flames. Overexposure may cause skin and eye irritation, dizziness, headache and nausea. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. If inhaled, move to fresh air. In all cases get immediate medical attention. When working with fingerprint remover wear approved solvent

resistant gloves, goggles or faceshield, and respirator.

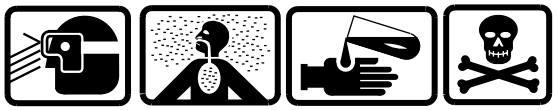


FLUORESCENT PENETRANT

Prolonged or repeated inhalation of powders and vapors of cleaning solvent, developers, and emulsifiers used in fluorescent penetrant inspection can irritate mucous membrane areas of the body. Continual exposure to penetrant inspection materials can irritate the skin. Direct exposure of eyes to light and prolonged exposure of skin to light can inflame and damage eyes and skin. Wear approved neoprene gloves when handling penetrant inspection materials. Keep insides of gloves clean. Store all pressurized spray cans containing penetrants, developers, and emulsifiers in a cool, dry area protected from direct sunlight, heat, and open flames. Temperatures higher than 120 °F (49 °C) may cause pressurized can to burst and cause injury. If direct eye contact with light causes eye problems, get immediate medical attention. When using black light for fluorescent inspections, wear approved safety glasses.

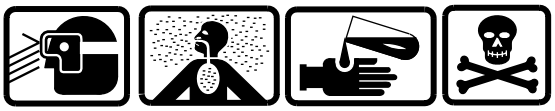
GREASE

Avoid any skin contact with grease. Wash hands thoroughly with soap and water after handling grease.



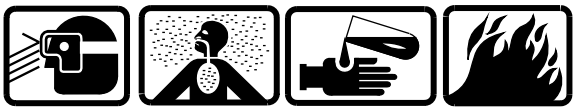
HYDRAULIC FLUID, MIL-H-5606

MIL-H-5606 hydraulic fluid is flammable. Flashpoint is 180 °F (82 °C). When hydraulic fluid is decomposed by heat, toxic gases are released. Prolonged contact with liquid or mist can cause skin irritation. If there is any prolonged contact with skin, wash contacted area with soap and water. If liquid contacts eyes, flush eyes with water immediately. Remove saturated clothing. If fluid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid, wear approved rubber gloves. If prolonged contact with mist is likely, wear approved respirator.



HYDRAULIC FLUID, MIL-H-83282

MIL-H-83282 hydraulic fluid is flammable. Flashpoint is 400 °F (204 °C). When hydraulic fluid is decomposed by heat, toxic gases are released. Prolonged contact with liquid or mist can cause skin irritation. If there is any prolonged contact with skin, wash contacted area with soap and water. If liquid contacts eyes, flush eyes with water immediately. Remove saturated clothing. If fluid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid, wear approved rubber gloves. If prolonged contact with mist is likely, wear approved respirator.



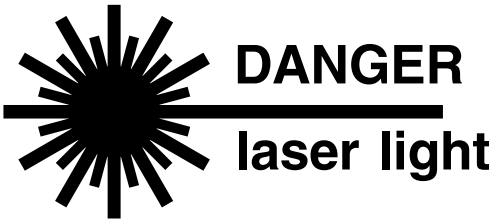
ISOPROPYL ALCOHOL

Isopropyl alcohol is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not use while smoking or while others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Contact with skin may cause irritation. If liquid touches skin or eyes, flush thoroughly with water. Remove contaminated clothing. If vapors cause drowsiness, go to fresh air. When handling large quantities (greater than 1 gallon), work at air-exhausted workbench or covered tank. Store solvent and liquid-soaked clothes in an approved, grounded metal container.

JET FUEL

Jet fuel is flammable; do not use near open flames, welding areas, or on hot surfaces. Do not

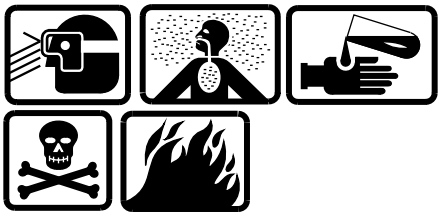
handle or store near strong oxidants, e.g., liquid oxygen or hypochlorite. Do not smoke when using jet fuel and do not use it where others are smoking. Contact of eyes with liquid can cause severe irritation and blurred vision. Inhalation of vapor may cause irritation, headache, nausea, and dizziness. If liquid contacts eyes, flush eyes thoroughly with water for a minimum of 15 minutes. Immediately remove fuel-saturated clothing. If vapors cause dizziness, go to fresh air. If liquid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling large quantities of liquid (more than 1 gallon) at an unexhausted workbench, wear approved respirator and goggles or faceshield. Dispose of liquid-soaked rags in approved metal container. Contaminated clothing shall be laundered prior to reuse. Metal containers of fuel must be closed and grounded to maintain electrical continuity.



The laser rangefinder/designator (LRF/D) is very dangerous. Looking at the laser beam or its reflection from a shiny surface can cause permanent blindness. Under noncombat conditions, the laser shall be used only in controlled areas and at times specified by a range control officer.

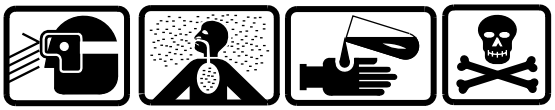
LHE CADMIUM SOLUTION

Cadmium brush plating solution is toxic and may cause damage to skin, eyes, and mucous membranes. Overexposure may cause skin sensitization and skin irritation. Thoroughly wash skin area with water and immediately flush eyes with water for 15 minutes. If vapor causes drowsiness, go to fresh air. In all cases get immediate medical attention. Wear approved rubber gloves, apron, boots, goggles or faceshield, and activated carbon respirator. Work in well-ventilated area. Wash hands thoroughly before eating or smoking.



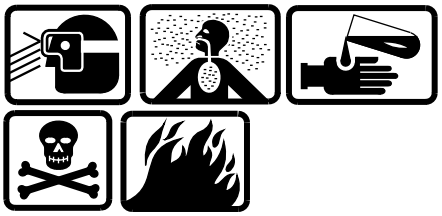
LUBRICANT, SOLID FILM

Solid film lubricant is flammable. Do not use near fire or open flame. Lubricant may cause irritation to skin and upper respiratory system. Inhalation may cause a narcotic effect and light headedness. Swallowing may be fatal. Thoroughly wash skin area with soap and water and immediately flush with water for 15 minutes. If ingested, do not induce vomiting. In all cases get immediate medical attention. When working with lubricant, wear approved rubber gloves, respirator, and safety glasses or goggles with unperforated side shields. Work in a well-ventilated area.



LUBRICATING OIL

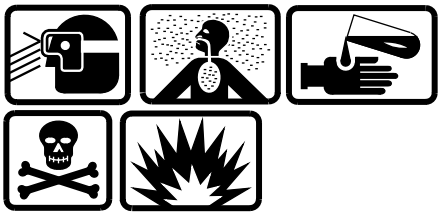
If lubricating oil is decomposed by heat, toxic gases are released. Prolonged contact with liquid or mist may cause skin irritation. If there is any prolonged contact with skin, wash area with soap and water. If oil contacts eyes, flush eyes with water immediately. Remove saturated clothing. If oil is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid, wear approved rubber gloves. If prolonged contact with mist is likely, wear approved respirator.



NAPHTHA/NAPTHALENE

Naphtha/Naphthalene is combustible; do not use it near welding areas, near flames, or on hot surfaces. Avoid prolonged or repeated contact with liquid. Contact of skin with liquid can cause irritation. Inhalation of vapors can cause irritation, giddiness, and drowsiness. If liquid contacts eyes, flush eyes thoroughly with water. If there is any prolonged skin contact, wash contacted area with

soap and water. If vapors cause drowsiness, go to fresh air. Remove solvent-saturated clothing. If liquid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid in an air-exhausted, partially covered tank, wear approved gloves. When handling liquid in an open, unexhausted container, wear approved rubber gloves and goggles. If contact with vapor is likely, wear an approved respirator. Dispose of liquid-soaked rags in approved metal container. Metal containers of liquid must be grounded to maintain electrical continuity.



NITRIC ACID

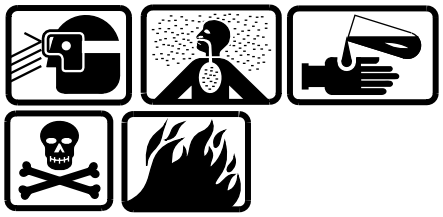
Nitric acid is highly reactive; do not mix with combustible organics or other oxidizable materials such as wood, paper, and cloth. When heated, toxic gases are released. When mixing solutions, add acid slowly to water, not water to acid. Contact of skin with liquid or inhalation of mist can cause severe burns, respiratory system irritation, and chronic bronchitis. If any solution, liquid, or mist contacts skin or eyes, flush affected area thoroughly with water for a minimum of 15 minutes. Immediately change any contaminated clothing. If mist is inhaled, go to fresh air. In all cases get immediate medical attention. If handling solution or concentrated liquid in air-exhausted covered tank, wear approved gloves and apron, and wear approved goggles or faceshield. When handling solution or concentrated liquid in open tank, wear approved respirator, full-body clothing, gloves, and goggles.

NOISE HAZARD

Personnel hearing can be PERMANENTLY DAMAGED if exposed to constant high noise levels of 85 dB (A) or greater. Wear approved hearing protection devices when working in high noise level areas. Hearing loss occurs gradually but becomes permanent over time. Hearing protection is required.

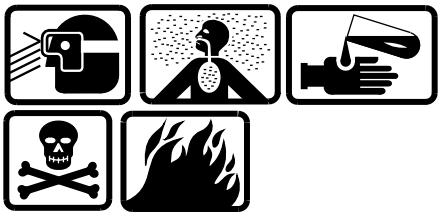
PAINT REMOVER

Paint remover can cause severe burns, narcotic effects, headache, dizziness, and nausea. In some cases it may cause elevated blood pressure, unconsciousness, shock, and death. Contact with eyes may cause blindness. Avoid contact with flammable liquids. Contact with alkali metals, powdered magnesium, and aluminum may cause a violent reaction. Thoroughly wash skin area with water and immediately flush eyes with water for 15 minutes. In all cases get immediate medical attention. When working with paint remover wear approved respirator (manufacturer recommends approved fresh air mask), approved faceshield or goggles, neoprene or Viton gloves, solvent resistant boots, and apron. Work in a well-ventilated area. Read manufacturers label for specific instruction due to variations of each product.



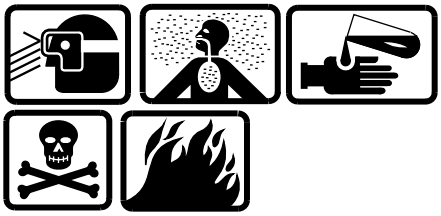
PLASTIC POLISH COMPOUND

Plastic polish compound is flammable. Keep away from heat, open flame or other sources of ignition. Plastic polish compound may be poisonous if inhaled or absorbed through the skin. Vapors may cause dizziness or suffocation and are an irritant to the skin and eyes. Move to fresh air and thoroughly wash skin with water and flush eyes with water for 15 minutes. In all cases, get immediate medical attention. Wear approved safety glasses or goggles and gloves. Use in a well-ventilated area.



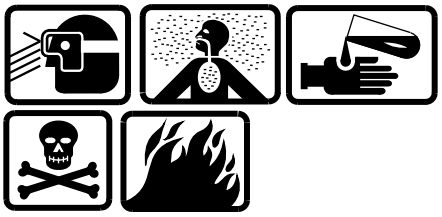
POLYURETHANE COATING

Polyurethane coating is flammable. Keep away from open flame, sparks, heat, and organic material. Exposure can cause skin, eye, nose, throat, and respiratory system irritation. Prolonged exposure may cause headache, allergic sensitivity, narcotic effect, nausea, and vomiting. Ingestion causes lead poisoning. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. If inhaled, move to fresh air. In all cases get immediate medical attention. When working with polyurethane coating, wear approved chemical resistant rubber gloves, goggles, respirator, and protective clothing. Use in a well-ventilated area.



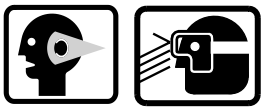
POLYURETHANE CONDUCTIVE COATING

Polyurethane conductive coating is flammable; do not use near open flames, near welding areas, or on hot surfaces. Contact with liquid or vapor can cause skin or eye irritation. Prolonged overexposure can result in kidney and liver damage, headache, nausea, vomiting, dizziness or loss of consciousness. Prolonged occupational overexposure can result also with permanent brain and nervous system damage. Deliberately concentrating and inhaling the contents may be harmful or fatal. After prolonged skin contact, wash contacted area with lukewarm water for 15 minutes. Remove contaminated clothing promptly. If vapors cause dizziness, go to fresh air, in all cases get immediate medical attention. Dispose of contents in approved metal container. Follow approved toxic waste disposal procedures.



RESINS AND HARDENERS

Resins and hardeners are flammable; do not use near open flames, welding areas, or on hot surfaces. When decomposed by heating, toxic fumes are released. Inhalation of vapor can cause irritation, drowsiness, and headache. Contact with eyes can cause severe burns. Flush eyes with water for at least 15 minutes. Wash skin immediately with soap and water. In all cases get immediate medical attention. When mixing or applying liquid in air-exhausted paint spray booth, wear approved gloves and goggles. When mixing or applying liquid in unexhausted work area, wear approved gloves, long sleeves, apron, goggles, and respirator. Metal containers of solution must be grounded to maintain electrical continuity.



RIVETING OPERATIONS

Bucking rivets produces high levels of noise. Hearing can be PERMANENTLY DAMAGED if exposed to constant high noise levels of 85 dB (A) or greater. Wear approved hearing protection devices when working in high noise level areas. Hearing loss occurs gradually but becomes permanent over time. Hearing protection is required. Wear goggles or faceshield when riveting to prevent damaging eyes.

SANDING OPERATIONS

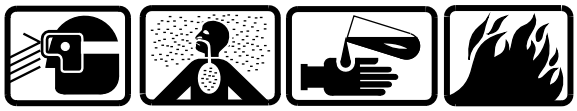
Avoid prolonged or repeated contact with sanding, power grinding, or drilling dust. Inhalation of dust may cause temporary coughing and wheezing, respiratory system irritation, and permanent lung problems. If dust contacts eyes, flush them thoroughly with water. If coughing or wheezing persists, get immediate medical attention. When using an air-exhausted grinding wheel, wear approved respirator and goggles or faceshield.

SEALING COMPOUND, MIL-S-22473

Anaerobic sealing compound is flammable; do not use near open flames or welding areas. Avoid prolonged exposure to light. Avoid materials such as peroxide or other strong oxidizing agents, iron rust or carbon monoxide/dioxide. Anaerobic sealing compound can cause dermatitis. It may also cause delayed eye and skin irritations and skin sensitivity. Thoroughly wash skin area with water and immediately flush eyes with water for at least 15 minutes. If ingested, do not induce vomiting. Keep individual calm. In all cases, get immediate medical attention. When working with anaerobic sealing compound, wear approved rubber apron, boots, gloves, and goggles or faceshield in well-ventilated area.

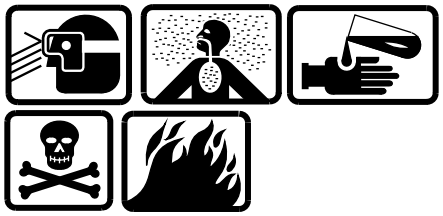
SEALING COMPOUND, MIL-S-8784, MIL-S-8802, MIL-S-83249

Sealing compound is flammable. Do not use near heat, open flames, or sparks. Overexposure can cause irritation of skin and eyes, headache, nausea, vomiting, and systemic problems. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. In all cases get immediate medical attention. Wear approved protective gloves and goggles. Avoid breathing of vapors and prolonged or repeated skin contact.



SHELLAC

Shellac is flammable. Keep away from heat, sparks, and open flame. All electrical equipment must be explosion proof. Shellac may cause irritation of eyes, nose, and throat. Headache, intoxication, and drowsiness may occur. In case of skin contact, flush contact area thoroughly with water. For inhalation, remove to fresh air and give oxygen. In all cases, get immediate medical attention. Use shellac in well-ventilated area. When handling wear approved rubber gloves and safety goggles.

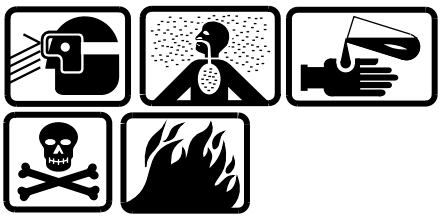


SILICONE

Conformal coating is flammable. Do not use near open flame or high temperatures. Repeated or prolonged contact or inhalation of vapors can cause skin and eye irritation, or damage to lungs, blood, liver, kidneys, and nervous system. Existing eye, skin, and respiratory disorders can be aggravated. Short-term inhalation of vapors can cause drowsiness and irritation of nose and throat. Use only in a well-ventilated area. If vapors are inhaled, go to fresh air. Short-term skin contact can cause irritation, redness, and swelling. Wipe off skin contact area and flush with fresh water. Flush eyes with with fresh water for 15 minutes. Get immediate medical attention if irritation develops or ill effects persist. If swallowed, do not induce vomiting. Vomiting can cause serious lung damage. If vomiting occurs, keep head below hips to prevent entry of liquid into lungs. When handling, wear approved protective gloves, goggles, and respirator with organic vapor cartridge. Metal storage containers must be grounded to eliminate static electricity fire hazard.

THINNER

Paint thinner is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using paint thinner, and do not use it where others are smoking. Contact with liquid or vapor can cause skin, nose, throat, and eye irritation, drowsiness, headache, nausea, and vomiting. After any prolonged contact of liquid with skin, wash contacted area with soap and water. Remove solvent-saturated clothing. If vapors cause drowsiness, go to fresh air. In all cases get immediate medical attention. When handling liquid at air-exhausted workbench wear approved gloves, goggles, and long sleeves. When handling liquid or liquid-soaked cloth in open unexhausted area, wear approved respirator, gloves, and goggles. Dispose of liquid-soaked rags in approved metal container. Metal containers must be grounded to maintain electrical continuity.

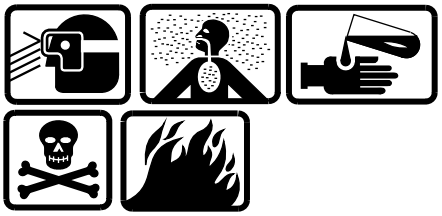


URETHANE ADHESIVE

Urethane Adhesive Components A and B are flammable. Keep away from heat, sparks, or any source of ignition.

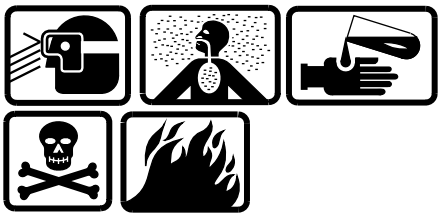
Overexposure to Component A may cause headache, nausea, and skin irritation and is an irritant to the upper respiratory system. In case of skin or eye contact, flush thoroughly with water. If inhaled remove to fresh air. If swallowed give large amounts of water. In all cases get immediate medical attention.

Overexposure to Component B, which is mildly toxic, may cause headache and mild irritation of nose, throat, and eyes. Contact with skin may cause irritation and dryness. Ingestion may cause vomiting and stomach cramps. In case of ingestion, get immediate medical attention. If inhaled remove to fresh air and give artificial respiration. In case of skin contact, remove contaminated clothing and wash with soap and water. Flush eyes immediately with large quantities of water. In all cases get immediate medical attention. Use in well-ventilated area and wear approved respirator, goggles, and rubber gloves.



ZINC CHROMATE PRIMER

Zinc chromate primer is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using zinc chromate primer, and do not use it where others are smoking. Contact with liquid or vapor can cause skin or eye irritation, dizziness, and headache. Prolonged inhalation can result in kidney and liver damage. After prolonged skin contact, wash contacted area with soap and water. If vapors cause dizziness, go to fresh air. In all cases get immediate medical attention. When handling small quantities (less than 1 gallon), wear approved gloves. When handling large quantities of liquid (greater than 1 gallon), at unexhausted workbench, wear approved respirator, gloves, goggles, apron, and long sleeves. Do not eat, smoke, or carry smoking materials in areas where liquid is handled. Dispose of liquid-soaked rags in approved metal container. Zinc chromate primer contains chromates. Follow approved toxic waste disposal procedures.



ZINC CHROMATE PUTTY

Zinc chromate putty is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using zinc chromate putty, and do not use it where others are smoking. Contact with liquid or vapor can cause skin or eye irritation, dizziness, and headache. Prolonged inhalation can result in kidney and liver damage. After prolonged skin contact, wash contacted area with soap and water. If vapors cause dizziness, go to fresh air. In all cases get immediate medical attention. When handling small quantities (less than 1 gallon), wear approved gloves. Do not eat, smoke, or carry smoking materials in areas where putty is handled. Dispose of putty in approved

metal container. Zinc chromate putty contains chromates. Follow approved toxic waste disposal procedures.

4. SAFETY PRECAUTIONS.

The following safety precautions shall be observed while performing procedures in this manual.

- Dangerous voltages are present at system connectors. Ensure power is OFF prior to connecting or disconnecting cables.
- Do not wear metal frame glasses, rings, watches, or other metal jewelry while working on electronic equipment.
- Some cleaning materials specified herein are flammable and/or toxic. Keep away from open flame or other ignition sources. Provide adequate ventilation and avoid skin/eye exposure.
- Cleaning with compressed air can create airborne particles that may enter eyes or penetrate skin. Pressure shall not exceed 30 psig. Wear goggles. Do not direct compressed air against skin.
- For electrical shock safety steps and procedures, refer to TM 1-1500-204-23 and TB 385-4.

CHAPTER 1

INTRODUCTION

1-1. INTRODUCTION

This chapter contains standard data and tasks required to support maintenance.

Section I. GENERAL INFORMATION

1-2. SCOPE

Type of Manual: Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM).

Model Number and Equipment Name: OH-58D Improved Observation/Armed Helicopter, OH-58D(R) Digital Observation/Armed Helicopter.

NOTE

Model number version designator (I) has been deleted.

Purpose of Equipment:

- Provide battlefield reconnaissance, security, and aerial observation during day, night, and reduced visibility operations
- Improve the effectiveness of attack helicopter, air cavalry and field artillery units
- Supplements attack helicopter, air cavalry operations with defensive and offensive weapons capabilities.

1-3. MAINTENANCE FORMS AND RECORDS

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).

Accidents involving injury to personnel or damage to material will be reported on DA Form 285 (Accident Report) in accordance with AR 385-40. Explosives and ammunition malfunctions will be reported in accordance with AR 75-1.

1-4. DESTRUCTION OF ARMY MATERIAL TO PREVENT ENEMY USE

Refer to TM 750-244-1-5.

1-5. PREPARATION FOR STORAGE OR SHIPMENT

Refer to TM 1-1520-248-S and Appendix E of this manual.

1-6. QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Refer to FM 1-500.

1-7. COMMON NAME, NAMES, AND DESIGNATION

There is no approved nomenclature used in this manual that differs from official nomenclature. For approved abbreviations and acronyms, refer to the Glossary.

1-8. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your OH-58D helicopter needs improvement, let us know. Send us a report. 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.

The timetables and specific instructions for completing forms SF368 (Product Quality Deficiency Reports) are covered in DA PAM 738-751.

Completed forms SF368 may be mailed to us at:

Commander, U.S. Army Aviation and Missile Command
ATTN: AMSAM-MMC-LS-P
Redstone Arsenal, AL 35898-5230

We'll send you a reply.

1-9. WARRANTY INFORMATION

Various aircraft components are under warranty, and are identified by an AMSAV-Q overprint 2 to DA Form 2408-15. The Warranty Identification Card is contained in the historical records logbook. See supply letters A8-86, 3 April 1986, A17-86, 12 June 1986, and DA PAM 738-751 for additional information and appropriate action as required.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-10. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

EQUIPMENT CHARACTERISTICS

- Provides battlefield reconnaissance, security, aerial observation, and target acquisition.
- Easily transported by air.
- Totally maneuverable in the nap-of-the-earth (NOE) environment.
- Reduced crew workload under combat conditions.
- OH-58D and OH-58D(R) provide defensive capability against air or ground threats and offensive attack capabilities.

CAPABILITIES AND FEATURES

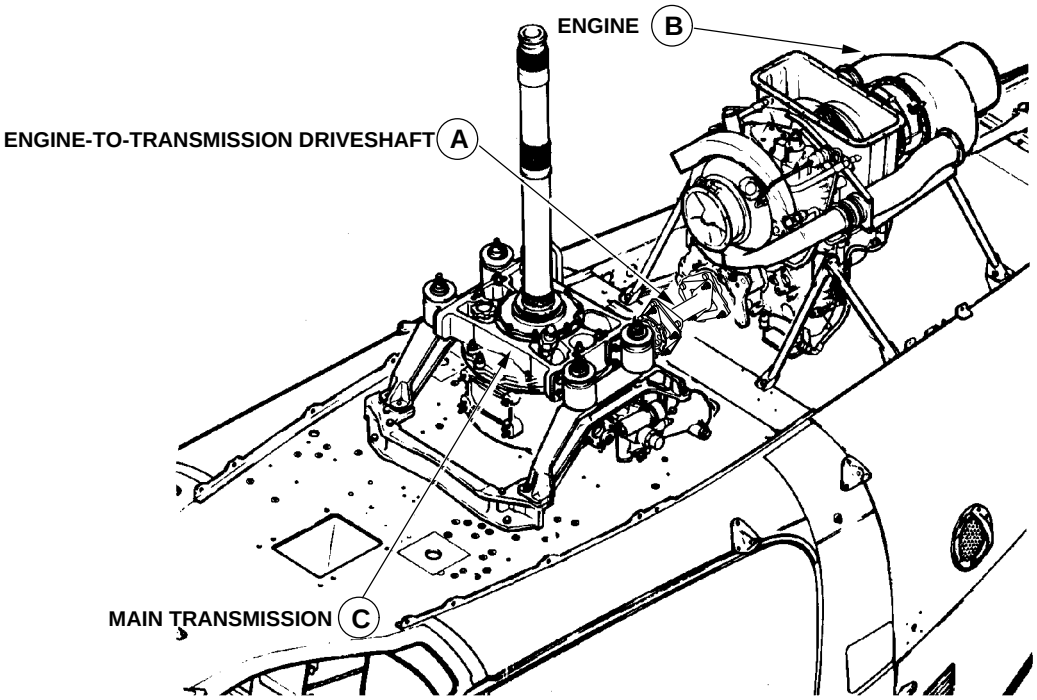
- Mast mounted sight (MMS) provides the capability to search for, acquire, track, laser range, and laser designate tactical targets for precision guided munitions under both day and night conditions while the helicopter is concealed.
- Electronic Supervisory Control (ESC) for governing fuel.
- Wire strike protection system.
- High agility main rotor system with autorotational characteristics.
- Composite, ballistic-tolerant rotor blades.
- Improved thrust tail rotor.
- Reserve power for hot-day, high altitude performance.
- Run dry transmission.
- Vibration isolated airframe.
- Scout mission communication and navigation systems.
- Crashworthy and ballistically tolerant fuel system.
- Mission-tailored cockpit displays.
- Reduced workload cockpit.
- Night vision goggles.
- Stability and control augmentation system (SCAS) for flight controls.
- Hydraulic system to reduce pilot effort when operating cyclic and collective controls.
- Control display system (CDS) to provide flight, engine, and navigation displays.
- OH-58D and OH-58D(R) include universal weapons pylons (UWP) for mounting multiple weapons systems. Weapons systems are fully integrated into the CDS. Weapons systems provide capability of supplementing both defensive and offensive mission operations.
- OH-58D and OH-58D(R) incorporate an external power sensor to protect aircraft systems from out of tolerance voltages, fluctuations, and spiking.
- OH-58D(R) incorporates a Full Authority Digital Electronic Control (FADEC) to enhance aircraft performance, battlefield survivability, and reduce pilot workload.

1-11. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

(A) ENGINE-TO-TRANSMISSION DRIVESHAFT. Transmits power from engine-mounted freewheeling assembly to main transmission.

(B) ENGINE. Equipped with a T703-AD-700 (250-C30R) or T703-AD-700B (250-C30R/1) engine (OH-58D) and a 250-C30R/3 engine (OH-58D(R). An accessory drive pad is provided for mission equipment and electrical requirements.

(C) MAIN TRANSMISSION. Provides two stage reduction of 15.2961 to 1 (6016 to 393 rpm). First stage bevel gear reduction is 3.2632 to 1.0; second stage planetary gear train reduction is 4.6875 to 1.0.



Location and Description of Major Components (Sheet 1 of 3)

(D) MAIN ROTOR HUB. Main rotor hub consists of a four bladed system with the yoke constructed of fiberglass to allow independent flapping freedom for each blade.

(E) TAIL ROTOR GEARBOX. Contains two spiral bevel gears positioned 90 degrees to each other. Direction of drive is changed 90 degrees. There is a speed reduction of 2.52 to 1.0 at the gearbox.

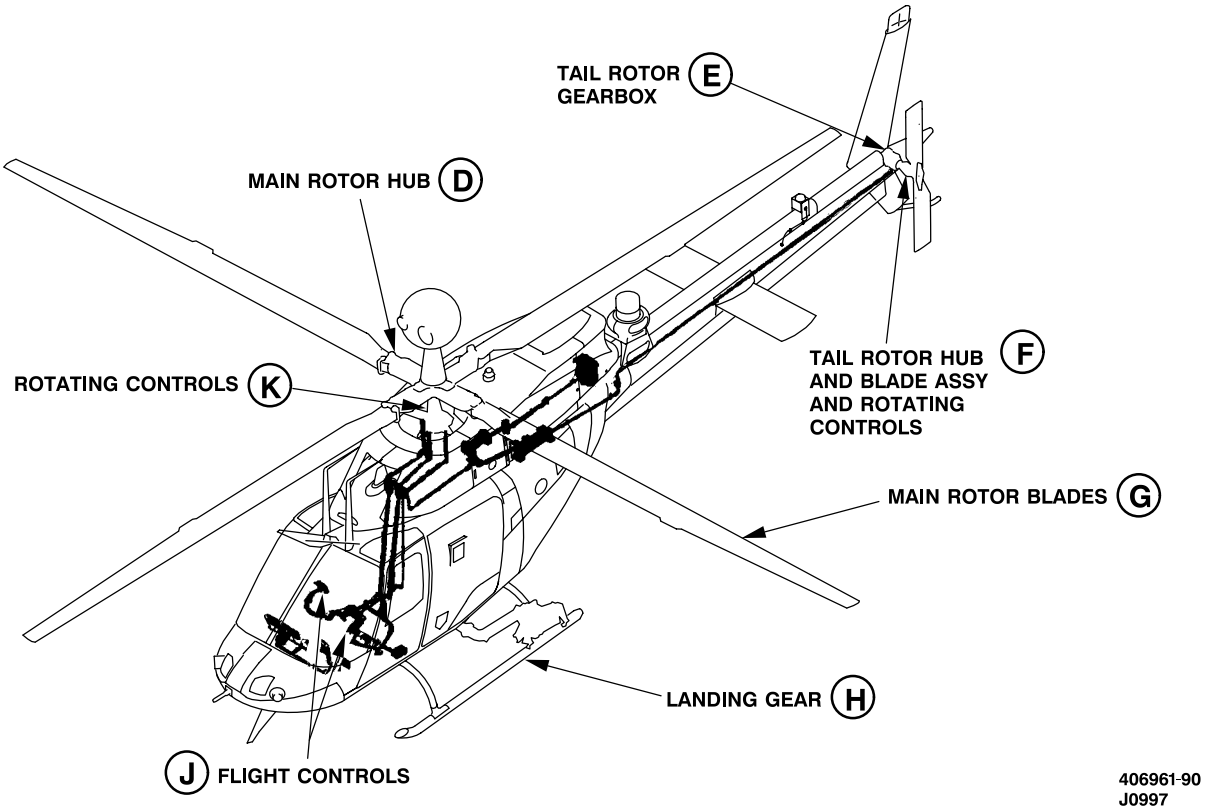
(F) TAIL ROTOR HUB AND BLADE ASSEMBLY AND ROTATING CONTROLS. Consists of a hub, two blades, and pitch change controls. Hub and blade assembly is mounted on tail rotor gearbox shaft.

(G) MAIN ROTOR BLADES. Blades have 35-foot diameter and 10.75-inch chord. Use of fiberglass spars and skins over honeycomb core provides lightweight rotor blade.

(H) LANDING GEAR. Consists of two tubular main skid tubes and two curved crosstube assemblies. Each skid tube is provided with three replaceable skid shoes which are highly resistant to wear. Aft crosstube is provided with support beam which acts as a pivot point.

(J) FLIGHT CONTROLS. Flight control system is positive mechanical type, actuated by typical helicopter controls. Complete dual controls are provided for both pilot and copilot/gunner (CPG). SCAS is provided.

(K) ROTATING CONTROLS. Consists of swashplate and support, sleeve, drive links, and pitch links.



Location and Description of Major Components (Sheet 2 of 3)

(L) Pivoting vertical fin for air transportability.

(M) Folding horizontal stabilizer for air transportability.

(N) Two piece aft fairing. Provides for ease of removal when IR Jammer equipment is installed.

(P) Improved oil cooler and fan. Provides improved engine and main transmission oil cooling.

(R) Modified fireshield improved fire protection.

(S) Modified access door. Provides mounting provisions for laser threat detection equipment.

(T) UWP. Provides mounting points for weapon systems.

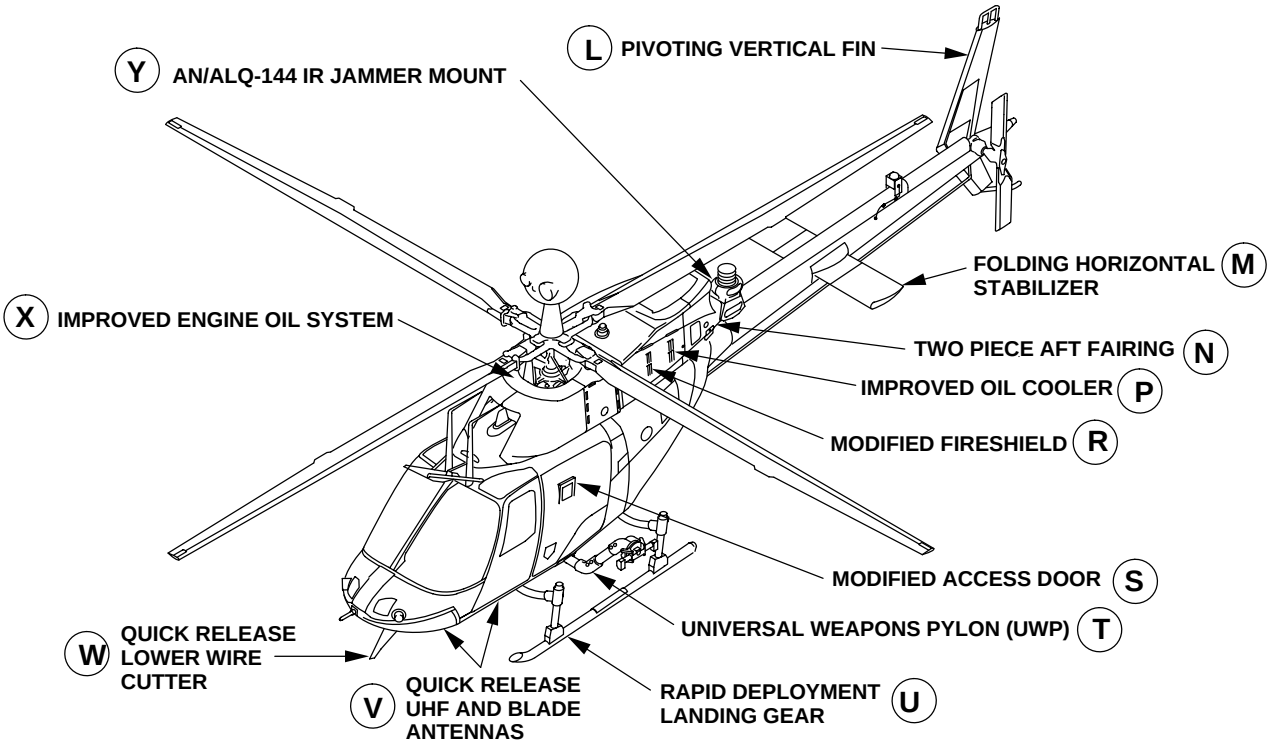
(U) Optional Rapid Deployment Landing Gear. Both landing gear crosstubes are attached to the fuselage with four strap assemblies. Both skid tubes have provisions for installing ground handling wheels. Four rings for towing and transport loading are provided. Both skid tubes have replaceable skid shoes. Knuckle assemblies provide attaching points for jacks and locking mechanism to hold crosstubes in operating position. Jacks permit helicopter to be lowered for loading onto transport aircraft and raising helicopter back to operating configuration without removing any of the landing gear components.

(V) Quick Release UHF and Blade Antenna for rapid deployment.

(W) Quick Release Lower Wire Cutter Assembly for rapid deployment.

(X) Improved Engine Oil System. Incorporates external oil filter for improved oil filtration.

(Y) AN/ALQ-144 IR Jammer Mount. Mounting provision for the AN/ALQ-144 Transmitter.



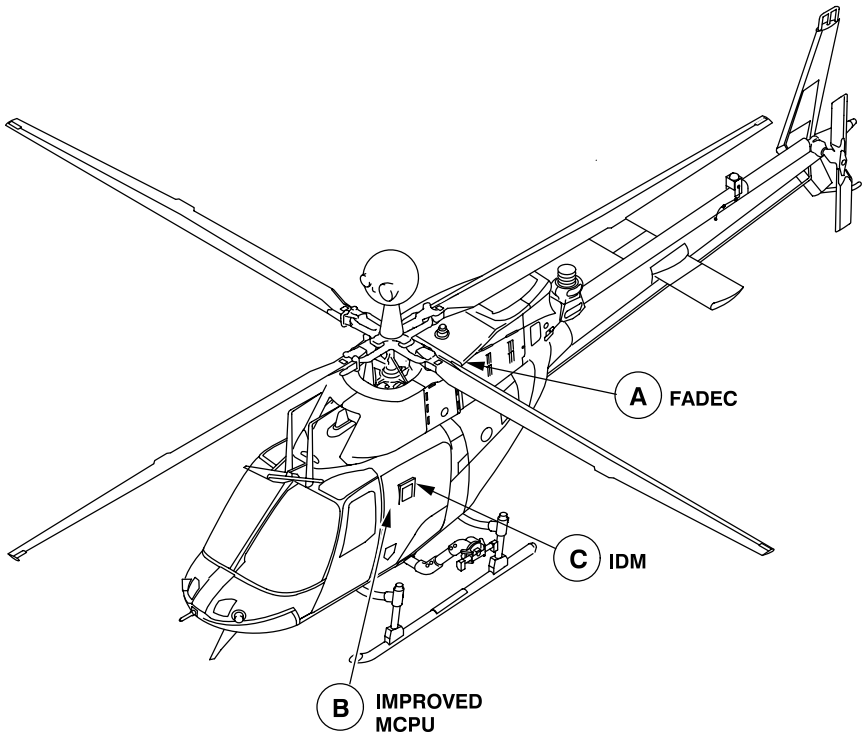
Location and Description of Major Components (Sheet 3 of 3)

1-12. DIFFERENCES BETWEEN MODELS OH-58D AND OH-58D(R)

(A) Upgraded engine with a FADEC.

(B) Improved Master Controller Processor Units (MCPU) for greater reliability of onboard electronics. Replaces Integrated Systems Processor (ISP) which provides control of some weapons functions.

(C) Improved Data Modem (IDM) provides digital communication capability for transmitting target handover information. Replaces the Airborne Target Handover System (ATHS).



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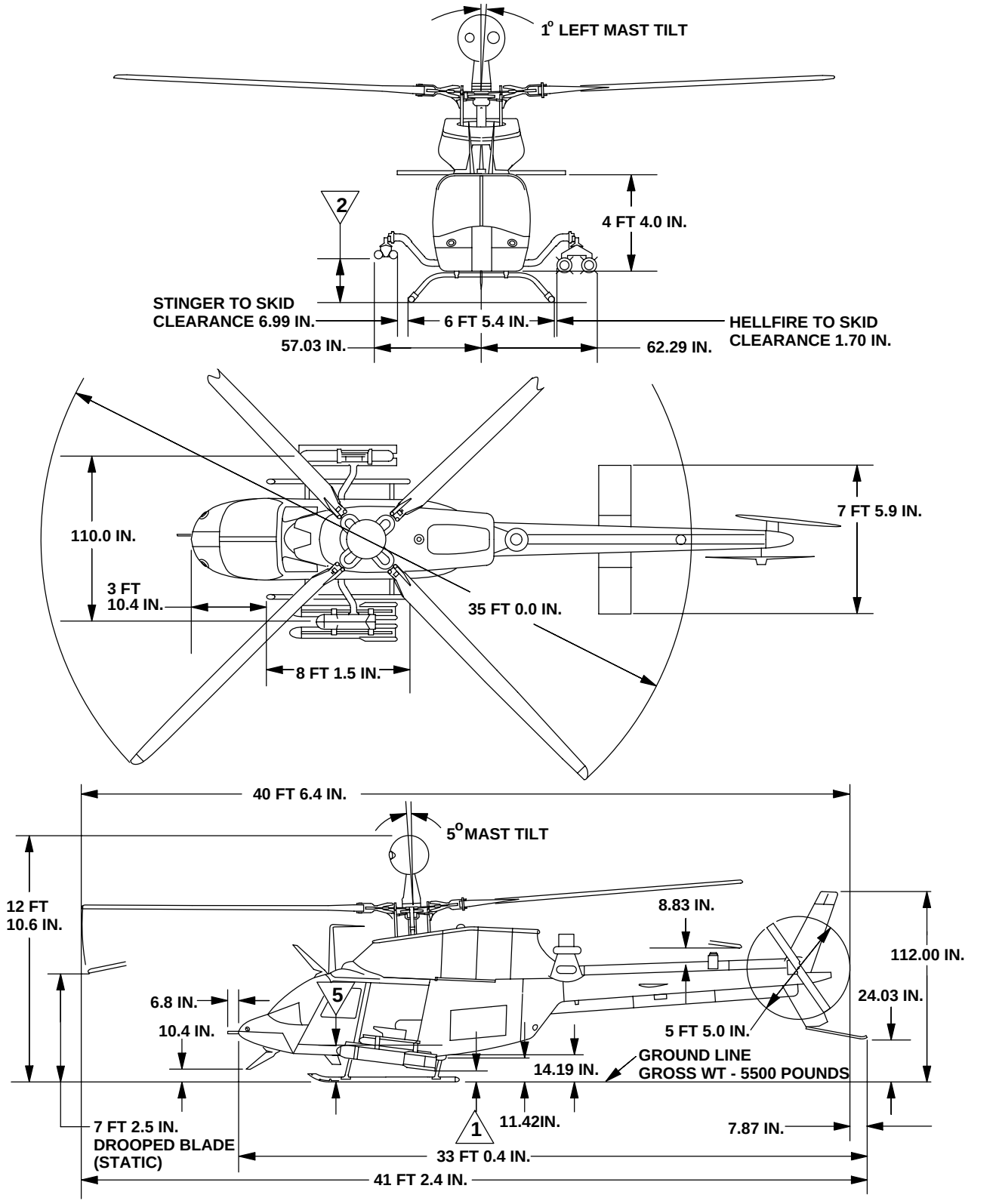
Differences Between Models



OH-58D WITH STANDARD LANDING GEAR

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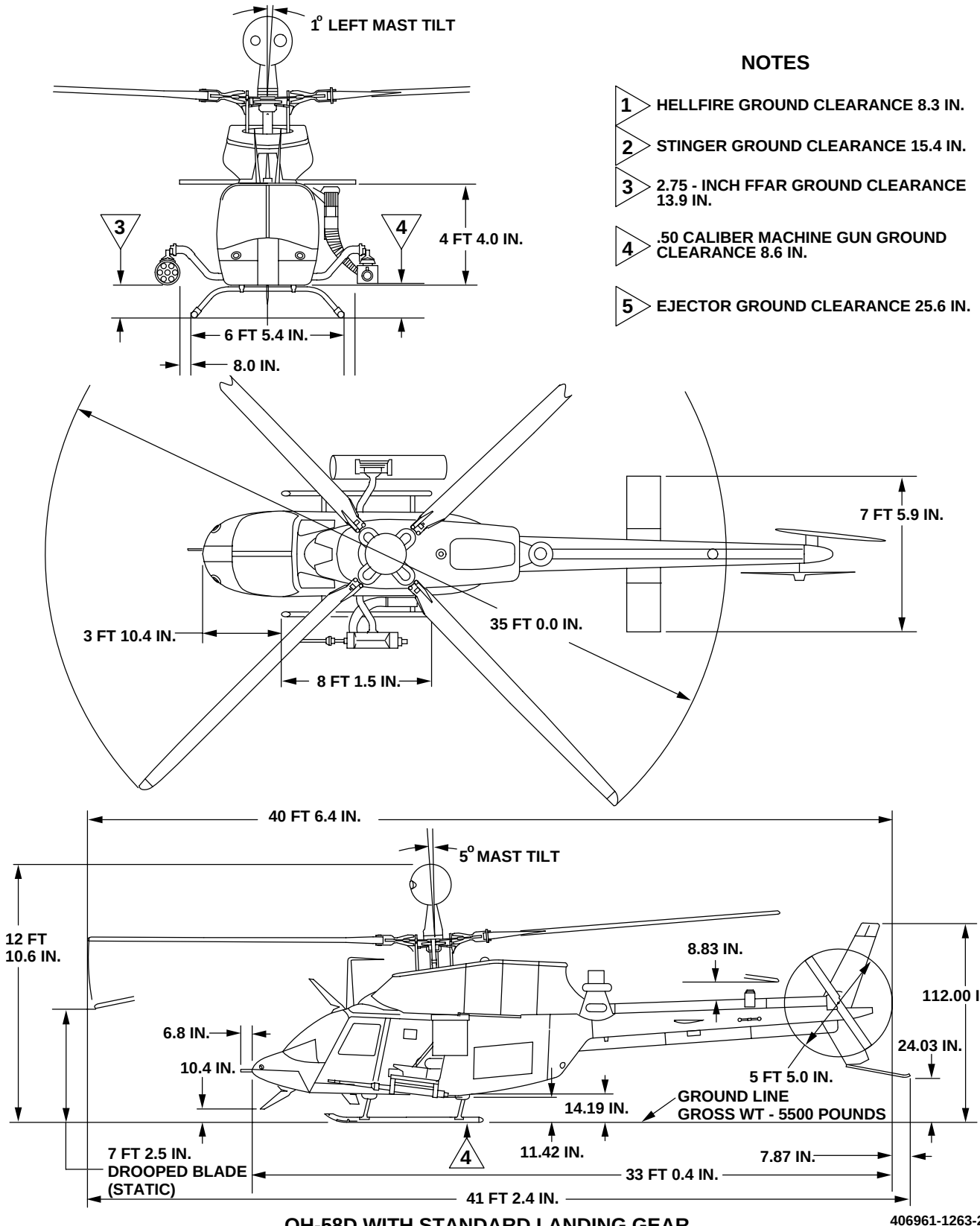
J1234

Important Dimensions — Weapons Loaded (Sheet 1 of 4)



OH-58D WITH STANDARD LANDING GEAR

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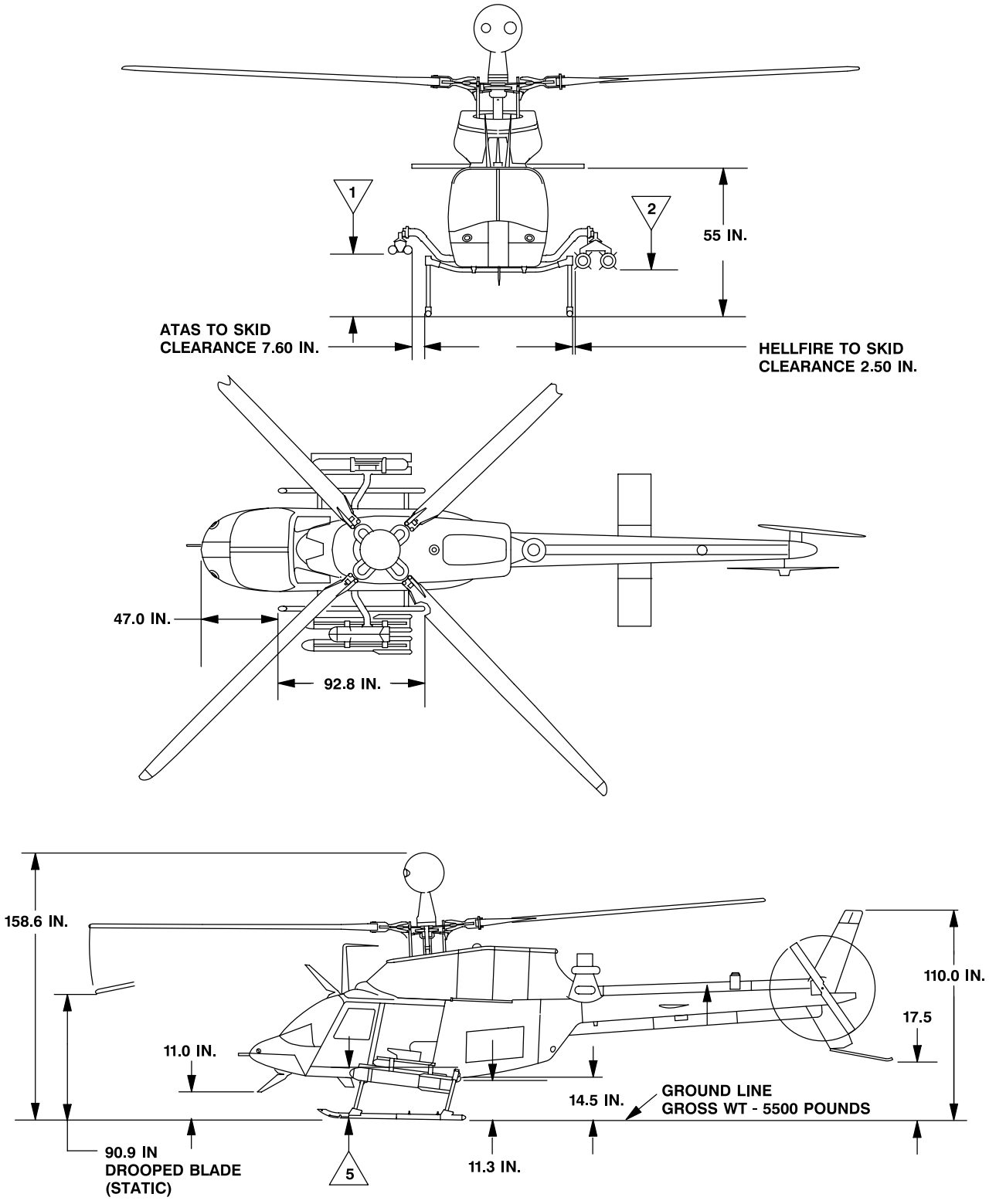
J1234

Important Dimensions — Weapons Loaded (Sheet 2 of 4)



OH-58D WITH RAPID DEPLOYMENT LANDING GEAR

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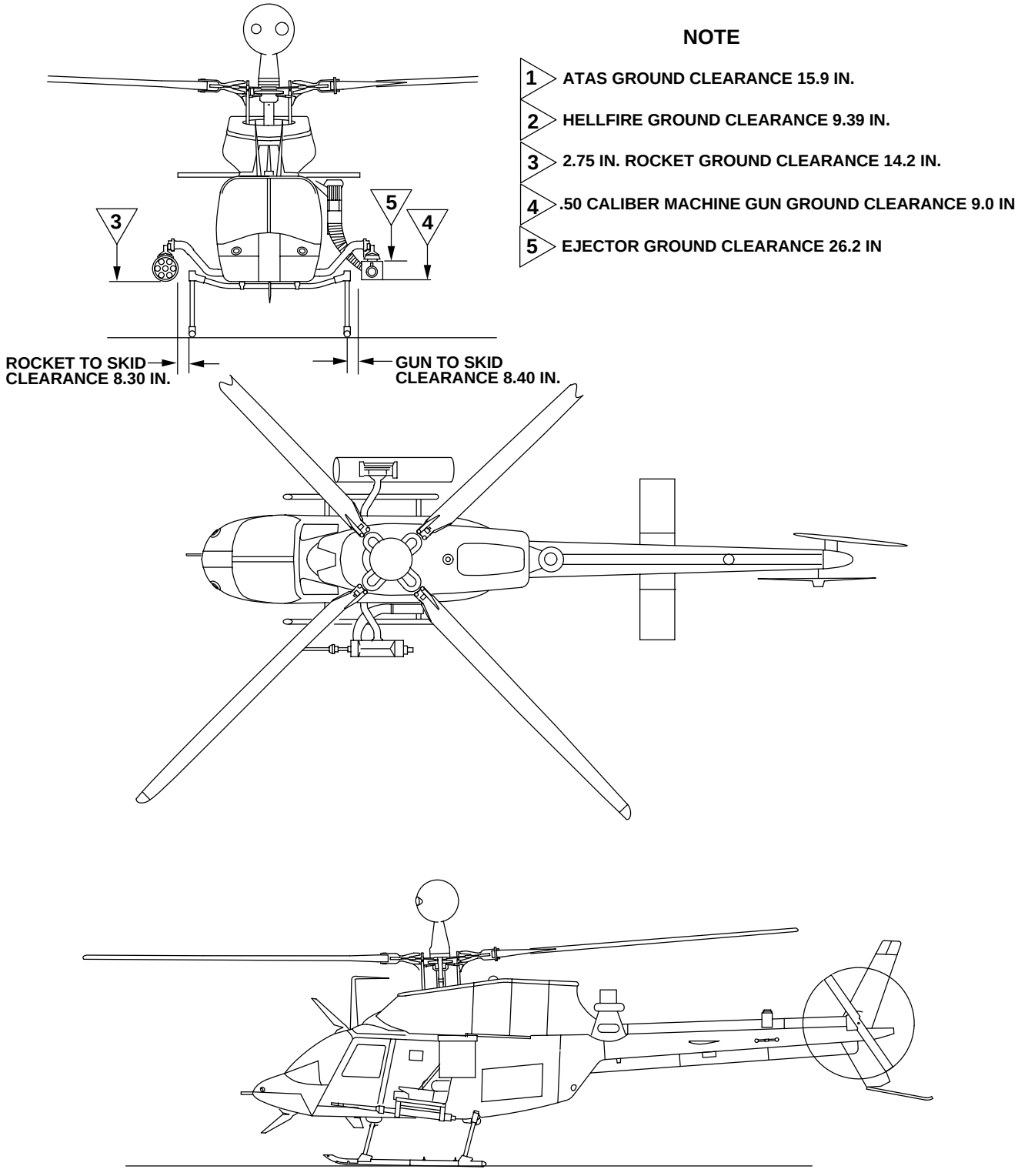
J1572

Important Dimensions — Weapons Loaded (Sheet 3 of 4)



OH-58D WITH RAPID DEPLOYMENT LANDING GEAR

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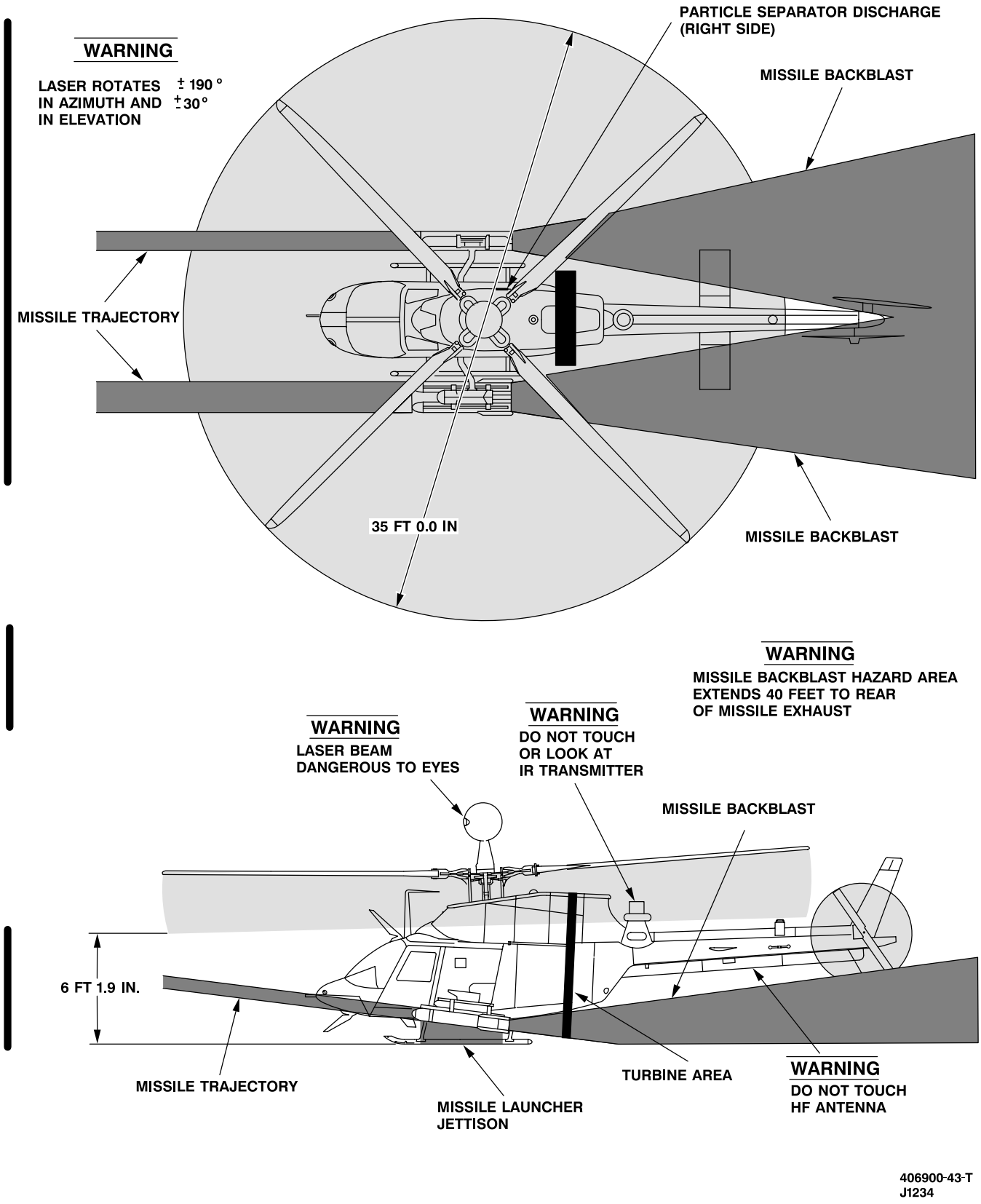
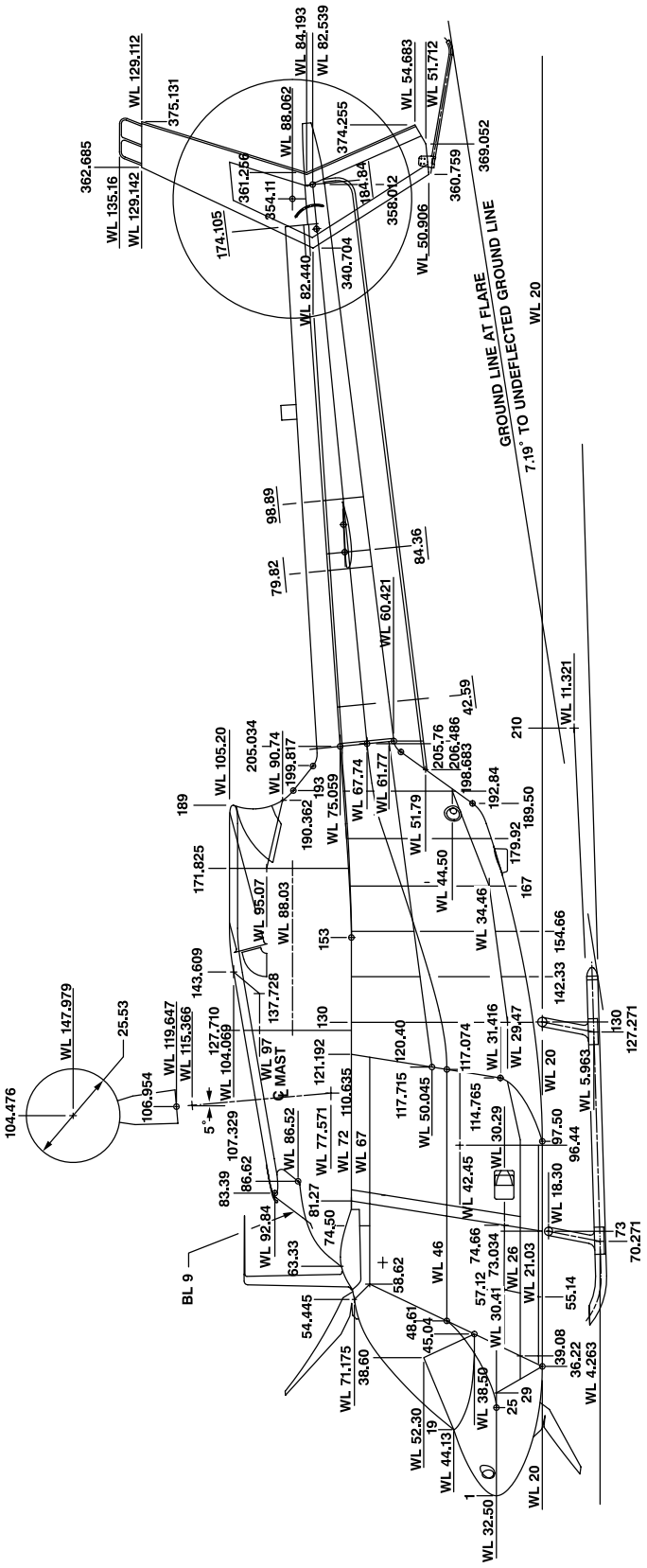
J1572

Important Dimensions — Weapons Loaded (Sheet 4 of 4)

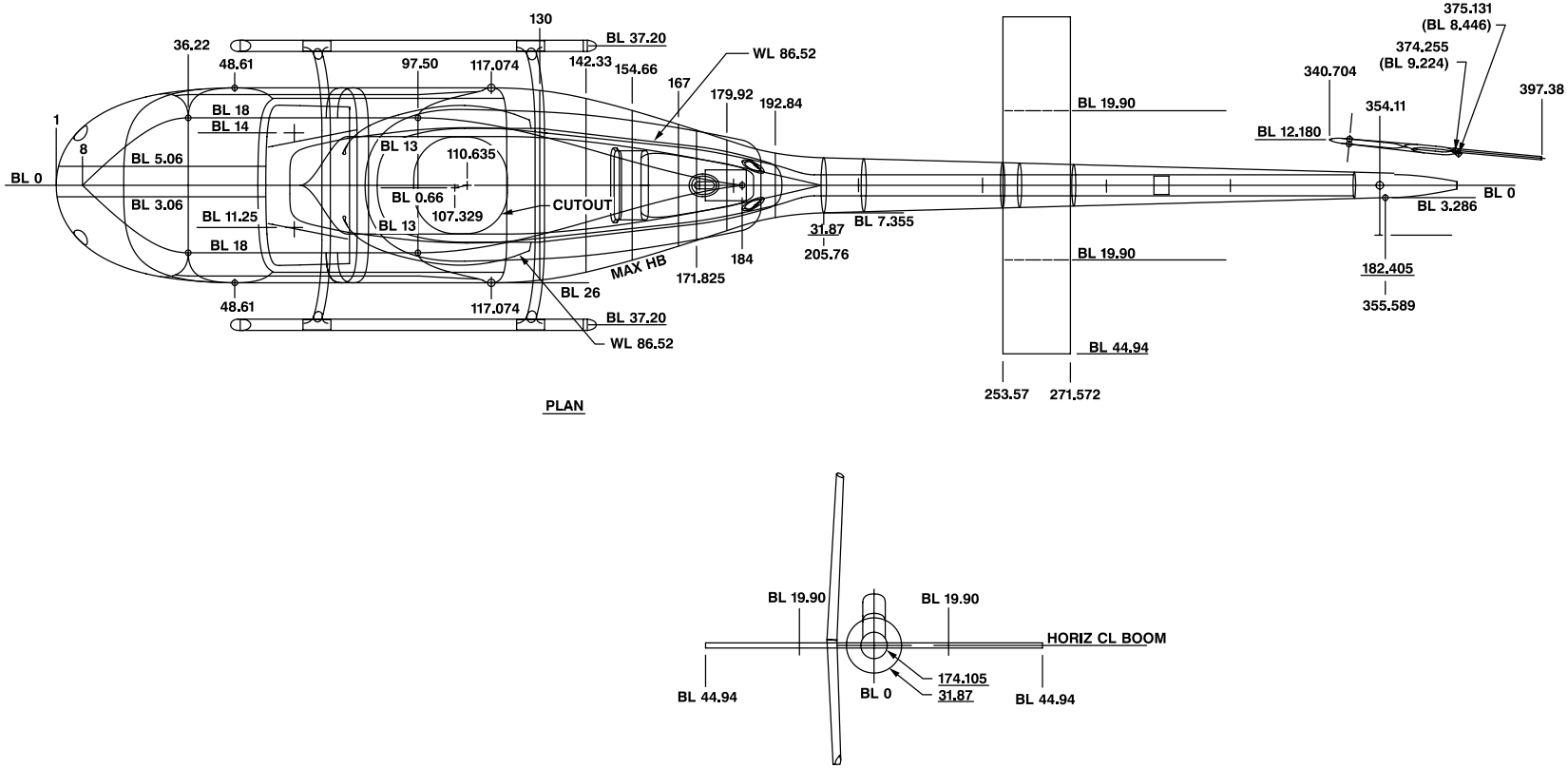


Hazardous Areas



Water Lines, Station Lines, and Buttock Lines (Sheet 1 of 3)

Water Lines, Station Lines, and Buttock Lines (Sheet 2 of 3)



NOTE: UNIDENTIFIED NUMBERS ARE STATION NUMBERS

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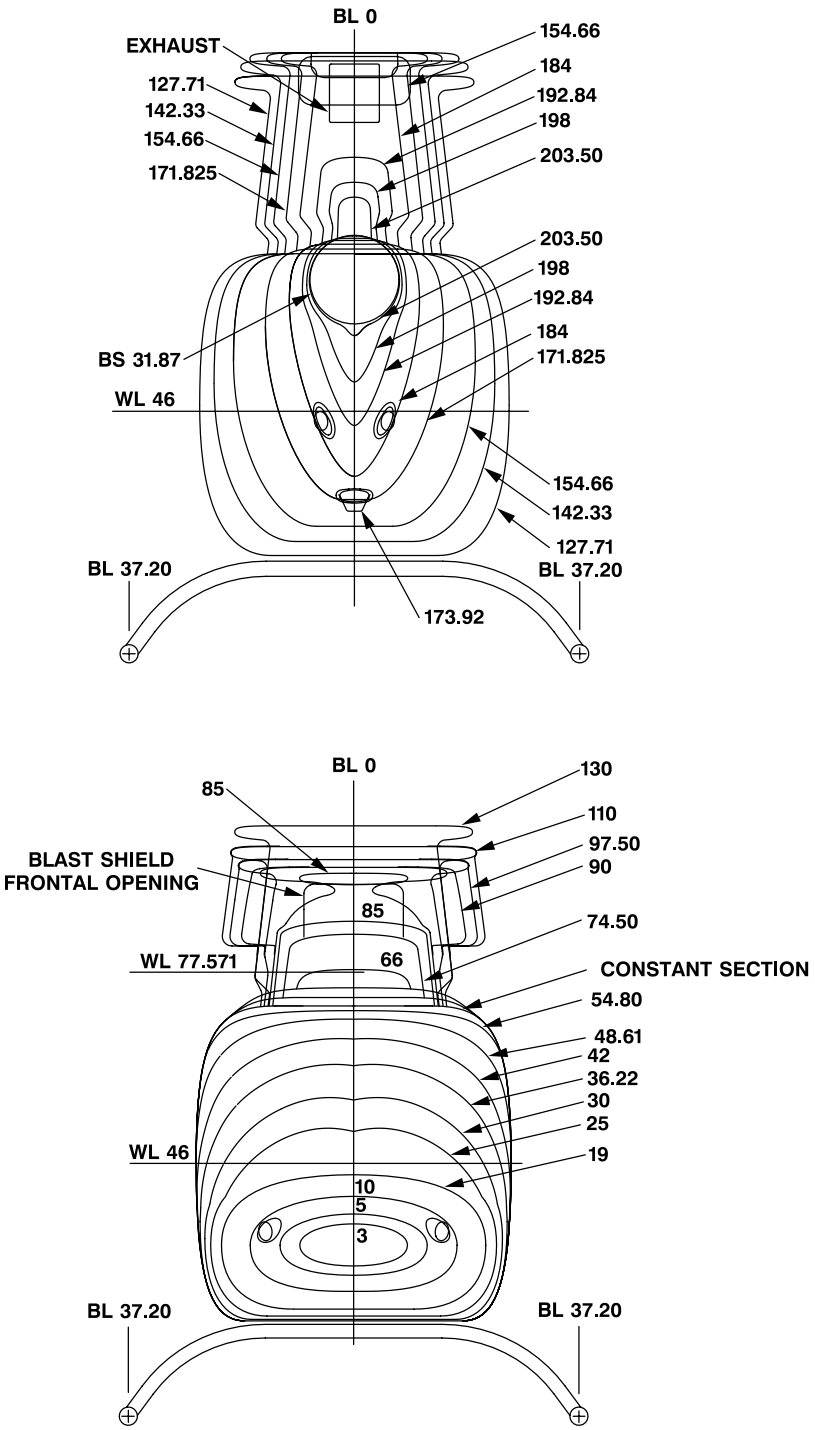
J1189



OH-58D

NOTE: UNIDENTIFIED NUMBERS ARE STATION NUMBERS.

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J2080

Water Lines, Station Lines, and Buttock Lines (Sheet 3 of 3)

1-13. EQUIPMENT DATA

1-14. FUEL SYSTEM

Capacity Total ..... 112 U.S. gallons
Usable ..... 110 U.S. gallons
No. of Cells 1
Type Fuel JP-8

1-15. HYDRAULIC SYSTEM

Capacity ..... 1.3 pints
Type Fluid MIL-H-5606, MIL-H-83282

1-16. ENGINE OIL SYSTEM

Capacity ..... 1.5 gallons
Type Oil MIL-L-7808, MIL-L-23699

1-17. ENGINE

Model
OH-58D T703-AD-700A/250-C30R
OH-58D T703-AD-700B/250-C30R/1
OH-58D(R) 250-C30R/3
Shaft Horsepower 650

1-18. MAIN TRANSMISSION

Capacity ..... 7 quarts (approximate)
Type Oil DOD-L-85734, MIL-L-7808

1-19. TAIL ROTOR GEARBOX

Capacity ..... 0.38 pint
Type Oil DOD-L-85734, MIL-L-7808

1-20. ELECTRICAL SYSTEM

Primary AC
Power Source ..... 10kVA, 3-Phase, 120/208-Volt, 400 Hz AC Generator
Primary DC
Power Source ..... 200-Amp, 28 VDC Transformer/Rectifier
Engine Start and
Emergency Power ..... 17 Ampere-Hour Nickel Cadmium Battery

1-21. EQUIPMENT CONFIGURATION

1. Mission Avionics
   a. Mast Mounted Sight (MMS)
   b. MMS Turret Assembly (MTA)
   c. MMS Central Power Supply (MCPS)
   d. MMS System Processor (MSP)
   e. MMS Control and Display System.
2. ATHS (if installed).
3. Improved MCPU (if installed).
4. IDM (if installed).
5. Winterization Configuration.
6. Mission Equipment
   a. Pilot Display Unit (PDU)
   b. Air-to-Air Stinger (ATAS)
   c. Machine Gun Pod
   d. 2.75-inch Rocket System
   e. HELLFIRE Missile System (HMS)
   f. UWPs.

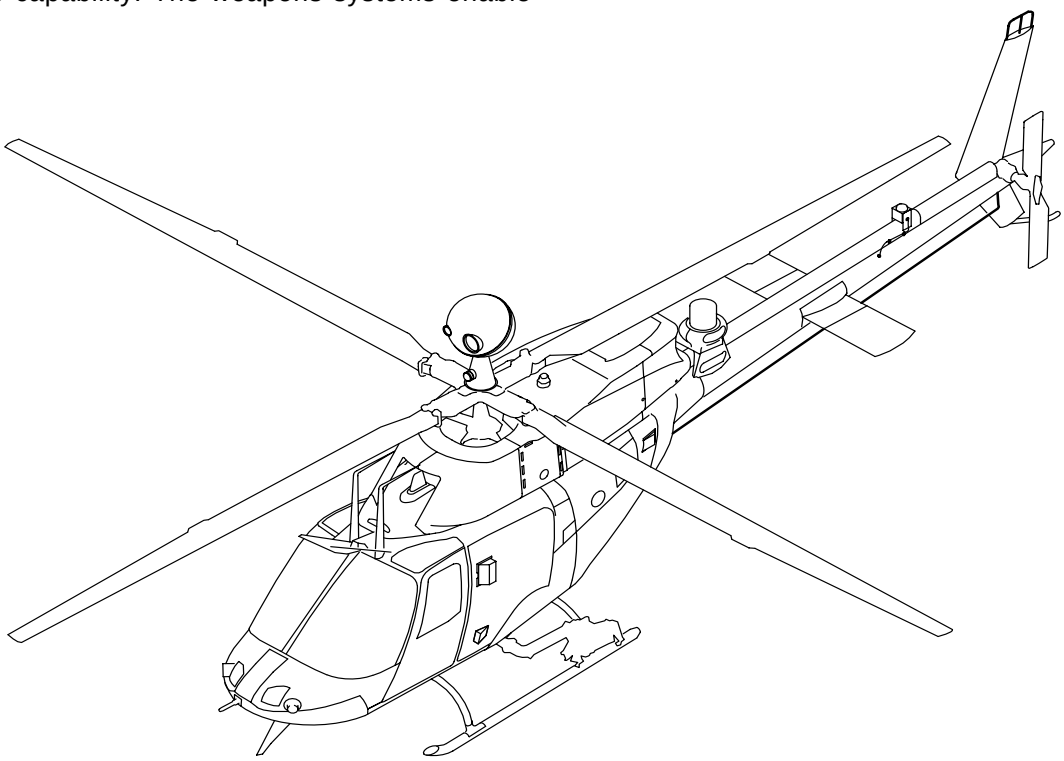
Section III. PRINCIPLES OF OPERATION

1-22. FUNCTIONAL DESCRIPTION

The OH-58D/OH-58D(R) helicopters have a fully integrated surveillance/target acquisition/ designation system and have a sufficient power margin to provide agility and total maneuverability in the nap-of-the-earth (NOE) environment.

The OH-58D/OH-58D(R) helicopters also have offensive capability. The weapons systems enable the OH-58D/OH-58D(R) helicopter to engage air-to-air, provide anti-armor defense, antifortification, and antipersonnel targets while maintaining enhanced aeroscout mission capability.

The MMS and other integrated electronics and instrumentation provide standoff acquisition and recognition of targets during day or night operations in all types of weather, with reduced crew workload under combat conditions.



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OH-58D/OH-58D(R)

1-23. PRINCIPLES OF OPERATION

1-24. AIRFRAME

The basic airframe consists of a fuselage (1), tailboom (2), pylon (3) and two UWPs (4).

1. The fuselage houses the crew station and electronic components. It serves as a platform for the engine, transmission, and main rotor system.

2. The fuselage also provides a mounting point for the UWP and ejector racks.

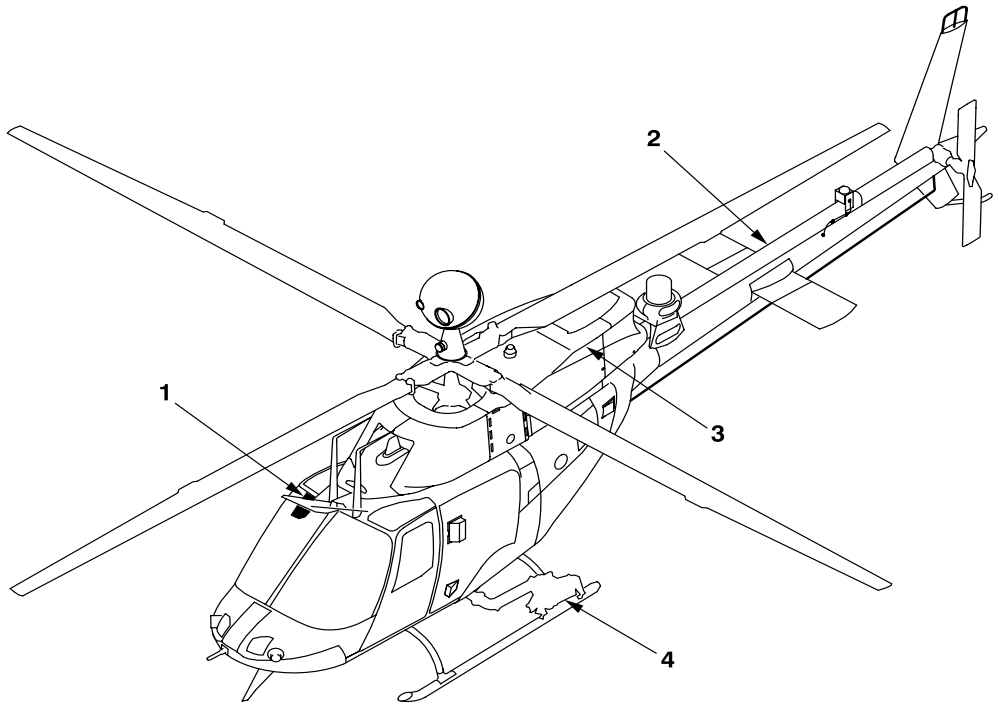
3. The tailboom serves as a platform for the tail rotor gearbox as well as the vertical fin, horizontal stabilizer, segmented tail rotor driveshaft, bearing supports, and several antennas. The control tubes to the tail rotor are contained in the tailboom.

4. The pylon provides a cover for the powerplant, transmission, hydraulic reservoir, and engine oil tank. Access covers and sight windows are provided for the components. A blast deflector shield, which partially covers the pylon, is attached to the forward part of the pylon. Two pylon beam assemblies provide support for the transmission.

1-25. LANDING GEAR

The standard landing gear consists of two tubular main skid tubes and two curved crosstube assemblies. The landing gear is attached to the fuselage with four strap assemblies. Provisions are made on the skid tubes for installing ground handling wheels, and two rings are provided for towing. Each skid tube is provided with replaceable skid shoes.

In addition to the standard landing gear is a rapid deployment landing gear. This configuration consists of two crosstubes with knuckle assemblies and two skid tubes with legs. Attachment to the fuselage is by four strap assemblies. There are provisions for installing ground handling wheels and four rings for towing and transport loading. Each skid tube has replaceable skid shoes. Knuckle assemblies provide attaching points for jacks and locking mechanism to hold crosstubes in operating position. Jacks permit helicopter to be lowered for loading onto transport aircraft and raising helicopter back to operating configuration without removing any of the landing gear components.



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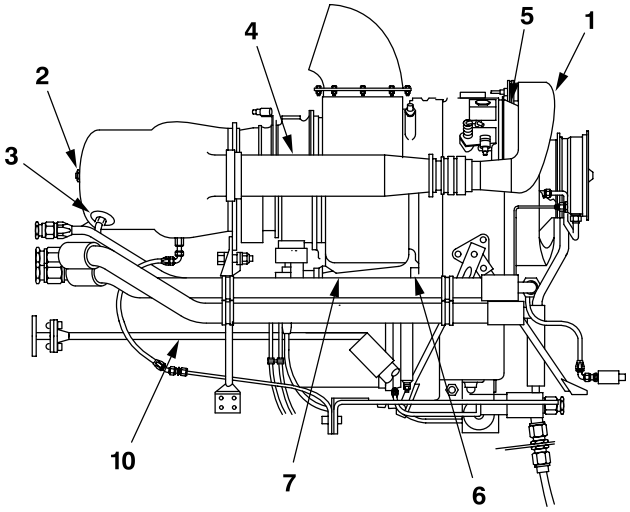
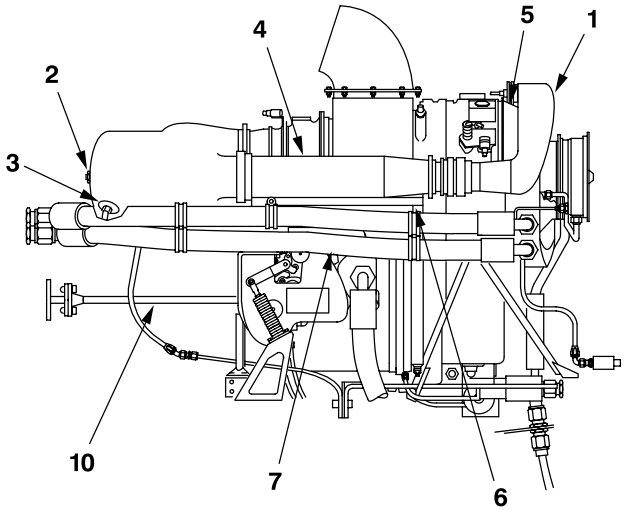
J1780

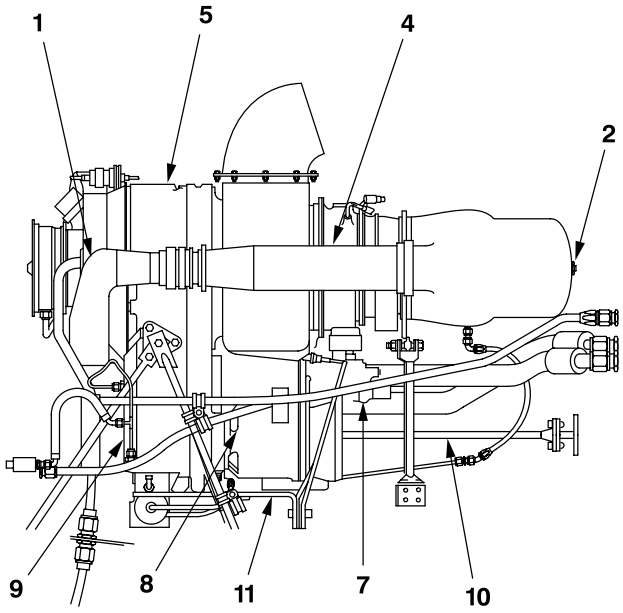
Basic Airframe



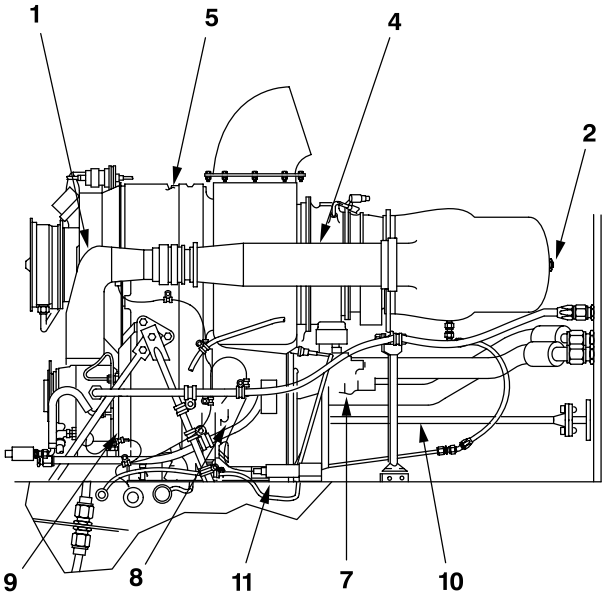
OH-58D RIGHT SIDE



OH-58D(R) RIGHT SIDE



OH-58D LEFT SIDE



OH-58D(R) LEFT SIDE

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J2081

1-26. POWERPLANT

The helicopter is equipped with an internal combustion turboshaft Allison engine, model T703-AD-700 (250-C30R) or T703-AD-700B (250-C30R/1) (OH-58D), and 250-C30R/3 (OH-58D(R)).

1. The four major components of the engine are the compressor section, combustion section, power turbine section, and the power and accessories gearbox.

a. Compressor Section. The compressor section is a single-stage, single-entry centrifugal flow compressor and is directly coupled to a two-stage turbine drive. Compressed air exits the compressor section through the scroll assembly (1).

b. Combustion Section. The single combustion section consists of a combustion liner, an outer case, a fuel injector (2), and one igniter plug (3). Compressed air is delivered to the combustion section by means of the discharge tubes (4).

c. Power Turbine Section. The power turbine section consists of the two-stage power turbine drive and two-stage gas producer turbine drive.

d. Power and Accessories Gearbox. The power and accessories gearbox (5) consists of the gas producer turbine drive geartrain and the power turbine drive geartrain. All engine components, including the engine mounted accessories, are installed on the gearbox. The power and accessories gearbox incorporates two monopole pickup units to sense gas producer turbine and power turbine speed. Components and accessories driven by the gas producer drive train are the engine fuel pump (6), fuel control unit (FCU) (7), pressure and scavenge oil pump, and the starter-generator drive. The power turbine drive train drives two spare drive pads and the ac generator (8), and supplies the power output for main rotor driveshaft (9) and tail rotor driveshaft (10).

2. The four major systems of the engine are the fuel system, lubrication system, electrical system, and the anti-icing system.

a. Engine Fuel System. The fuel pump (6), FCU (OH-58D) (7), hydromechanical unit (HMU) (OH-58D(R)), ESC (located in aft electrical compartment) (OH-58D), electronic control unit (ECU) (located in aft electrical compartment) (OH-58D(R)), fuel filter (11), and fuel injector (2) are the major components of the fuel system.

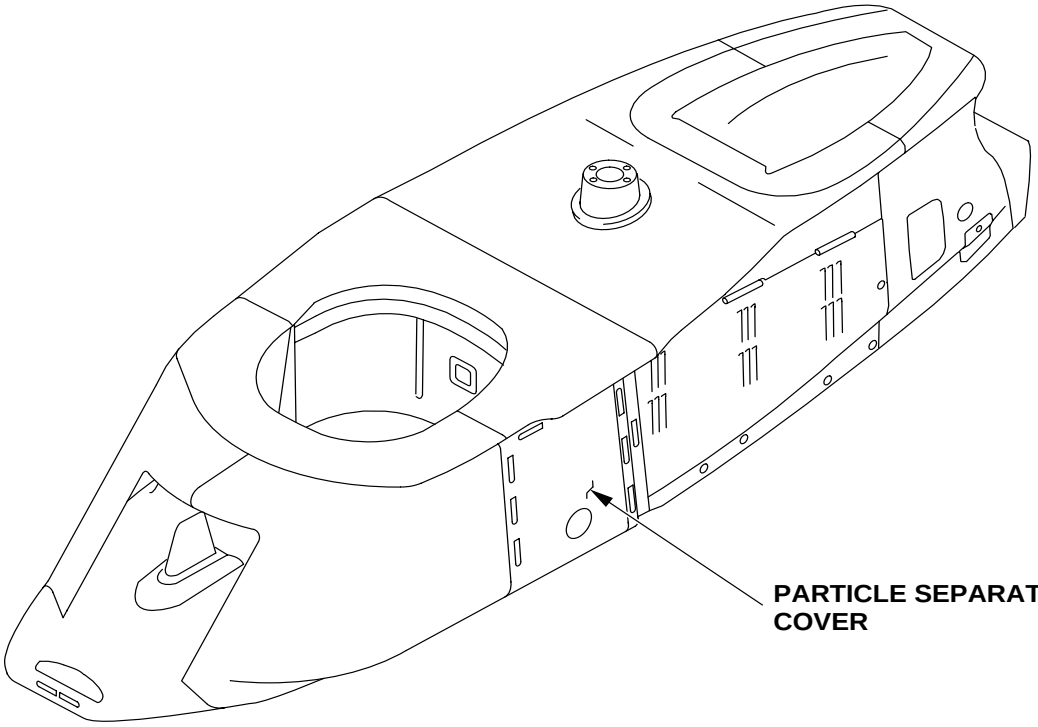
b. Engine Lubrication System. The lubrication system is a circulating dry sump type with an external reservoir and heat exchanger. The major components of the lubrication system are the oil filter assembly, oil tank, oil cooler, oil cooler bypass valve, and two electromagnetic chip detectors. A 3-micron scavenge oil filter is located forward of the oil tank.

c. Engine Electrical System. The electrical system consists of the turbine gas temperature measurement components, ignition components, turbine speed indicating components, ESC/ECU, AC generator, permanent magnet alternator (PMA) (OH-58D(R)), and the starter-generator.

d. Engine Anti-Icing System. The engine anti-icing system includes a firewall shield mounted solenoid and an anti-icing solenoid valve. The compressor inlet vanes and front bearing support hub are the only components with anti-icing provisions.

3. Particle Separator and Induction System. An inertial type particle separator in the air induction system provides a 92-percent particle separation efficiency, while allowing maximum engine performance in hover and low speed flight. Separated particles are ejected overboard through a duct assembly, assisted by an internally mounted fan.

4. Infrared Suppressor. The infrared signature of the engine exhaust and other heated components is reduced by an exhaust IR suppressor and masking of other components by the cowling. An ejector type exhaust system cools the hot exhaust gases as well as induces the flow of air for engine compartment cooling.

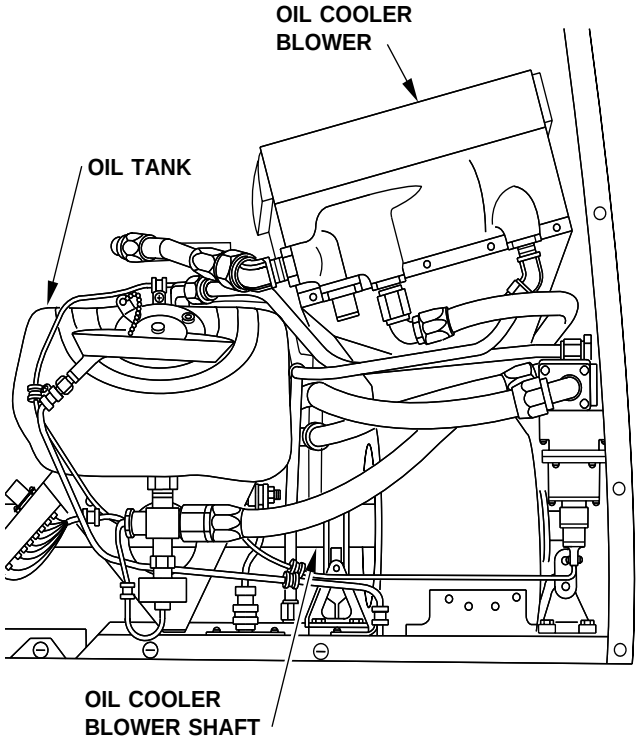


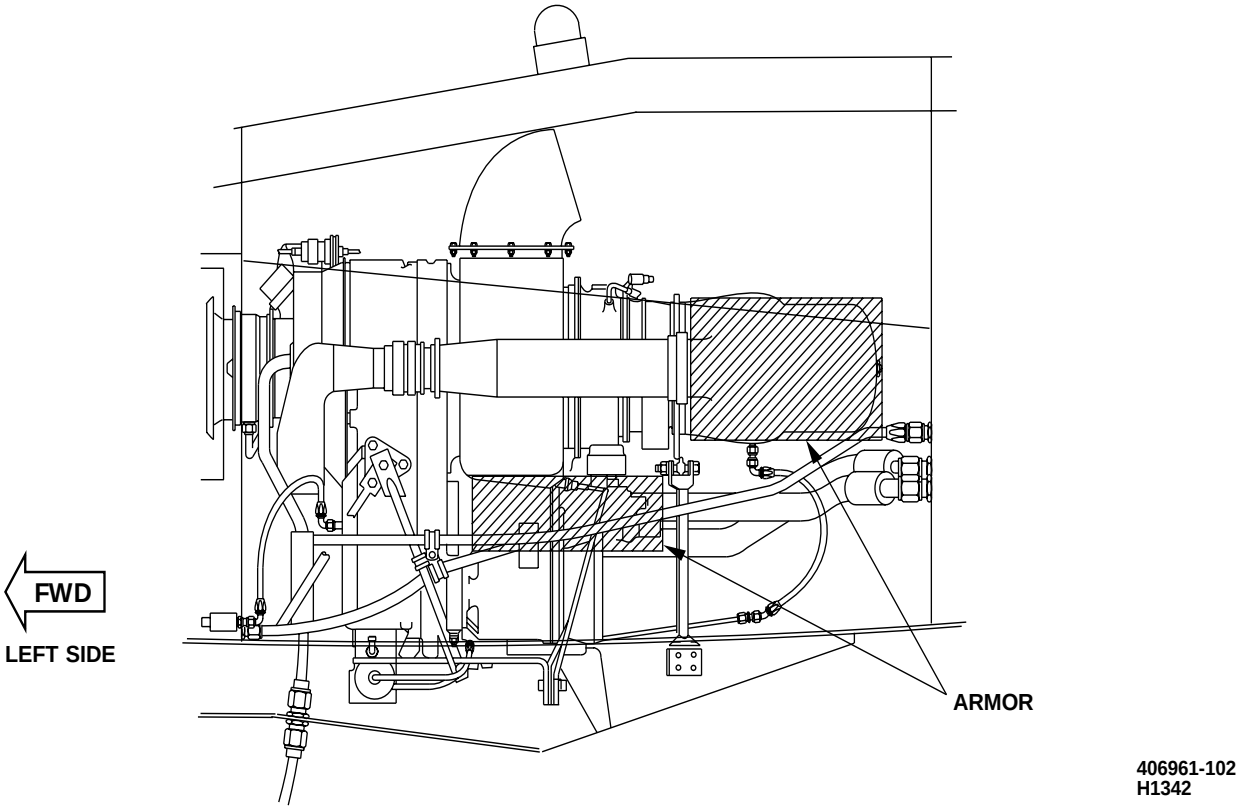
Rocket Blast Intake Fairing and Particle Separator Cover

5. Engine and Transmission Oil Cooler Blower. An oil cooling system combines the engine oil cooler and transmission oil cooler utilizing a common blower.

6. Oil Tank. The oil tank is a rubberized, self-sealing oil cell with a normal capacity of 11.2 pints. The oil tank assembly is composed of a sight glass, drain valve, oil temperature transducer, oil level switch, and a cap and adapter assembly.

7. Engine Cowling Mounted Armor Panel. Engine cowling mounted armor panels protect critical elements of the turbine and fuel system components.





Engine Protective Armor

1-27. POWERPLANT DIFFERENCES (250-C30R/3 ENGINE WITH FADEC SYSTEM VS. 250-C30R/1 SERIES)

The OH-58D(R) is equipped with an Allison turboshaft engine model 250-C30R/3. Some of the differences between the T703-AD-700B (250-C30R/1) OH-58D and 250-C30R3 OH-58D(R) engines are shown below.

Table 1-1. Powerplant Differences

ESC Equipped Aircraft Components Removed T703-AD-700B (250-C30R/1)	FADEC Equipped Aircraft Components Added 250-C30R/3	Remarks
Pneumatic Fuel Control & Fuel Pump	HMU	HMU both a metering unit and a fuel pump in one assembly.
ESC	ECU	ECU is a FADEC. Control software is different. Mounting location is the same.
Pneumatic tubing & PC filter and Np overspeed solenoid valve.	None	FADEC control system uses no flowing pneumatics to schedule fuel flow.
Compressor bleed valve	None	FADEC control system does not use a compressor bleed valve.
Low pressure fuel filter	Low pressure fuel filter	Same engine mount location and interfaces. FADEC filter rating is different.
Engine harness	Engine harness & engine accessory harness.	FADEC uses two separate harnesses. Engine harness EMI hardened.
None	Compressor Inlet Temperature (CIT) sensor	CIT sensor new for FADEC. Mounted in particle separator and provides inlet temperature to ECU.
None	Torquemeter Oil Pressure (TMOP) sensor	TMOP sensor new for FADEC. Sensor is teed into existing TMOP sensor on front of the engine gearbox.
None	Permanent Magnet Alternator (PMA)	PMA new for FADEC. Mounts on rear of engine gearbox. Provides power for FADEC when Np above 85%.
Throttle linkage at FCU	Throttle linkage at HMU	HMU throttle lever location and angular travel slightly different.

Table 1-1. Powerplant Differences (Cont)

ESC Equipped Aircraft Components Removed T703-AD-700B (250-C30R/1)	FADEC Equipped Aircraft Components Added 250-C30R/3	Remarks
None	Low fuel pressure warning switch	Added for FADEC suction mode operation. The ‘fuel boost fail‘ CDS warning still exists for operation with aircraft fuel boost pump turned on.
Engine fuel inlet plumbing	Engine fuel inlet plumbing	FADEC fuel inlet port oriented horizontally. 250-C30R/1 points down.
Engine gearbox magnetic plugs	Engine gearbox magnetic plugs	FADEC will use fuzz burner type plugs but fuzz burner circuits are not connected.
None	HMU fire shield	Safety
None	ARINC-429 data bus interface	FADEC communicates fault and status information to the CDS system over this bus.
None	RS-423 data bus connection port	Located on the Data Transfer Unit. FADEC maintenance status can be downloaded via the Electronic Control Unit Interface Computer (ECUIC)

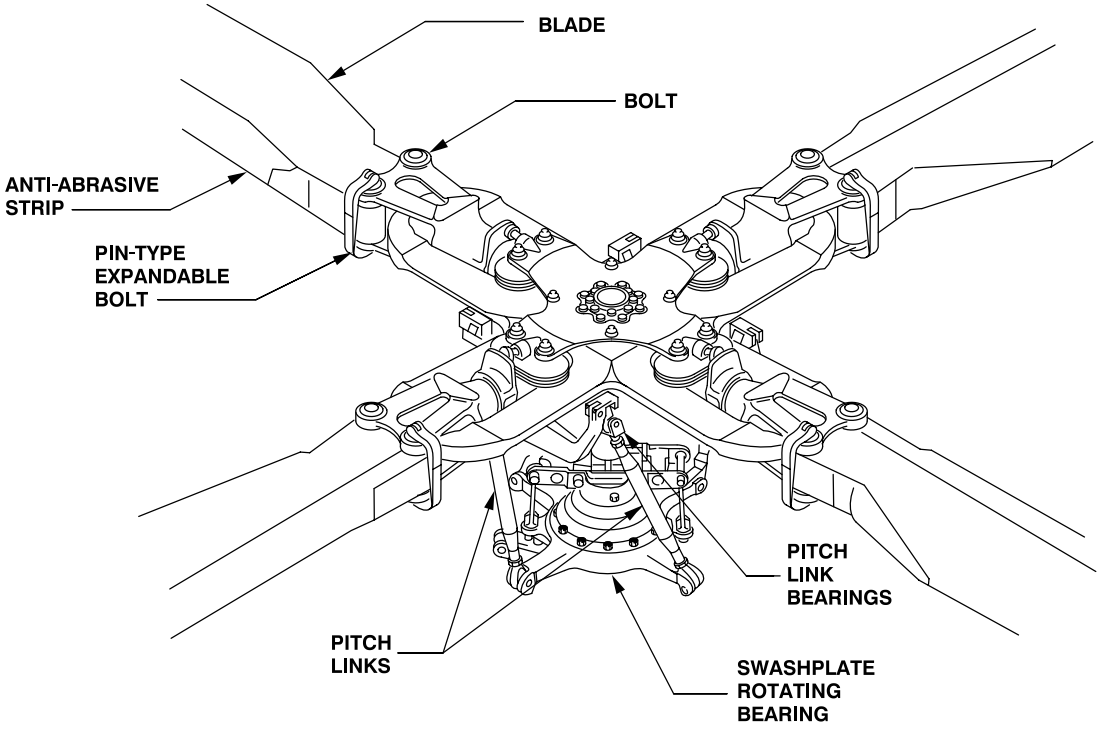
1-28. ROTORS

The rotor systems utilized are: the main rotor and controls system and the tail rotor and controls system.

1. Main Rotor and Controls.

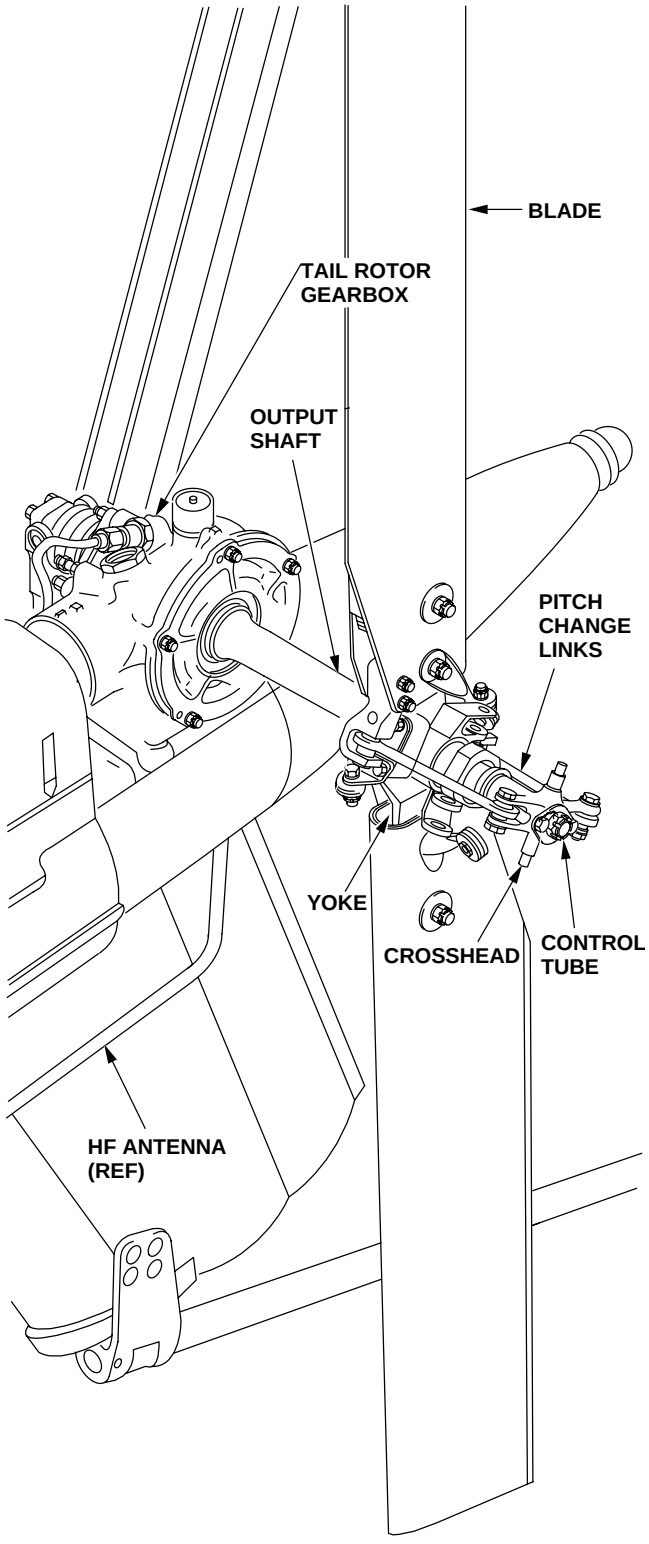
a. The main rotor consists of four composite blades mounted to the yoke. Elastomeric bearings help damp out vibrations and provide some lead-lag for the main rotor blades. Overall diameter of the system is **35 feet**. All four blades can be folded back to aid in parking, mooring, and transporting of the helicopter. Each blade is attached to the grips by one bolt and one pin-type expandable bolt. The expandable bolt is easily removed for blade folding. An anti-abrasive strip is provided on each blade to protect the leading edge from sand or small rocks.

b. The main rotor controls carry the control inputs from the fixed system to the rotor. The swashplate rotating bearing is a grease lubricated, duplex ball bearing set. Fittings are provided for lubrication. The pitch link bearing is a grease lubricated universal joint; the remainder of the bearings in the system are Teflon fabric lined self-lubricated bearings. All bearings in the system, with the exception of the swashplate rotating ball bearings, can be replaced without removing the rotor from the helicopter.



Main Rotor and Controls

2. Tail Rotor and Controls. The tail rotor system consists of two fiberglass blades mounted to a yoke and driven by the tail rotor gearbox. Pitch change inputs, from pilot or CPG pedals, are made through a control tube that slides through the center of the gearbox output shaft. A crosshead on the end of the control tube serves as the attaching points for the tail rotor pitch change links.



1-29. DRIVE TRAIN SYSTEM

The drive train system consists of all components between the engine and the rotors. This includes the freewheeling assembly, main driveshaft, transmission and mast assembly, oil cooler fan assembly, tail rotor driveshaft assembly, and tail rotor gearbox. Also included are the related components such as temperature and pressure indicators, torque indicator, chip detectors, transmission oil pump and oil filter.

1. Freewheeling Assembly. The freewheeling assembly is mounted in the lower portion of the accessory gearbox. It passes through the gearbox to provide an adapter in the rear to connect to the tail rotor driveshaft and an adapter in the front to connect to the main driveshaft. The freewheeling assembly serves as the connecting link between the accessory gearbox and the driveshaft system. Its freewheeling mode allows free rotation of the rotor system as well as necessary accessories when power is not being applied by the engine. This is accomplished by an internal sprag clutch. Lubrication is supplied by oil from the transmission assembly. Oil enters the freewheeling assembly at the rear by a line from the transmission. It exits the freewheeling assembly from the forward section and enters into the transmission lower case. The freewheeling assembly is equipped with a chip detector that will illuminate a caution message on the multifunction display (MFD) when there are metal particles in the oil. This chip detector has fuzz burning capabilities.

2. Main Driveshaft. The driveshaft connects the freewheeling assembly with the main transmission. It is designed for easy removal from the helicopter and to aid in rapid removal of the engine or transmission. The driveshaft is flexible to the extent it allows smooth transfer of torque even though the transmission and freewheeling assembly are transversely offset and slanted. Both ends of the driveshaft are identical Kaflex couplings, allowing mounting in either direction.

3. Transmission and Mast Assembly. The transmission and mast assembly transfers the engine torque to the main rotor system with a two-stage gear reduction, and has a maximum continuous rating of 550 horsepower. The assembly is mounted to the roof of the helicopter, forward of the engine, by the pylon assembly. The pylon is attached to the transmission housing, on each side, by two elastomeric mounts. There are two restraint spring assemblies attached to the lower transmission housing, one on each side, that connect to the rear of each pylon support arm to damp the pitching motion of the transmission assembly.

a. Lubrication of the transmission assembly is accomplished by a splash type oil system. Oil is pumped through the transmission by a self-contained oil pump. This oil system lubricates all components of the transmission and the freewheeling assembly. Oil is pumped through a dual element filter that is mounted on the left side of the transmission. From the filter, depending on the position of the thermal bypass valve, oil will either bypass the oil cooler and lubricate the transmission internal components or flow to the oil cooler for cooling and then return to the transmission for lubricating internal components.

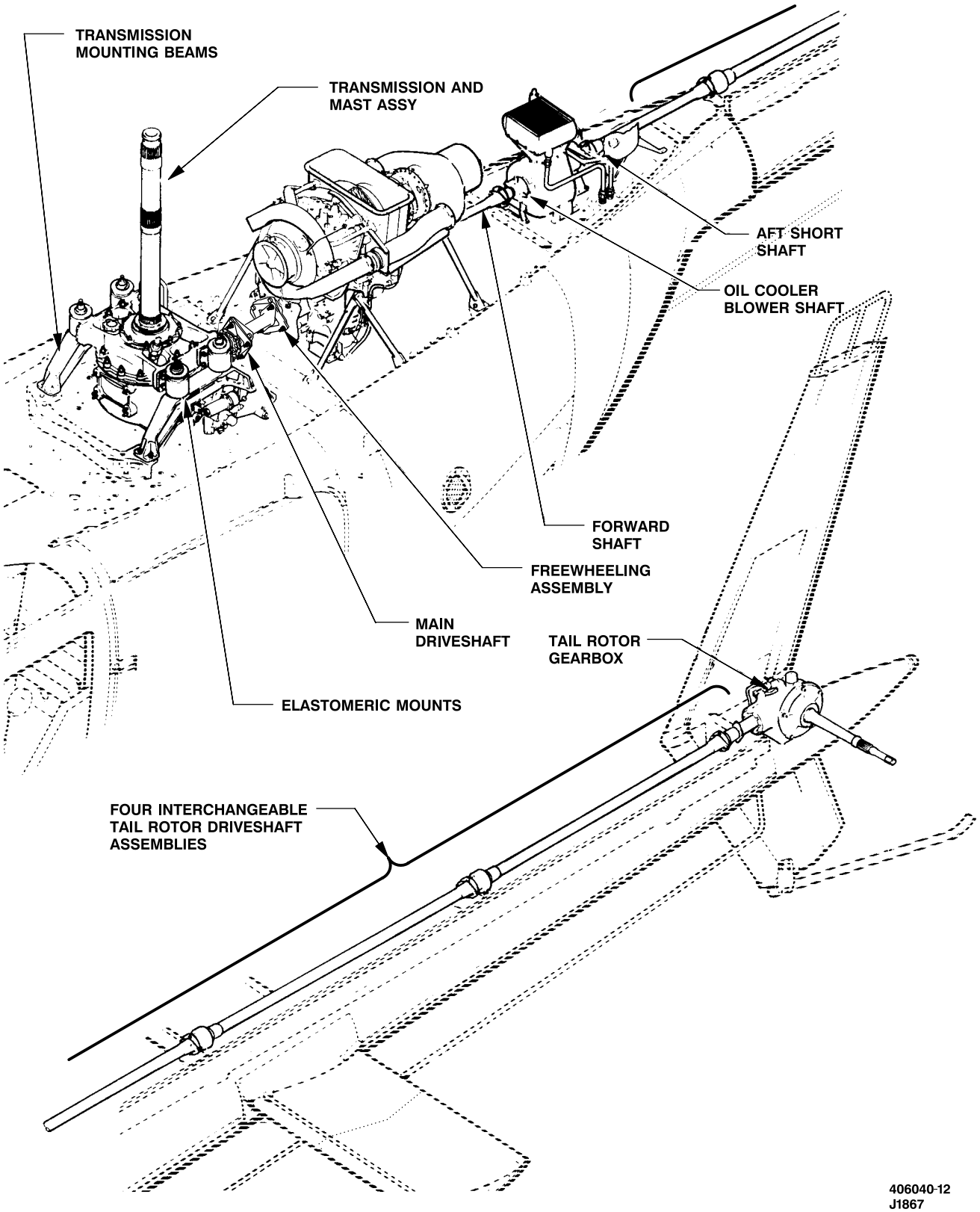
b. An accessory gear pad is located on the left side of the transmission case immediately forward of the oil filter. This pad is used to mount and drive the flight control hydraulic boost pump and the tachometer generator.

c. The transmission is equipped with several indicators to ensure proper operation and give immediate warning of any malfunction.

(1) The oil level sight glass is located on the right side of the transmission case and is easily accessible for visual reference.

(2) Two chip detectors are mounted on the transmission case. One is located on top of the transmission case and one is on the lower left side of the case. Both chip detectors have fuzz burner capabilities. A caution message will appear on the MFD when contact is made across the magnetic plug of either chip detector.

(3) The transmission oil filter is equipped with a pop-out filter impending bypass indicator. When the oil flow through the main element is becoming restricted, the indicator button on the end of the filter cartridge will pop out, indicating that oil is on the verge of bypassing the first element and will be filtered only by the second element. This button cannot be reset unless the filter elements are changed. Filter element must be replaced prior to next flight.



Drive System Components

(4) An oil temperature sensor is located on the oil filter assembly. This sensor transmits the transmission oil temperature to the transmission oil temperature indicator on the instrument panel. If the temperature limits are exceeded, a caution message will appear on the MFD and an audio tone will sound.

(5) An oil pressure transducer is remotely located on the transmission deck below the transmission. This transducer measures oil pressure and transmits it to the oil pressure indicator on the instrument panel. If the pressure limits are exceeded, a caution message will appear on the MFD and an audio tone will sound.

(6) The main rotor mast torque indicating system electrically measures the amount of twist in the mast and calculates mast torque. The indication is transmitted to the torque indicator on the instrument panel. If the 10-second torque limit is reached, a caution message appears on the MFD. If 10 seconds are exceeded or the upper limit of this range is reached, a warning message will appear on the MFD. An audio tone will accompany either condition.

(7) The main rotor rpm measuring system measures rotor rpm in percentage of maximum rpm. This system measures rpm at the base of the main rotor mast and displays it on the dual tachometer, mounted on the instrument panel. Warning messages of high or low rpm appear on the MFD. A backup system displays a digital readout of the rotor rpm on the multiparameter display.

4. Transmission Oil Cooling System. The oil cooling system is mounted aft of the engine. It consists of the heat exchanger/blower unit that is shared with the engine oil cooling system. The fan of this unit is attached to the tail rotor driveshaft and forces air through the heat exchanger. A thermostat is located on the oil filter assembly to allow the oil cooler to be automatically bypassed during cold weather starting. A pressure bypass valve allows the oil cooler to be bypassed whenever the cooler core becomes clogged.

5. Tail Rotor Driveshaft System. The tail rotor driveshaft system delivers torque from the freewheeling assembly to the tail rotor gearbox. It is mounted along the rear portion of the engine and along the top of the tailboom. It is covered by a hinged driveshaft cover. The system consists of one steel shaft, one steel oil cooler shaft, and five aluminum shafts of which four are interchangeable. These shafts are connected at each end by a flexible coupling. The system is supported by six hanger bearings, each equipped with a grease fitting for lubrication.

6. Tail Rotor Gearbox Assembly. The tail rotor gearbox assembly is attached to the aft end of the tailboom. It is a 90 degree gearbox and serves as the final drive for the tail rotor. The gearbox has a self-contained splash type oil lubrication system that is serviced through a cap on the top of the case. A fuzz burner chip detector is located on the lower right side of the casing. A caution message appears on the MFD and an audio warning sounds when foreign metal particles are picked up by the plug. A thermoswitch, located on the upper right area of case, transmits a caution message to the MFD when the oil reaches its maximum temperature limit. A sight glass is located at the rear of the case for visual indication of the oil level.

1-30. HYDRAULIC SYSTEM

The hydraulic system reduces crew member effort and fatigue by minimizing cyclic, collective, and directional control input and feedback sources. The following components and controls comprise the hydraulic system:

1. Reservoir. The reservoir is located on the cabin roof and is mounted on a bracket which is forward and left of the transmission. A window is provided on the cowling for inspection of the sight glass. The sight glass provides a means of determining when the reservoir needs servicing.

2. Hydraulic Pump. The hydraulic pump is an axial piston, pressure compensated, variable delivery type pump. The pump is transmission driven and internally regulated to 1000 psi for the purpose of powering the hydraulic system and the stability and control augmentation system (SCAS).

3. Hydraulic Filters. Two 15-micron filters with cleanable filter elements are located on the right side of the cabin roof. Both filters incorporate pop-out indicators that will pop out at 70 (±10) psid. The pop-out indicators are mechanically locked out to prevent inadvertent resetting if fluid temperature is below 35 (±15) °F. Only the return filter is equipped with an internal bypass valve. If the filter obstruction causes a 100 (±10) psid, the bypass valve will open and return fluid will flow to the reservoir unfiltered.

4. System Relief Valve. The hydraulic system incorporates a relief valve located between the pressure and return portions of the hydraulic

system. The valve will protect the system from over-pressurization in the event of a hydraulic pump malfunction. The relief valve opens at 1375 psi.

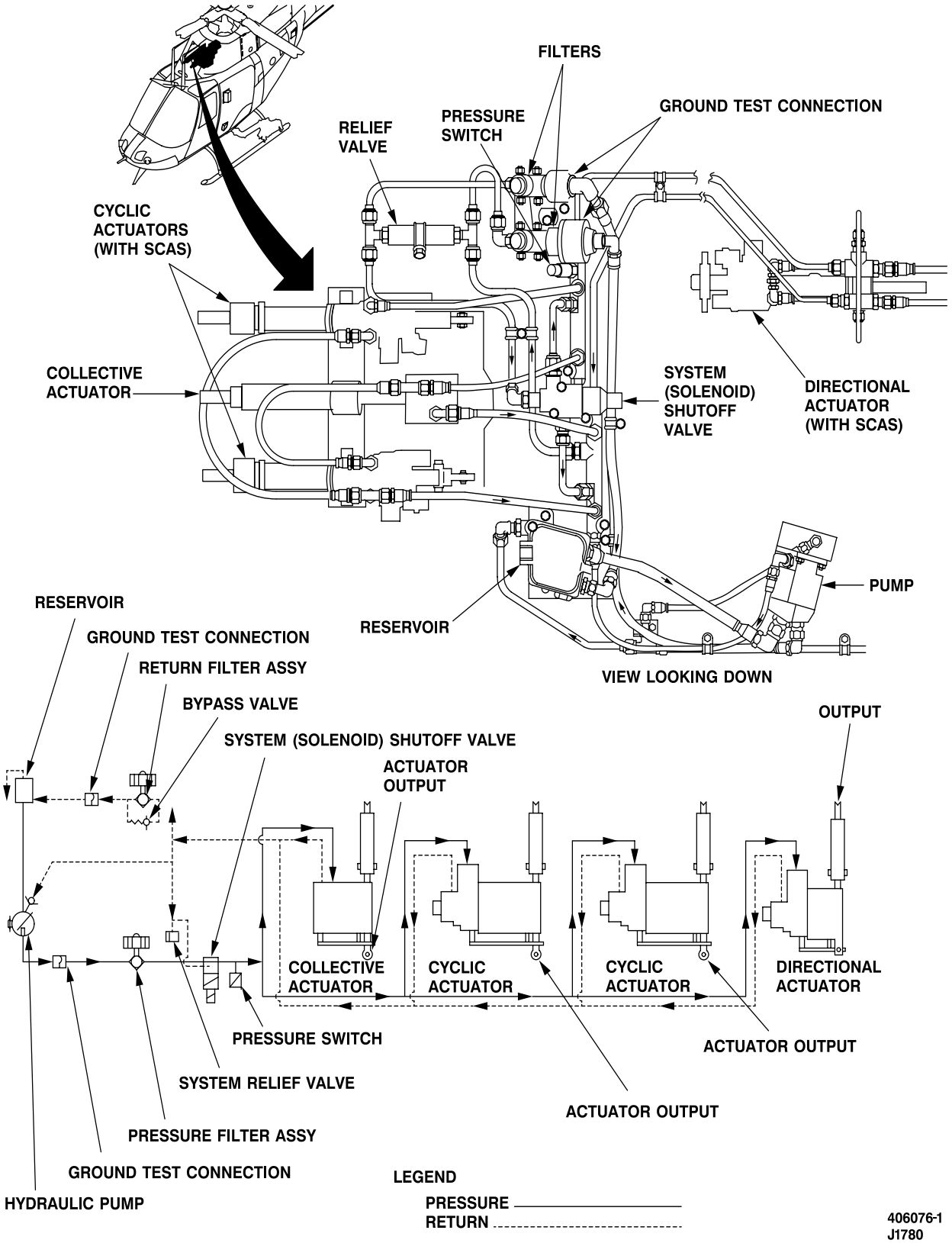
5. Hydraulic Solenoid Valve. A solenoid valve is incorporated to provide a means of turning the hydraulic system on and off. When the solenoid is deenergized, pressure is provided to the system. The solenoid valve is deenergized when the HYD SYS switch is in HYD SYS position or in the event of loss of electrical power to the solenoid valve. Placing the HYD SYS switch to the OFF position will energize the valve, and pump pressure will be ported through the return manifold back to the reservoir.

6. Pressure Switch. The hydraulic pressure switch is located on the right side of the cabin roof and is mounted to the pressure manifold. The switch will close on decreasing pressure of 500 (±100) psi. Closing of the switch will cause the LOW HYD PRESSURE caution message to appear on the MFD. The switch will open on increasing pressure of 800 (±100) psi.

7. Ground Test Connections. Two ground test connections are provided. The test connections are quick-disconnects attached to the hydraulic filter assemblies. They provide a means of connecting a ground test unit to the hydraulic system.

8. System Actuators. There are four hydraulic actuators. Two cyclic actuators are mounted on the cabin roof and both have bolt-on SCAS modules. The collective actuator is located on the cabin roof between the two cyclic actuators. The directional control actuator is located above and aft of the aft electrical compartment and also has a SCAS module.

9. Pressure Manifold. The pressure manifold is a distribution point that permits hydraulic fluid to flow equally to all actuators.



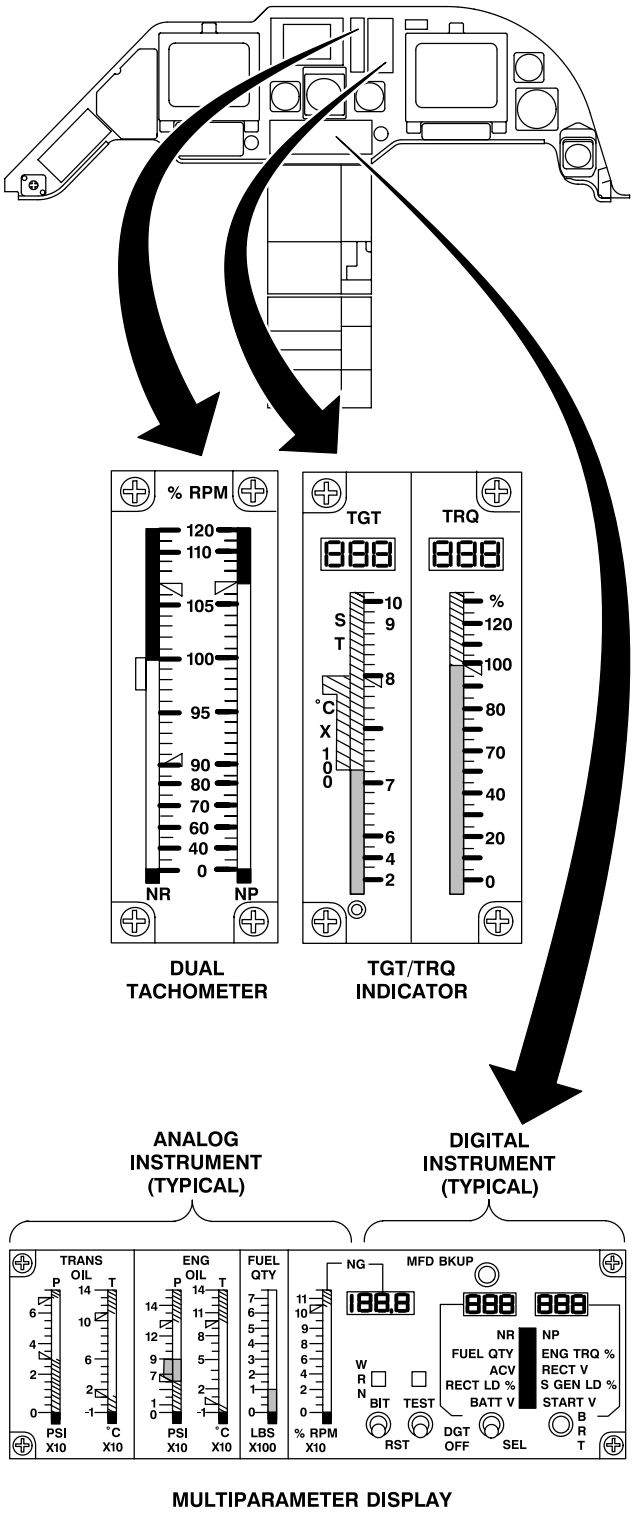
Hydraulic Schematic

1-31. INSTRUMENT SYSTEM

The helicopter is equipped with a fully integrated multiplexed cockpit. The flight control and display system includes redundant multiplex data buses, data-entry keyboard, redundant mission computers, and symbol generators.

The helicopter is equipped with both analog and digital type instruments. These instruments provide the crew with helicopter interface information. The instrument display provides extended fail-safe availability of data through multiple displays.

1. The integrated functions include a navigation and communication control, air data, radar altitude, and airborne (voiceless) target handover system (ATHS) (IDM replaces ATHS unit for target handover in OH-58D(R)), a three-axis SCAS with heading hold, a fault detection/location system (FDLS), warning/caution/advisory systems, engine condition monitoring, and mast mounted sight subsystem (MMSS) control panel and display. With the control and display subsystem, the crew can access a desired format by pressing a button on the face of the display or select a display format (flight, navigation, communication or MMS) with controls on the cyclic stick.



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2. The multifunction display will indicate warnings, cautions, and advisories. They shall fall under the categories listed below.

a. Warnings are as follows:

LOW RPM ROTOR
HIGH RPM ROTOR
ENGINE OUT
LOW FUEL PRESS (OH-58D(R))
XMSN OVER TORQUE
ENG OVER TRQ
TGT OVER TEMP
FADEC MANUAL (OH-58D(R))
FADEC FAIL (OH-58D(R))

b. Cautions are as follows:

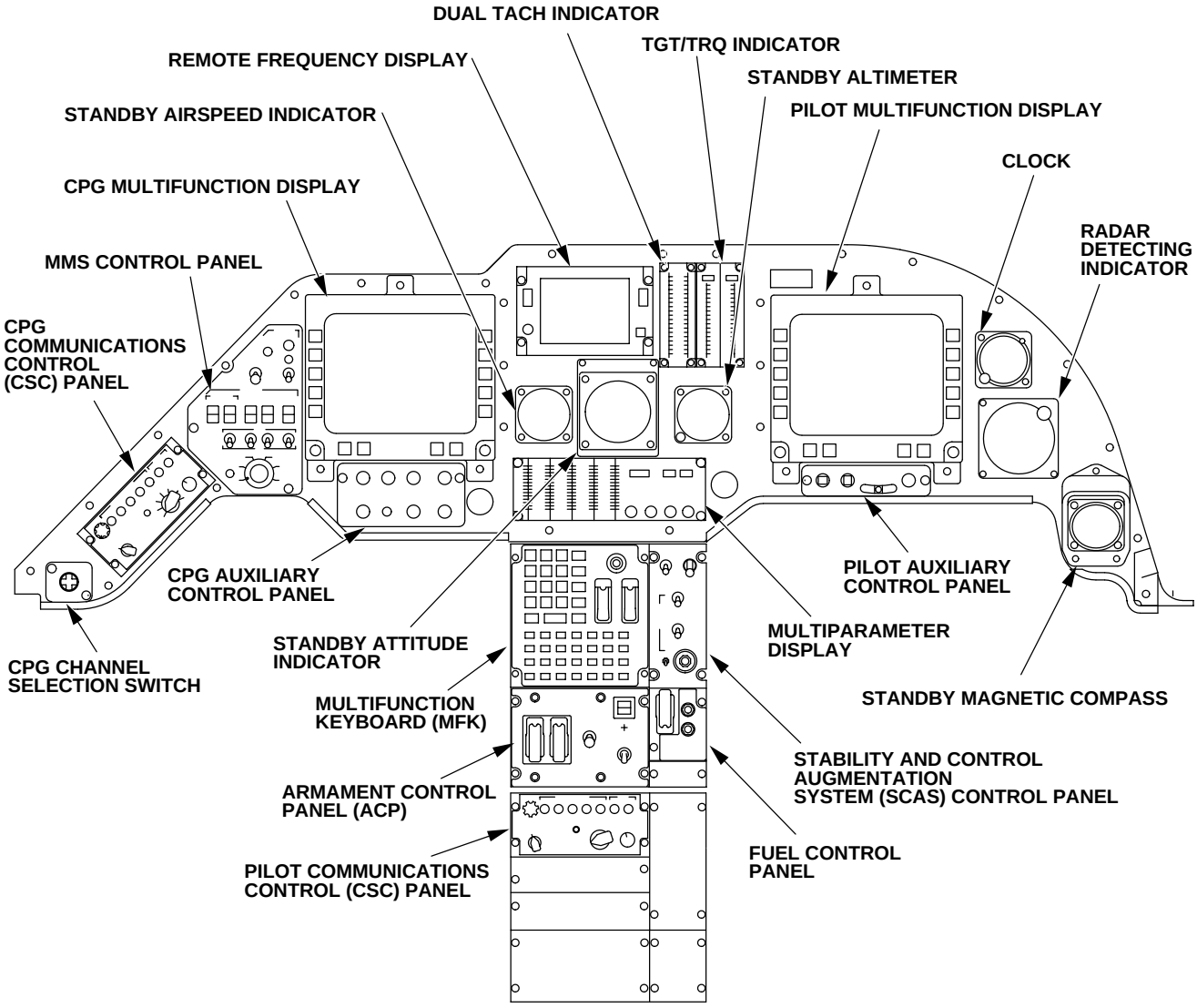
Brackets ([]) display accumulated time in seconds of high torque or high TGT in last hour.

AC GEN FAIL
ADU FAIL
CHIPS ENG FREEWHEEL
CHIPS ENG LOWER
CHIPS ENG UPPER
CHIPS T/R GRBX
CHIPS XMSN SUMP
CHIPS XMSN UPPER
DC GEN FAIL
EGI FAIL
ENG TRQ TIME LIM []
FUEL BOOST FAIL
FUEL CONTROL (OH-58D)
FUEL FILTER BYP
FUEL LOW
GPS DIVERGENT
HF RADIO FAIL
HIGH OIL PRESS ENG
HIGH OIL TEMP ENG
HIGH OIL TEMP XMSN
HIGH TEMP T/R GRBX
HIGH TRQ TIME LIM []
HOT BATT 1
HOT BATT 2
HOT BATT 1 & 2
IFF FAIL
IFF MODE 4 FAIL
INS FAIL
INV FAIL
IR JAMMER INOP
ISP FAIL (OH-58D)
MCPU LEFT MCPU (OH-58D(R))
LOW ALTITUDE (OH-58D(R))
LOW HYD PRESS
LOW OIL PRESS ENG
LOW OIL PRESS XMSN
LOW OIL QUANTITY ENG
MAST TRQ TIME LIM []
MISSILE UNLATCHED
OIL BYP ENG
P/R DISENG
RECT FAIL
RIGHT MCPU
SCAS DISENG
TGT 5 MIN LIM []
TGT 30 MIN LIM []
WEAPONS FAIL (OH-58D(R))
YAW DISENG

c. Advisories are as follows:

ALARM (OH-58D)
ALARM 1 (OH-58D(R))
ASE FAIL (OH-58D(R))
ATHS AUTHENT TABLE LOW (OH-58D)
ATHS FAIL (OH-58D)
ATHS MESSAGE RECEIVED (OH-58D)
ATHS QUEUE FULL (OH-58D)
BATT PREHEAT ON
CARGO HOOK ARMED
CHECK MESSAGE CHECKALL (OH-58D)
CHECK MESSAGE CHECKFIRE (OH-58D)
CHECK MESSAGE MAYDAY
CODE NOT ACCEPTED
DTS FAIL
EGI BATT LOW
ENG ANTI-ICE ON
EXT PWR
FADEC DEGRADE (OH-58D(R))
FADEC MAINT (OH-58D(R))
FM-1 CT FAIL (OH-58D(R))
FM-1 CUE
FM-1 FAIL
FM-1 HUB LOW (OH-58D(R))
FM-1 PT FAIL (OH-58D(R))
FM-2 CT FAIL (OH-58D(R))
FM-2 CUE
FM-2 FAIL
FM-2 HUB LOW (OH-58D(R))
FM-2 PT FAIL (OH-58D(R))
FUEL CONTROL (OH-58D)
GPS FAIL
HDG HOLD
HF RADIO FAIL
HF RADIO TUNE
HVR DEGRADE
IDM FAIL (OH-58D(R))
IFM FAIL
IMAGE RECEIVED (OH-58D(R))

INVALID COMMAND
KY-75 ALARM
LASER CODE MISMATCH
LAUNCHER SAFED
LEFT COOLANT LOW
LEFT LAUNCHER FAIL
MISSILE ALERT
MISSILE ALERT - AI
MISSILE ALERT - SAM
MMS FAIL
MMS VIDEO NOT AVAILABLE
MOIST VTR TAPE
NAV INVALID
NAV NOT ALIGNED
NAV UPDT REQUIRED
NO AUTO START (OH-58D(R))
NO CODE
ONE YAW CHAN OFF
PITOT HEAT ON
P (Y) CODE INVALID
RHE FAIL
RIGHT COOLANT LOW
RIGHT LAUNCHER FAIL
RMS FAIL (OH-58D(R))
SCAN NOT AVAILABLE (OH-58D(R))
TACAN FAIL
TACAN INVALID
TACFIRE AUTH TABLE LOW (OH-58D(R))
TACFIRE MSG NO (OH-58D(R))
TACFIRE MSG CHKALL (OH-58D(R))
TACFIRE MSG CHKFIRE (OH-58D(R))
TACFIRE MSG MAYDAY (OH-58D(R))
TACFIRE QUEUE FULL (OH-58D(R))
TIMER ONE LABLE (OH-58D)
TIMER (OH-58D(R))
UHF FAIL
VDU FAIL (OH-58D(R))
VHF FAIL
VTR FAIL
VTR TAPE FULL
WEDGE CONSTANT ZERO
WPN NOT ACTIONED
WPN NOT ARMED
WPN NOT SELECTED



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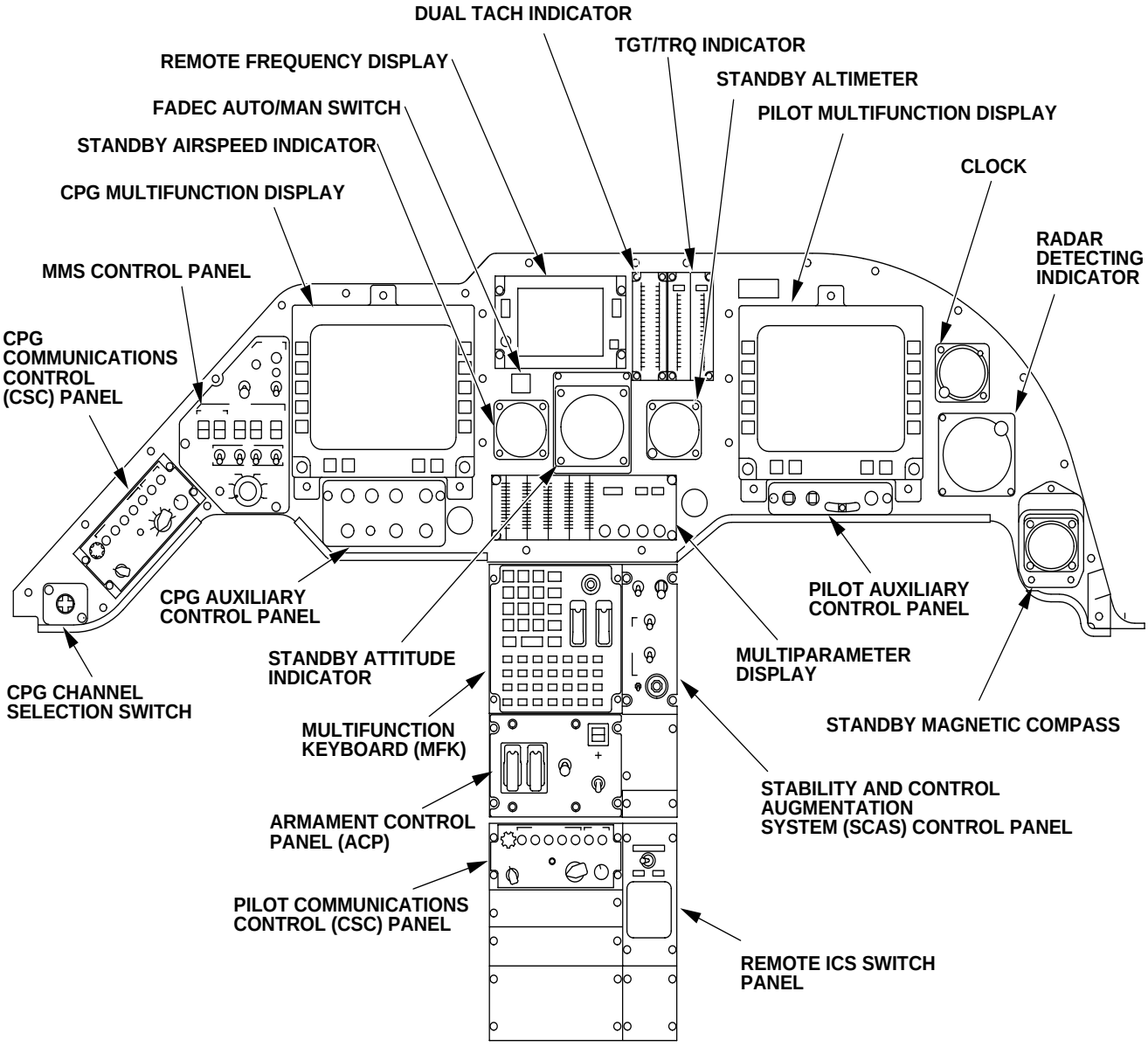
OH-58D Instrument Panel and Center Console



OH-58D(R) Instrument Panel and Center Console

1-32. ELECTRICAL SYSTEMS

The electrical system provides all the ac and dc power required to operate the helicopter systems.

NOTE

Electrical power is not required for powered flight; however, only the standby compass, clock, barometric altimeter, and airspeed indicator will continue to operate.

1. Primary ac electrical power for the helicopter systems is provided by a 120/208-volt, three-phase, 400 Hz, air-cooled ac generator. This generator is driven by the engine power turbine from an engine accessory drive pad.

2. Primary dc electrical power for the helicopter systems is provided by two sources. The dc essential bus is powered from a 28-volt, 200-ampere transformer rectifier unit (TRU), and the battery emergency bus is powered by a 28-volt, 200-ampere starter-generator. The TRU is located in the aft electrical compartment, and the starter-generator is located on the engine and driven by the engine gas producer (NG) turbine. An additional dc bus (power assured) is powered from the battery generator bus.

3. Backup systems for both dc and ac primary power systems are provided. These backup systems ensure that no single electrical failure will cause the loss of any system essential to tactical instrument flight. Automatic switching from primary power to backup is provided. Backup dc power is provided by the starter-generator. In the event the ac generator fails, the starter-generator output to the inverter will supply ac power. A starter-generator failure results in the TRU assuming the full load imposed by the dc essential bus, battery emergency bus and power assured bus. In the event of an ac generator failure, the inverter will assume the loads on the 115 Vac essential bus.

4. Electrical power for starting and emergency power supply is provided by a single 24-volt, 17 ampere-hour battery. This battery is located in the nose of the helicopter and is controlled by the BATT 1 switch in the overhead console. Complete provisions are included for the installation of a second battery. This second battery is included as part of the winterization heater installation. When installed, the second battery is located in the aft electrical compartment and controlled through the BATT 2 switch in the overhead console.

5. External power receptacles are provided for application of both ac and dc electrical power while on the ground. With dc external power applied, engine starting and systems checkout may be accomplished. Application of ac external power allows operation and checkout of systems powered by 115 Vac and 26 Vac power.

6. Battery System Operation. The battery supplies power to the battery emergency bus when the ESNTL BUS switch is in the START position. When two batteries are installed, either battery will supply bus power. In the event of total generator failure with the ESNTL BUS switch in the RUN position, the battery supplies power to the inverter, dc essential power assured bus, and the dc essential bus.

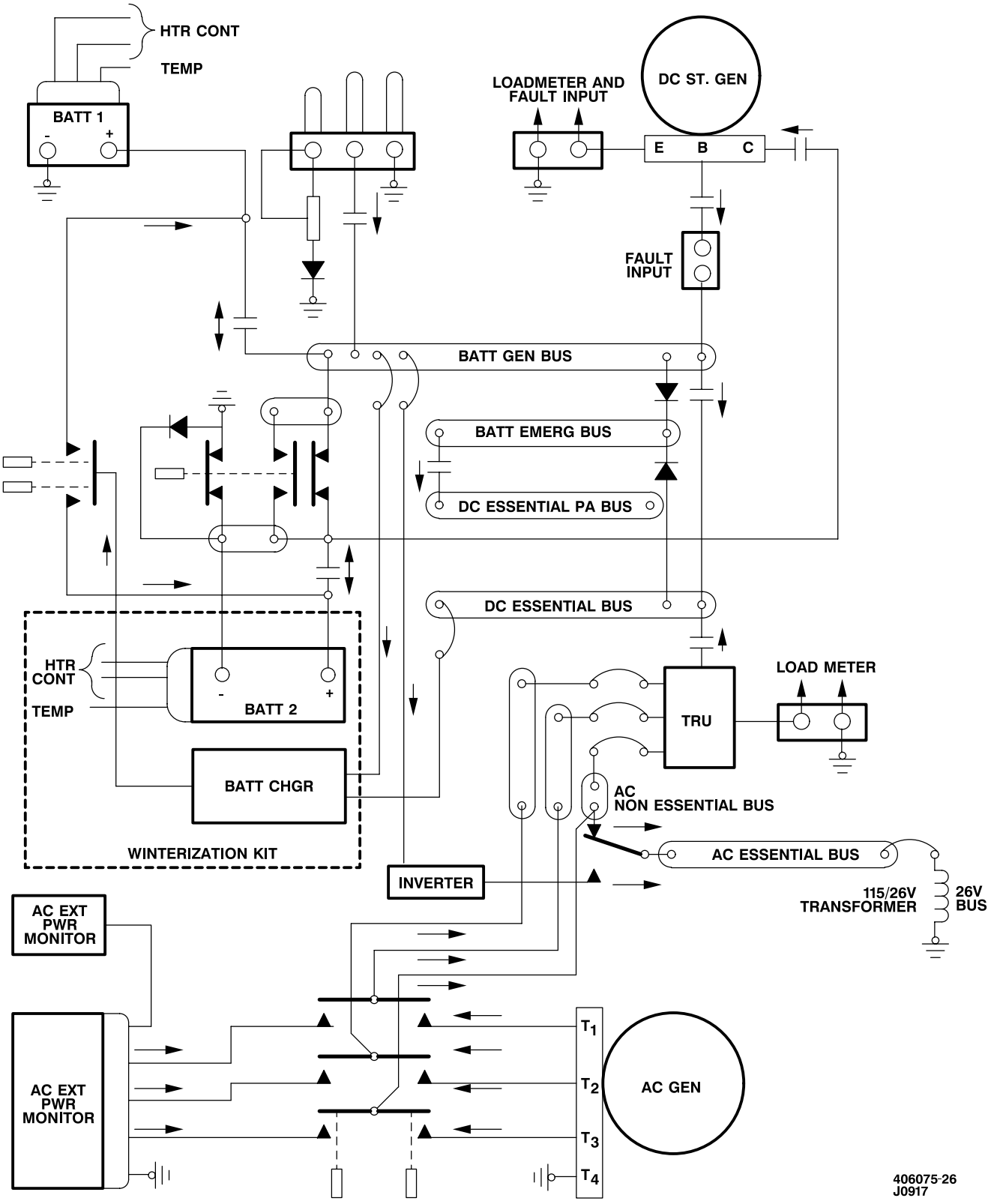
7. DC Electrical Power Distribution System. The dc power distribution system is divided into bus systems. The four distinct but interrelated systems are the dc essential power assured bus, battery emergency bus, dc essential bus, and battery generator bus.

8. AC Electrical Power Distribution System. The ac power distribution system consists of 3 buses: the ac 3-phase 115/200V non-essential bus powered by the ac generator or ac external power; the ac single-phase 115V essential bus powered by the ac generator, ac external power, or the inverter; and the ac single-phase 26V bus powered from a 115/26V transformer connected to the 115V essential bus.

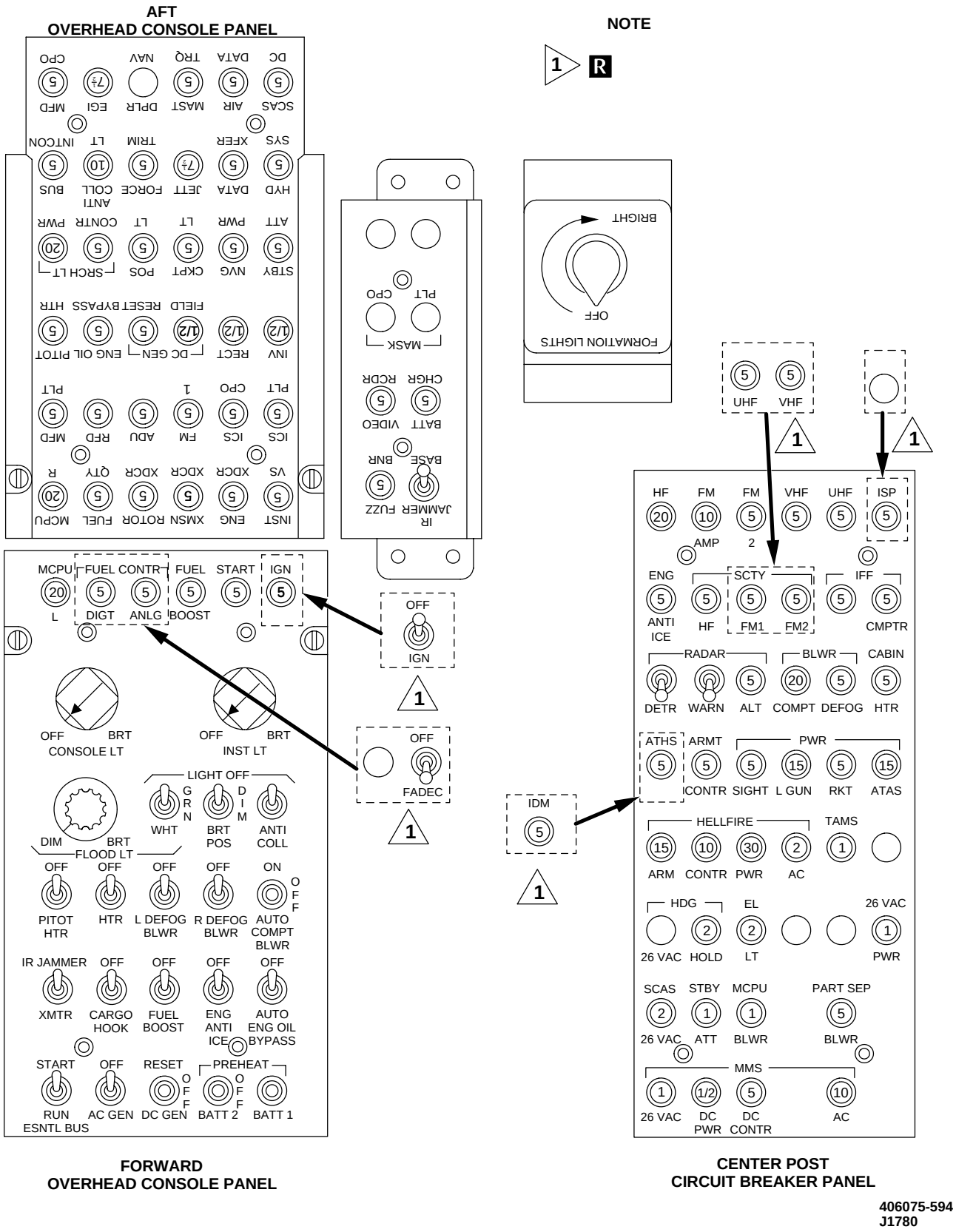
9. Electrical Systems Controls.

a. DC Power Control. DC power is controlled by the BATT 1 and BATT 2 switches, DC GEN switch and DC GEN FIELD and RESET circuit breakers in the overhead console and by a 9TH CELL circuit breaker (for battery preheat monitoring) located in the forward battery compartment. Distribution of dc power is also controlled by the ESNTL BUS switch.

b. AC Power Control. AC power is controlled by the AC GEN switch, ESNTL BUS switch, and INV and RECT circuit breakers. These controls are located in the overhead console. In addition, 26 Vac power is controlled by the 26 VAC PWR circuit breaker located on the center post circuit breaker panel.



Basic AC and DC Supply Circuits



FORWARD
OVERHEAD CONSOLE PANEL

CENTER POST
CIRCUIT BREAKER PANEL

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J1780

Circuit Breaker Configuration

1-33. FUEL SYSTEM

The fuel system consists of a crash resistant self-sealing fuel cell, engine-driven fuel pump, fuel cell mounted boost pump, quantity indication system, emergency fuel shutoff valve, drainage provisions, low level warning system, engine mounted filter with filter bypass indicator, and breakaway valves. Installed in the top of the cell is a breakaway vent line and a pressure switch. The system incorporates a closed circuit refueling receiver.

1. Controls and Indicators.

a. Fuel quantity Indicator. Fuel quantity is displayed by a vertical scale continuous readout indicator located on the multiparameter display (MPD). The indicator is powered by the dc battery emergency bus and protected by the fuel quantity circuit breaker located on the overhead console circuit breaker panel.

b. Fuel Boost Pump. A fuel boost pump, mounted at the bottom of the fuel cell, is provided for assisting the engine-driven suction pump to deliver fuel. The pump is automatically engaged during engine starting. The fuel boost pump is activated by placing the FUEL BOOST switch to FUEL BOOST. A FUEL BOOST FAIL caution message will be displayed on the MFD when the fuel boost pump pressure is below safe operating limits.

c. Emergency Fuel Shutoff Valve. An emergency fuel shutoff valve is mounted on the firewall. The valve is manually operated and is provided to stop fuel flow to the engine. The valve is operated with a control handle mounted on the forward right side of the overhead console.

d. Fuel Low Caution. A FUEL LOW caution message will be displayed on the multifunction display (MFD) when there are 100.5 pounds of fuel (JP-8) remaining. The message is sent to the MFD by the thermistor mounted on the fuel quantity probe.

e. Fuel Filter Bypass Caution. A FUEL FILTER BYP caution message will be displayed on the MFD when the engine mounted fuel filter becomes partially obstructed.

f. Pressure Switch. The pressure switch will activate FUEL BOOST FAIL caution message on the MFD when the boost pump fails to deliver normal pressure.

2. Closed Circuit Refueling Receiver. The closed circuit refueling receiver allows refueling by either the gravity feed method or by using a closed circuit refueling nozzle. When refueling with the closed circuit refueling nozzle, an automatic shutoff of fuel is provided at a predetermined level.

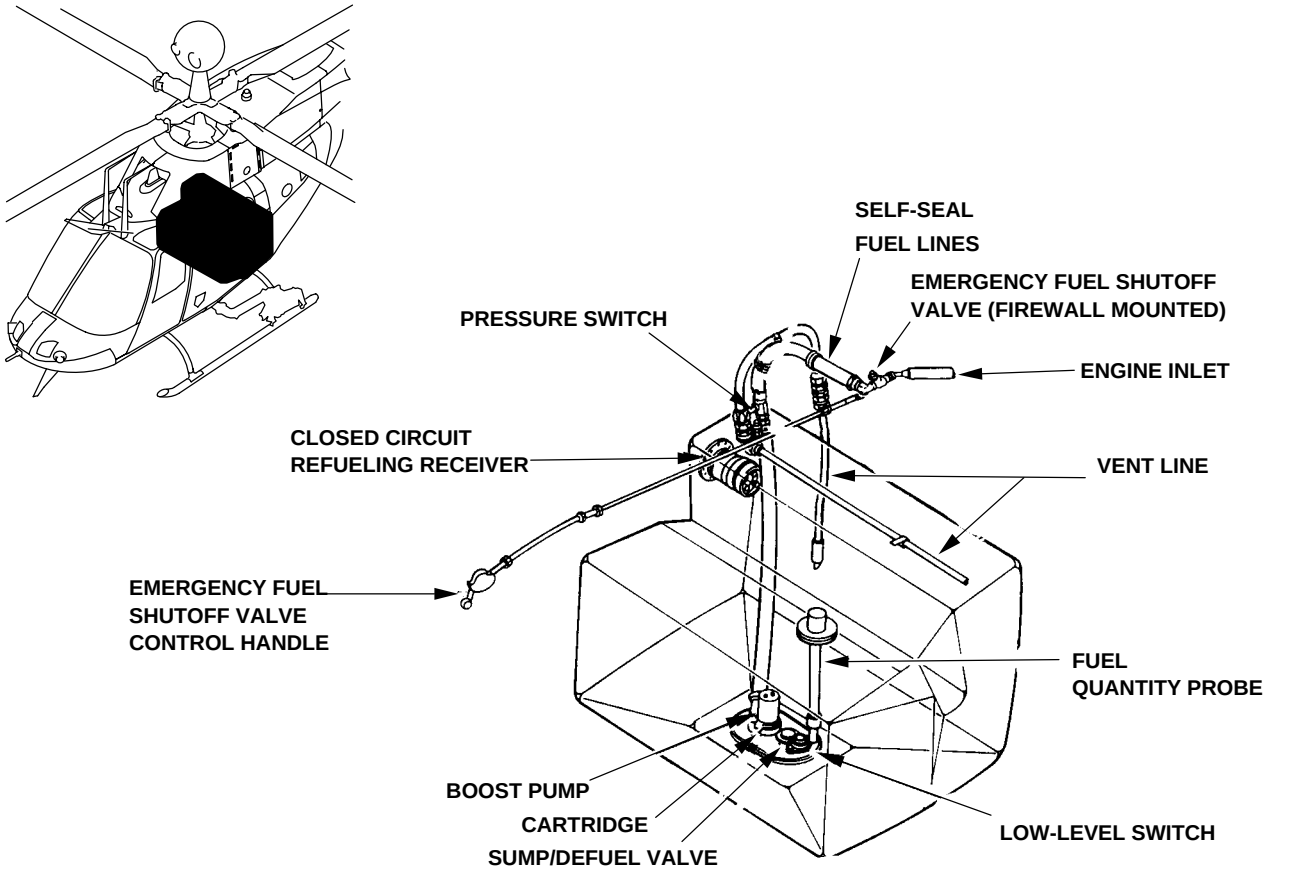
a. The sump valve is located in the lowest part of the fuel cell and is used for fuel sample and defuel purposes. The sump valve is used in determining fuel contamination levels.

b. Filler cap and adapter is located on right side of fuselage aft of doors and provides for fueling and defueling access.

1-34. FLIGHT CONTROLS

The flight control system is a positive mechanical type, actuated by conventional helicopter controls. Complete controls are provided for both pilot and CPG. The system includes a cyclic control system for attitude and directional control, a collective control system for vertical control, tail rotor control system for directional control, a force trim system, and a SCAS. Hydraulic servoactuators are employed in the control system to prevent feedback forces and reduce pilot fatigue.

1. Cyclic Control System. The cyclic control system is operated by a cyclic stick, located forward of each crewmember seat, and is the primary attitude control. Movement of the cyclic stick produces a corresponding tilt of the swashplate through two hydraulic servoactuators, mounted on the cabin roof, for lateral and longitudinal inputs. The tilt of the swashplate induces corresponding changes in the main rotor blade pitch angles during rotation. The blades then produce differential aerodynamic lift forces, which cause the plane of rotation of the rotor to tilt. The helicopter will fly in the direction in which the rotor plane is at its lowest angle.


SELF-SEAL
FUEL LINES
EMERGENCY FUEL SHUTOFF
VALVE (FIREWALL MOUNTED)
PRESSURE SWITCH
ENGINE INLET
CLOSED CIRCUIT
REFUELING RECEIVER
VENT LINE
EMERGENCY FUEL
SHUTOFF VALVE
CONTROL HANDLE
FUEL
QUANTITY PROBE
BOOST PUMP
CARTRIDGE
SUMP/DEFUEL VALVE
LOW-LEVEL SWITCH
FIREWALL EMERGENCY FUEL
SHUTOFF VALVE
FUEL
QTY
LBS
X100
MPD
VENT
LINE
FUEL
QUANTITY
PROBE
BREAKAWAY
VALVE
ENGINE
INLET
CLOSED CIRCUIT
RECEIVER
FUEL CELL
SUMP/DEFUEL VALVE
BOOST PUMP
FUEL FILTER BYP
FUEL BOOST FAIL
FUEL LOW
MPD
LOW LEVEL SWITCH
(THERMISTOR)
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J0418

Fuel System

2. Collective Control System. The collective control system is operated by a collective stick, located to the left of each crewmember seat, and is the primary control for lift. Movement of the collective stick to the up position increases the angle of attack of the main rotor blades, resulting in increased lift. The amount of collective movement determines the results of either an ascent or descent condition of the helicopter.

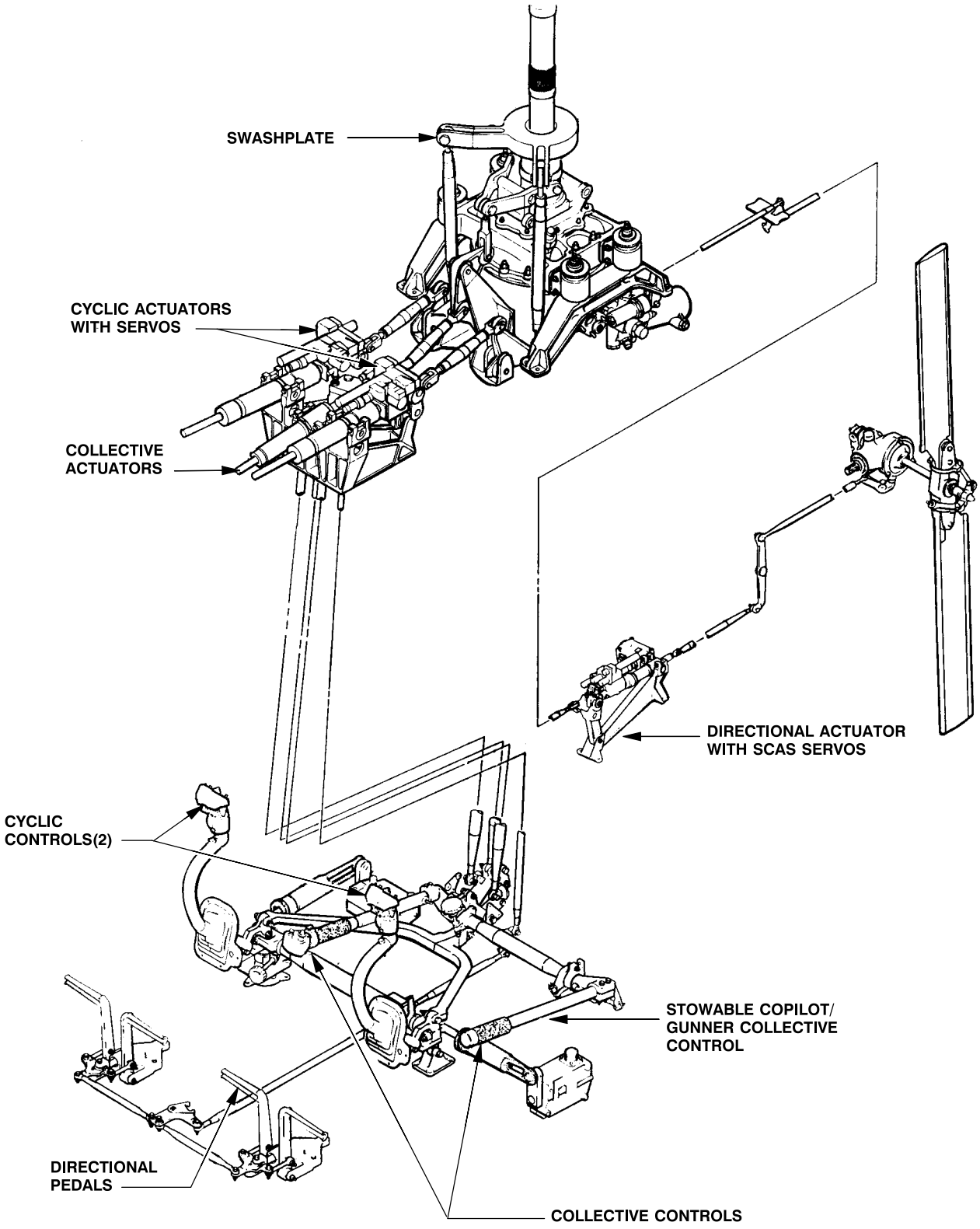
3. Tail Rotor Control System. The tail rotor control system is operated by pilot or CPG anti-torque pedals. Pushing the pedals will change the pitch of the tail rotor blades, resulting in directional control. Pedal adjusters are provided to adjust the pedal distance for individual comfort.

4. Force Trim System. The force trim system is incorporated into the cyclic and tail rotor control systems to provide an artificial feel in the flight controls and also provide a reference point for the SCAS to operate against. The cyclic force trim system consists of two magnetic brakes and two force gradients for pitch and roll. The tail rotor force trim system consists of one magnetic brake and one force gradient for yaw.

5. Stability and Control Augmentation System (SCAS).

a. The SCAS is a three-axis (pitch, roll, and yaw), limited authority, rate reference augmentation system. The SCAS cancels undesirable helicopter motion during flight. Both MCPUs receive inputs from the six SCAS control motion transducers, the SCAS gyros, and attitude heading and reference system (AHRS). From these signals the MCPUs send a signal to the appropriate SCAS actuator electro-hydraulic valve, telling it to extend or retract. The linear variable differential transformer (LVDT), located in the SCAS module, sends a signal back to the MCPU telling it how far the actuator has moved. When the movement is sufficient to cancel the undesirable movement, the MCPU signals the actuator to stop.

b. The heading hold mode (HHM), operated in conjunction with the yaw SCAS system, is used primarily for low altitude/airspeed operation. The MCPU computes the logic necessary to maintain aircraft heading if the yaw channels are operating and SCAS is engaged. The embedded global positioning/inertial navigation (EGI) system (if installed) maintains aircraft heading by making inputs to the rotary actuator mounted to the directional control actuator magnetic brake. The rotary actuator is powered by 115 Vac single-phase, and the antitorque magnetic brake is powered by 28 Vdc off the SCAS DC circuit breaker.



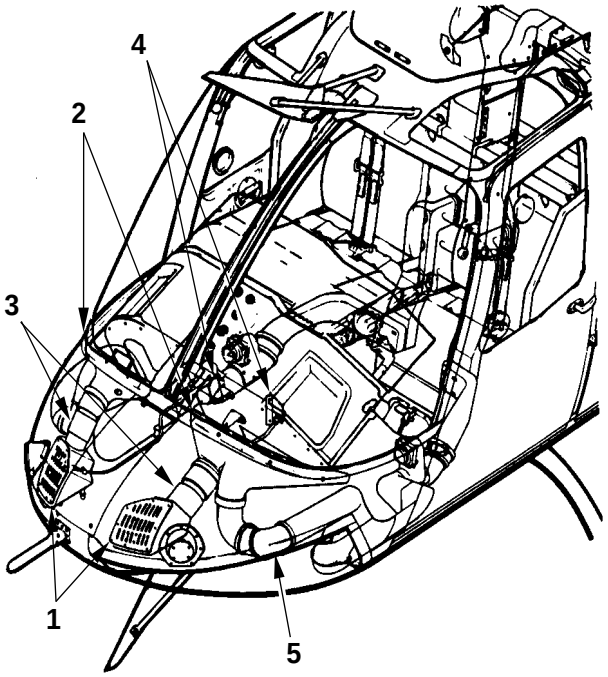
Controls System

1-35. UTILITY SYSTEMS.

The utility systems are made up of the ram air system and the bleed air system.

1. Ram Air Defogging. Ram air for defogging the windshield enters through two air inlet grilles (1) and is directed to the defog nozzles (2). The defog nozzles are located at the base of the windshield and direct ram air towards the windshield. Defog blowers (3) are installed in each ram air duct and provide a steady flow of air when ram airflow is insufficient to defog the windshield. Ram air controls (4), identified by VENT PULL decals, control the volume of air passing through the defog nozzles. The controls are located on each side of the center console.

2. Bleed Air Defogging/ Defrosting. Bleed air ducts (5) carry bleed air from the bleed air heating system to the defog nozzles (2) for windshield defogging/defrosting. Openings in the bleed air ducts provide bleed air for defogging/defrosting lower crew station windows. Bleed air for defogging/defrosting is available whenever the bleed air heating system is activated.



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H1342

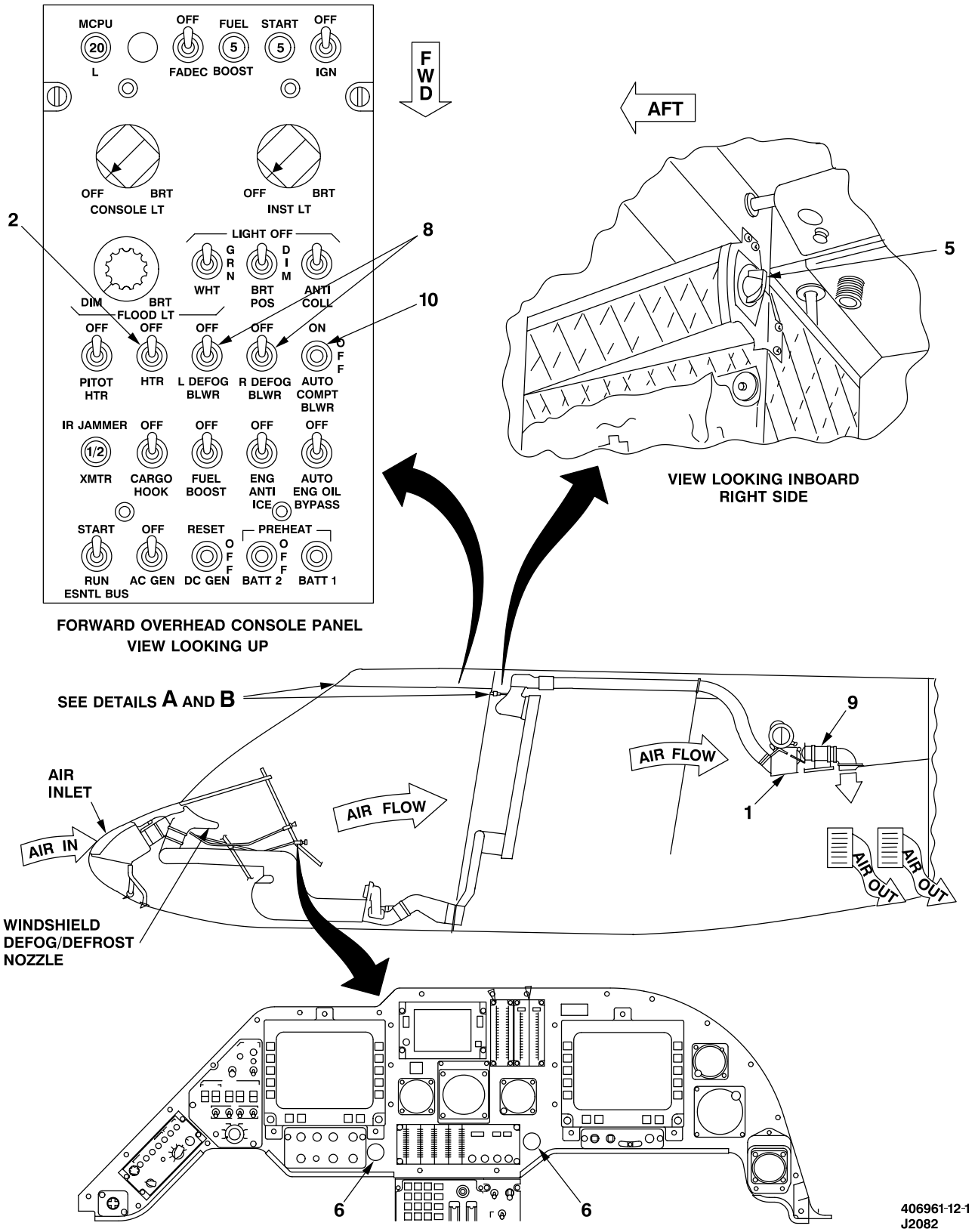
1-36. ENVIRONMENTAL CONTROL SYSTEMS.

The environmental control systems are made up of the bleed air heating system, the ventilation system, and the equipment cooling system.

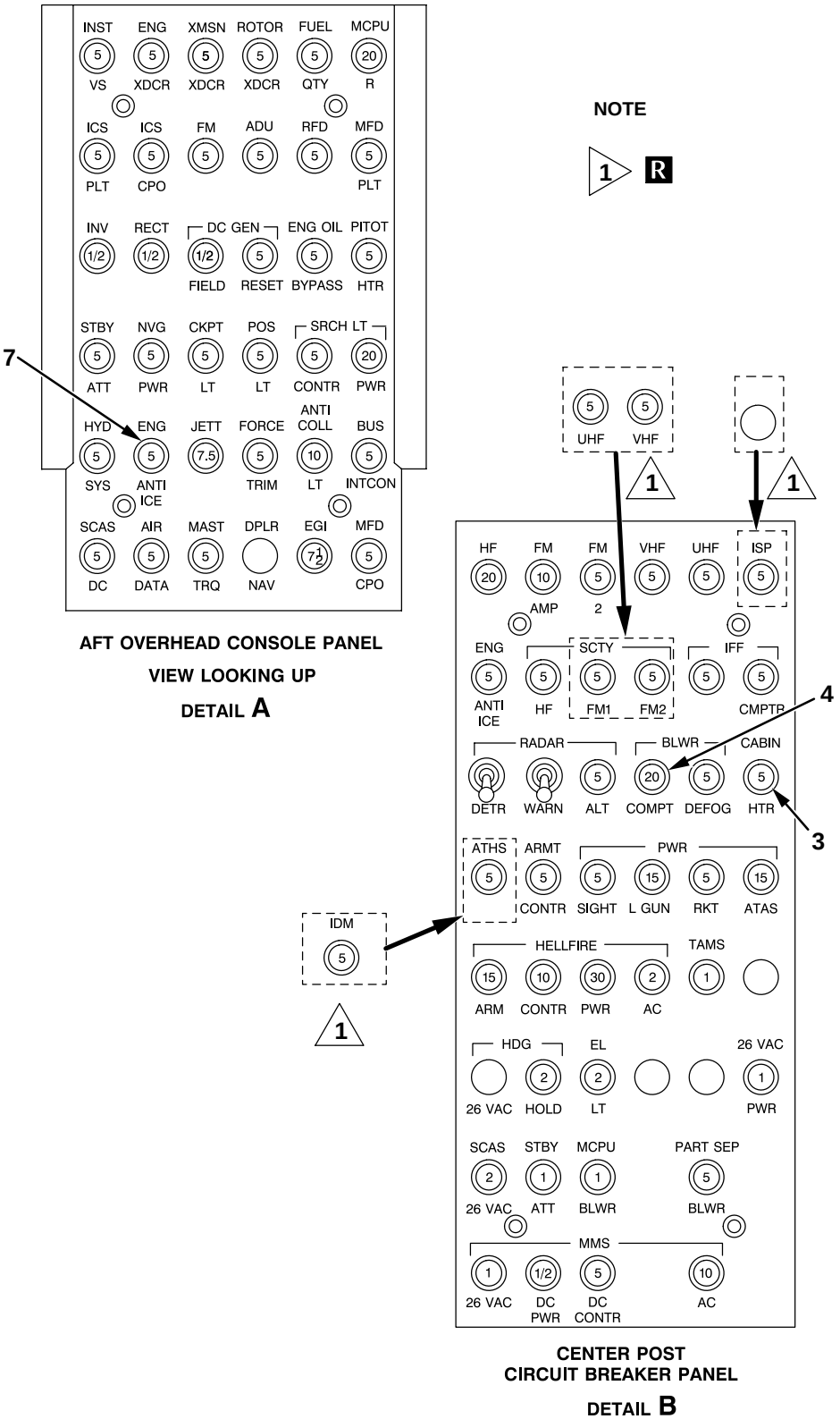
1. Bleed Air Heating System. The bleed air heater (1) is installed in the equipment compartment aft of the electrical shelf. A HTR switch (2) activates the system. Circuit protection is provided by the CABIN HTR circuit breaker (3, detail B) and the BLWR COMPT circuit breaker. Temperature is controlled by rotating the HEAT control knob (5) above and behind the pilots head. This knob operates a control cable in the cabin roof to adjust an air temperature sensor mounted in the heater discharge duct. Adjusting the sensor mixes the fresh air and bleed air to obtain the air temperature.

2. Ventilation System. The ventilation system is an integral part of the heating and defogging system. Each system uses the same duct system for air circulation in the cabin. Outside fresh air from two air inlets, located on the nose of the helicopter, is directed through the windshield defog nozzles mounted on the lower windshield frame. VENT PULL control knobs (6) open and close the fresh air inlets. The DEFOG BLOWER circuit breaker (7, detail A) and L and R DEFOG BLWR switches (8) may be turned on to provide a larger volume of air directed to the windshield and forward cabin area. Airflow to cool both multifunction display units is provided via vent holes in a shroud located above each of the two multifunction display units. Outside fresh air also enters the aft cabin area via a scoop type air inlet located in each of the left and right access doors.

3. Equipment Cooling. A cooling blower (9) is provided to cool the electronic/avionics equipment. The blower has the capacity to adequately cool the electronic/avionics equipment up to 100 °F (37.8 °C) outside air temperature (OAT) with crew doors on and up to 120 °F (48.9 °C) OAT with crew doors off. A three-position COMPT BLWR switch (10), located in the overhead console, permits the system to be turned OFF, manually operated in the ON position, and automatically operated by temperature sensors in the AUTO position. The temperature sensors automatically turn on the cooling blower whenever the temperature reaches 100 °F (37.8 °C). The avionics cooling blower can also be utilized to remove smoke and other contaminants from the cabin by pulling air from the crew and equipment compartments and exhausting the air overboard through the aft equipment bay.



Environmental Control System



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J2082

Environmental Control System Circuit Breakers

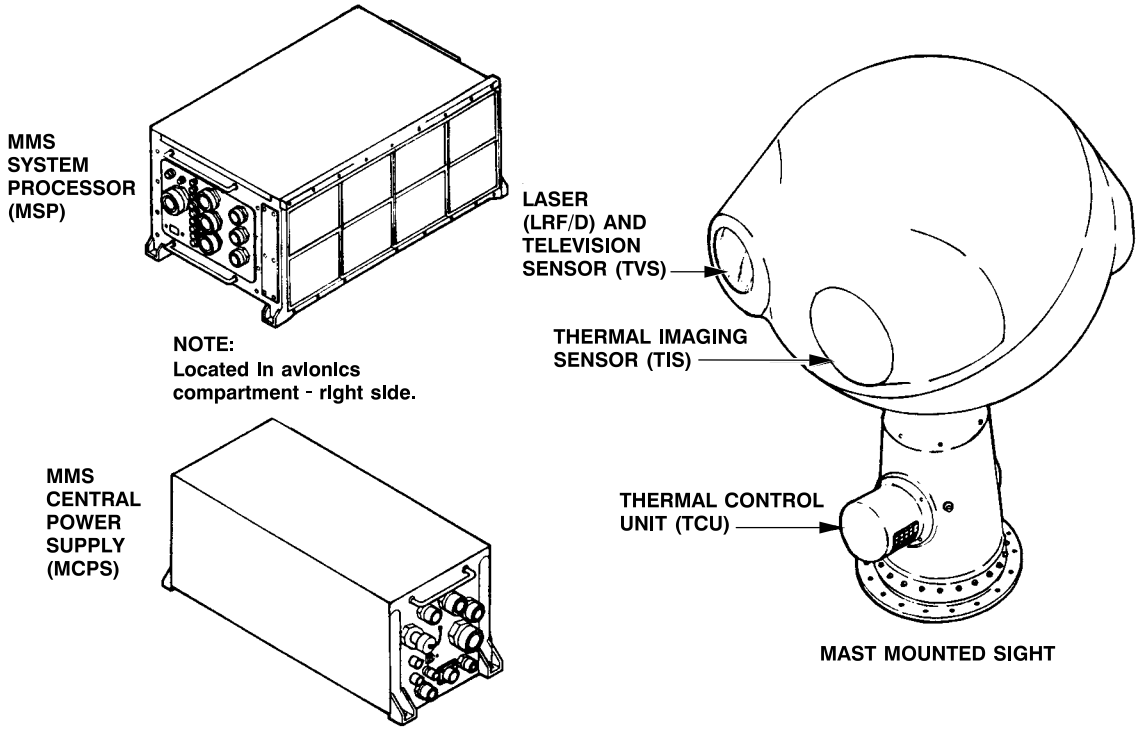
1-37. MISSION EQUIPMENT (AVIONICS)

Mission equipment (avionics) consists of the MMSS and the ATHS or IDM if installed.

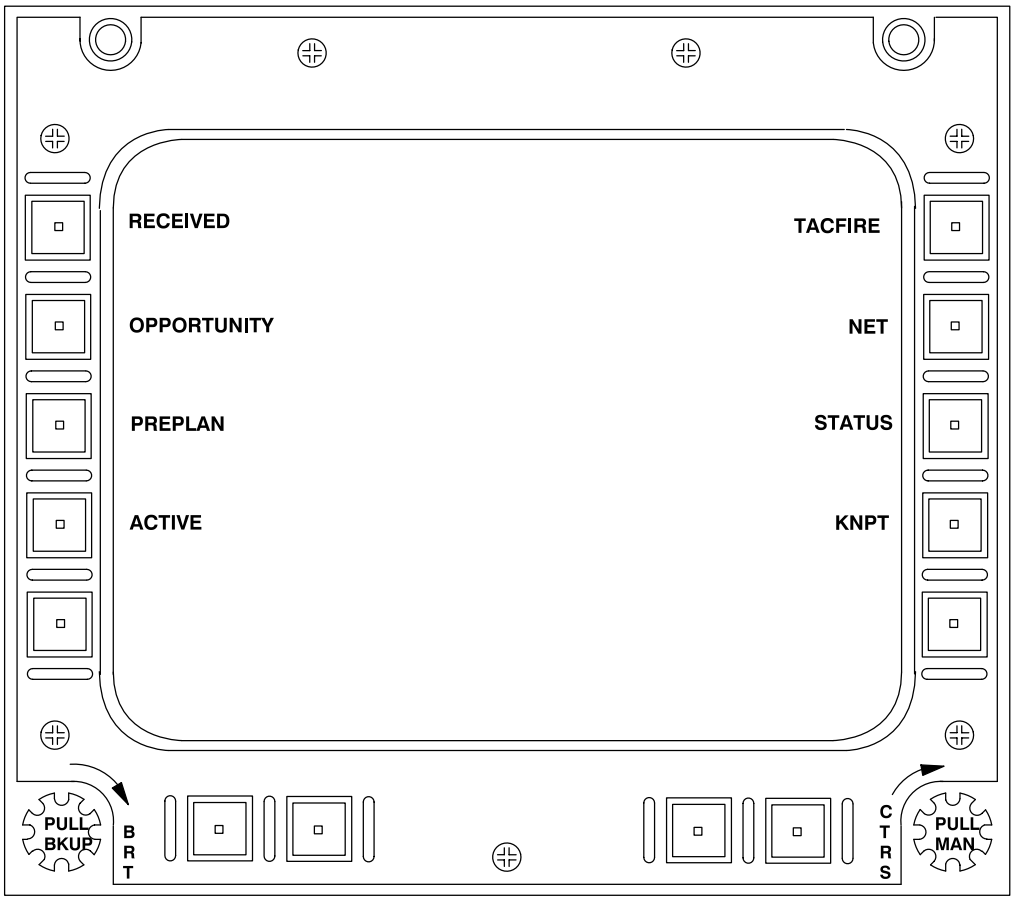
1. Mast Mounted Sight Subsystem (MMSS). The MMS provides the ability to search, detect, recognize, track, locate, and designate ground targets in both day and night environments. The subsystem is used with the CDS and the EGI system if installed. With the CDS the crew can "call up" a desired format by pressing a button on the face of the MFD or selecting a display format (flight, navigation, communication, or MMS) with controls on the cyclic stick.

Targets are detected, acquired, and tracked using either the thermal imaging sensor (TIS) for infrared sensing during darkness or poor visibility and television system (TVS) during daylight operations. In addition to these two systems, a laser rangefinder/designator system (LRF/D) is provided. The LRF/D system is used for range determination, target designation and navigation and waypoint identification.

2. Airborne Target Handover System (ATHS)/ Improved Data Modem (IDM). The ATHS/IDM gathers, formats, disseminates, and controls the transmission of information between the helicopter and other aircraft and between the helicopter and ground units. The system replaces the need for voice communication when transferring targeting information among combined arms teams. The ATHS/IDM provides a digital communications link between an airborne scout and other airborne and ground activities. This digital link provides the information path to request, assign, control, and monitor both standard and COPPERHEAD artillery, indirect HELLFIRE, and autonomous attack missions, as well as providing a means of reporting/requesting team activity.



Major MMS Components



NOTE:

Located on instrument panel.

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J1780

Pilot and CPG MFD

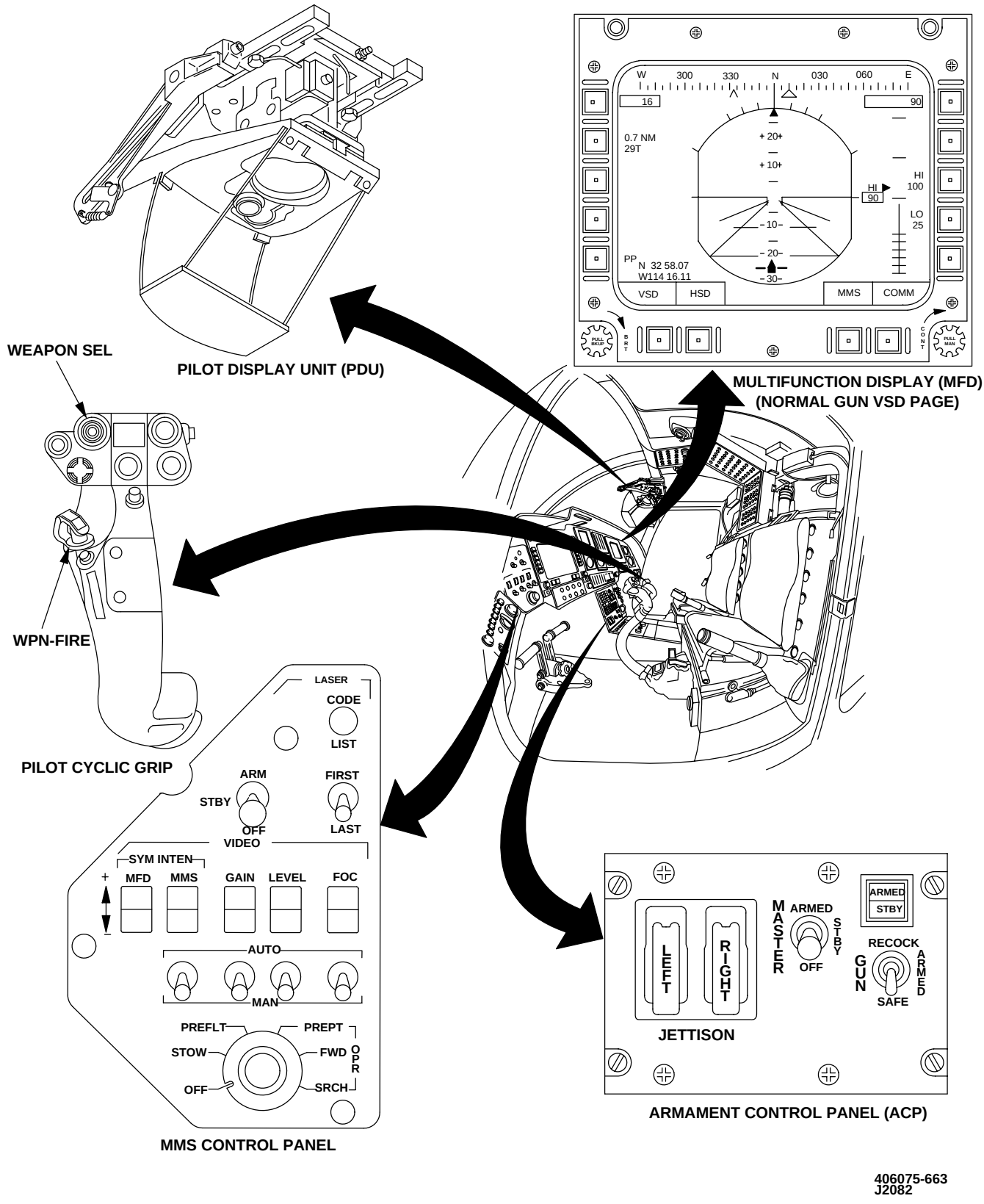
1-38. MISSION EQUIPMENT (ARMAMENT)

Mission equipment (armament) on the OH-58D and OH-58D(R) consists of sight assemblies, UWPs, ejector racks, and weapons installed on both sides of the helicopter. The weapons systems include ATAS weapon system and complete provisions for HELLFIRE missiles, 2.75-inch rockets, and .50 caliber machine gun pod. The .50 caliber machine gun is used on the left UWP only. These weapons are integrated into the cockpit using the CDS, MMS, and armament control panel (ACP). All weapons are jettisonable except the .50 caliber machine gun.

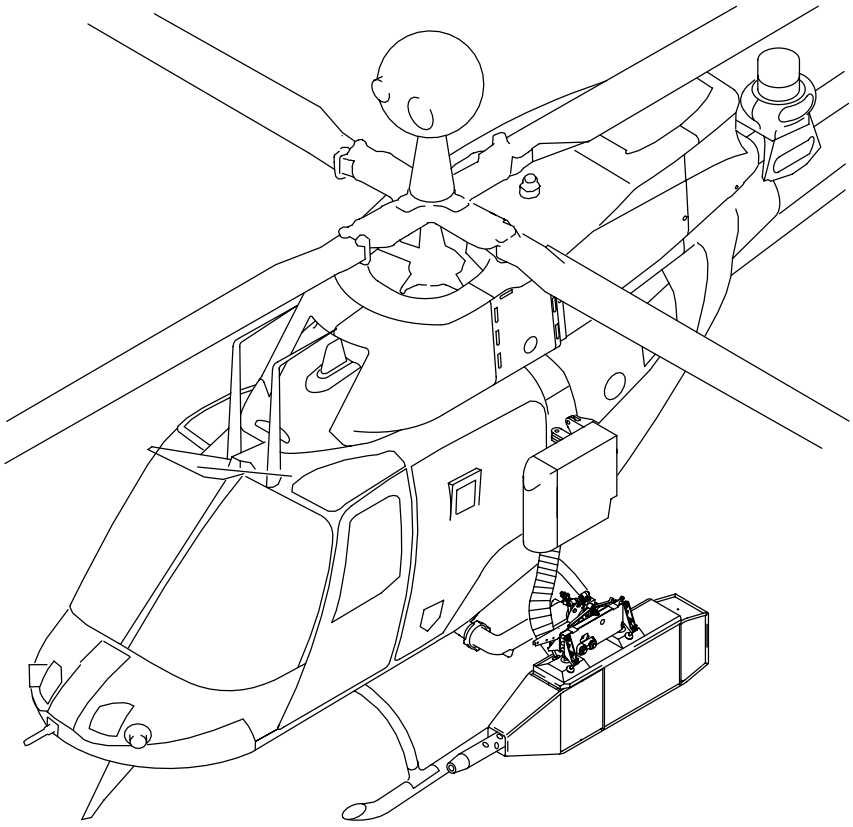
The UWP, installed in each side of the intermediate fuselage, has mounting provisions for a variety of weapons. The UWP consists of the aircraft fittings, arm assemblies, pylon assemblies, and ejector rack assemblies. Expandable bolts and quick-disconnect electrical connectors provide for quick removal and installation of the UWP. The UWP features a hinge fitting which allows the pylon to be folded (with weapons installed if required), reducing space required for shipping or storage of helicopter.

A rack support assembly located on the outboard end of each UWP provides a mounting point for the ejector rack and for boresight adjustment.

The ejector racks provide attaching points for weapon systems and contain explosive cartridges which allow a malfunctioning weapon to be jettisoned.



Mission Equipment — Armament



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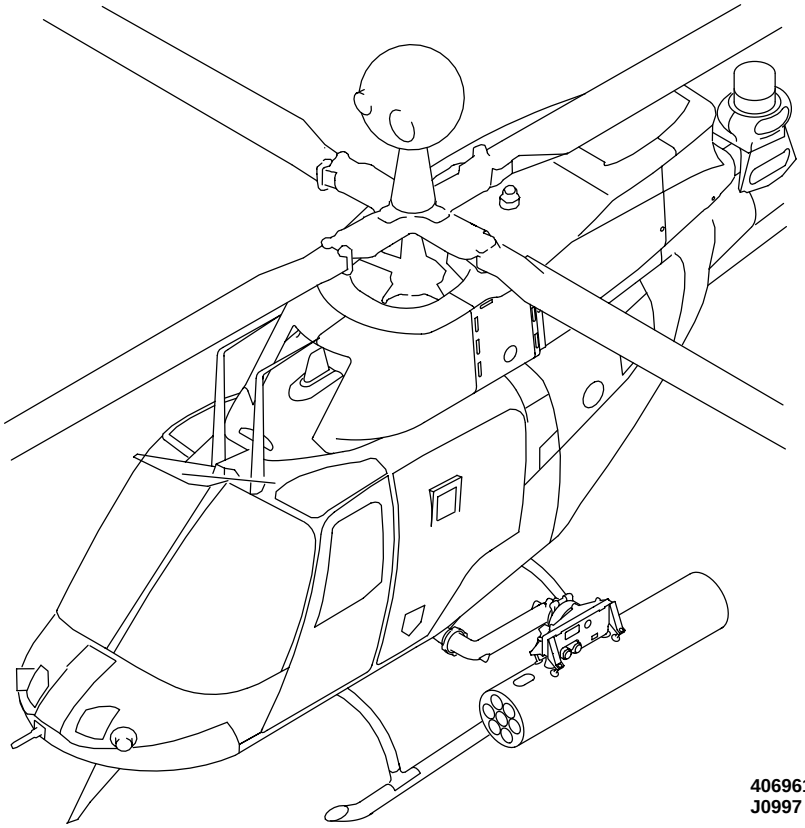
.50 Caliber Machine Gun

The weapon systems are described as follows:

1. The .50 caliber machine gun system consists of a .50 caliber machine gun, an ammunition feed and storage system, and the necessary controls and components to operate the system. It is capable of recocking to clear malfunctions while airborne. The system is powered by the 28 Vdc essential bus. Circuit protection is provided by the L GUN circuit breaker located on the center post circuit breaker panel.

The machine gun is an aircooled, belt-fed, recoil operated, electrically controlled weapon. The machine gun is mounted in a fixed position to the UWP on the left side of the helicopter. Symmetrical loading is not required. It is capable of firing 750-850 rounds per minute at a maximum effective range of 2000 meters.



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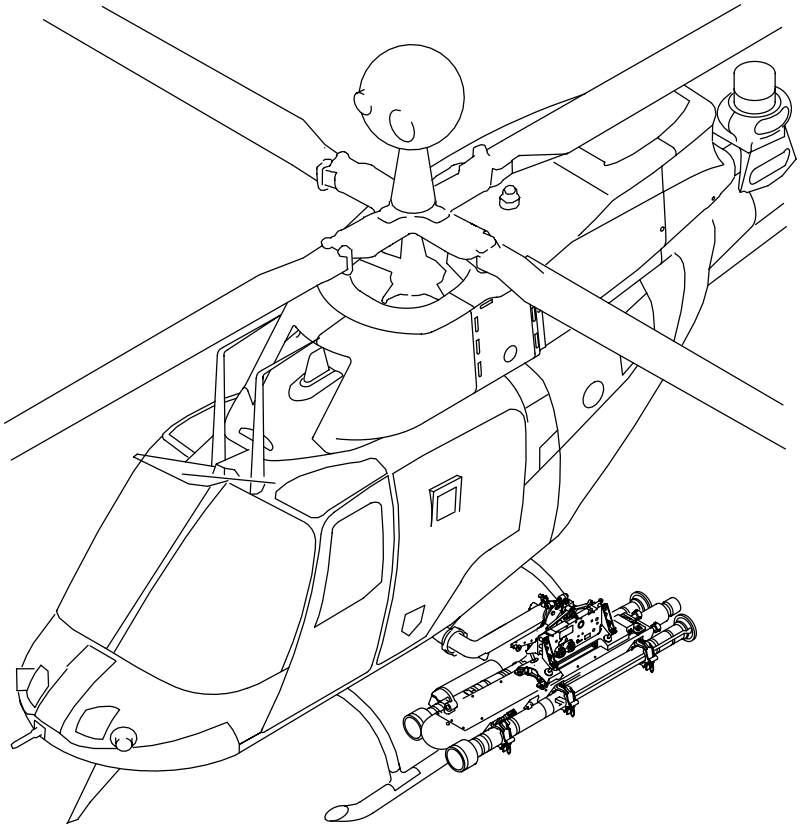
2.75-Inch Rocket Weapon System

2. The 2.75-inch rocket weapon system is a light antipersonnel/area suppression weapon system. It is capable of air-to-air or air-to-ground delivery. It allows fuse selection and can fire rockets one at a time, in pairs, or ripple. When fired in ripple mode, rockets may be segregated into zones or fired until supply is exhausted when ALL is selected. The system is comprised of 7-tube rocket launcher(s) and the necessary components, software and switches to operate the system. The rocket launcher(s) can be jettisoned using the JETTISON switches located on the armament control panel (ACP). The weapon is electrically controlled and powered by the 28 Vdc essential bus. Circuit protection is provided by the RKT PWR and ARMT CONTR circuit breakers located on the center post circuit breaker panel. The rocket launcher(s) are mounted on the ejector rack. They may be installed on one or both sides of the helicopter. Symmetrical loading is not required.



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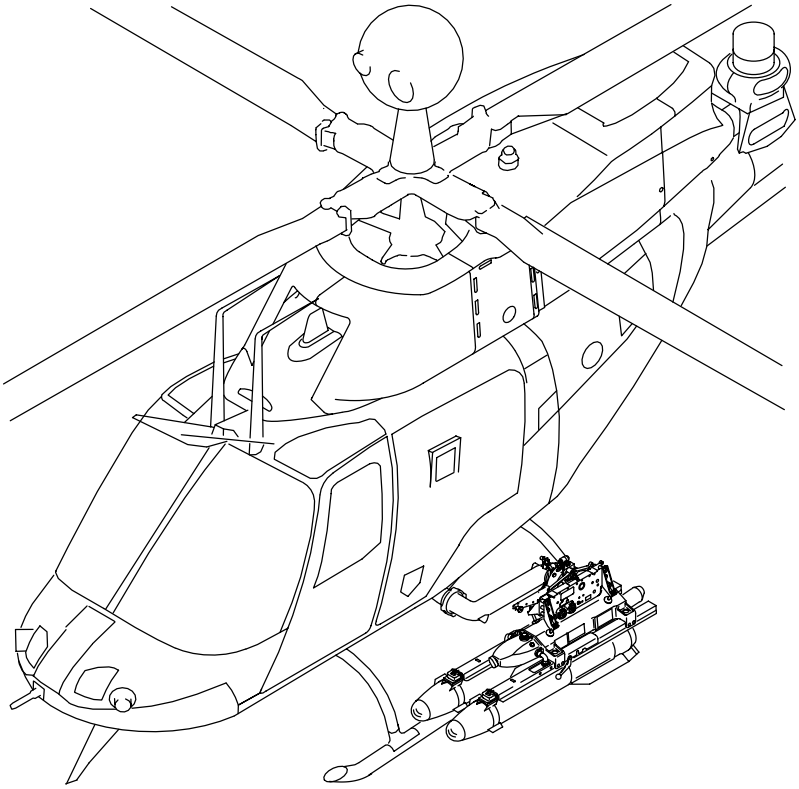
ATAS Missile System

3. The Air-To-Air Stinger (ATAS) missile is an air-to-air, heat seeking missile. The system is capable of launching four missiles at primarily airborne targets providing defensive and limited offensive air-to-air combat capability. The system is comprised of the ATAS launcher assembly and necessary components and software to operate the system. The ATAS launcher assembly is mounted on the ejector rack by means of an adapter. Each launcher contains a coolant bottle and can be jettisoned during an emergency. Each launcher is capable of mounting two missiles on each UWP for a maximum of four ATAS on the helicopter at one time. The launcher assembly receives power distribution and commands from the interface electronics assembly (IEA) and sends signals communicating its presence, processes, and response to commands to the IEA. The launcher electronics controls coolant flow to the selected missile seeker head and fires a single missile when the WPN-FIRE switch is pressed to the second detent.



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J0997

HELLFIRE Missile System

4. The HELLFIRE missile is a laser guided modular anti-armor ground or airborne launched missile. The HMS is provided with fire-and-forget capability against armored or reinforced targets that are externally designated by ground or airborne laser units. Guidance is provided through automatic terminal homing on the laser signal reflected from the laser designated target. The pilot is provided with controls and information needed for missile launching. Missile status, steering data, display of helicopter orientation for missile launching, missile selection, laser coding, and pylon mounted launchers are controlled by the CPG. Each launcher is capable of mounting and launching two missiles. The missile consists of four major sections: seeker, warhead, propulsion, and control.

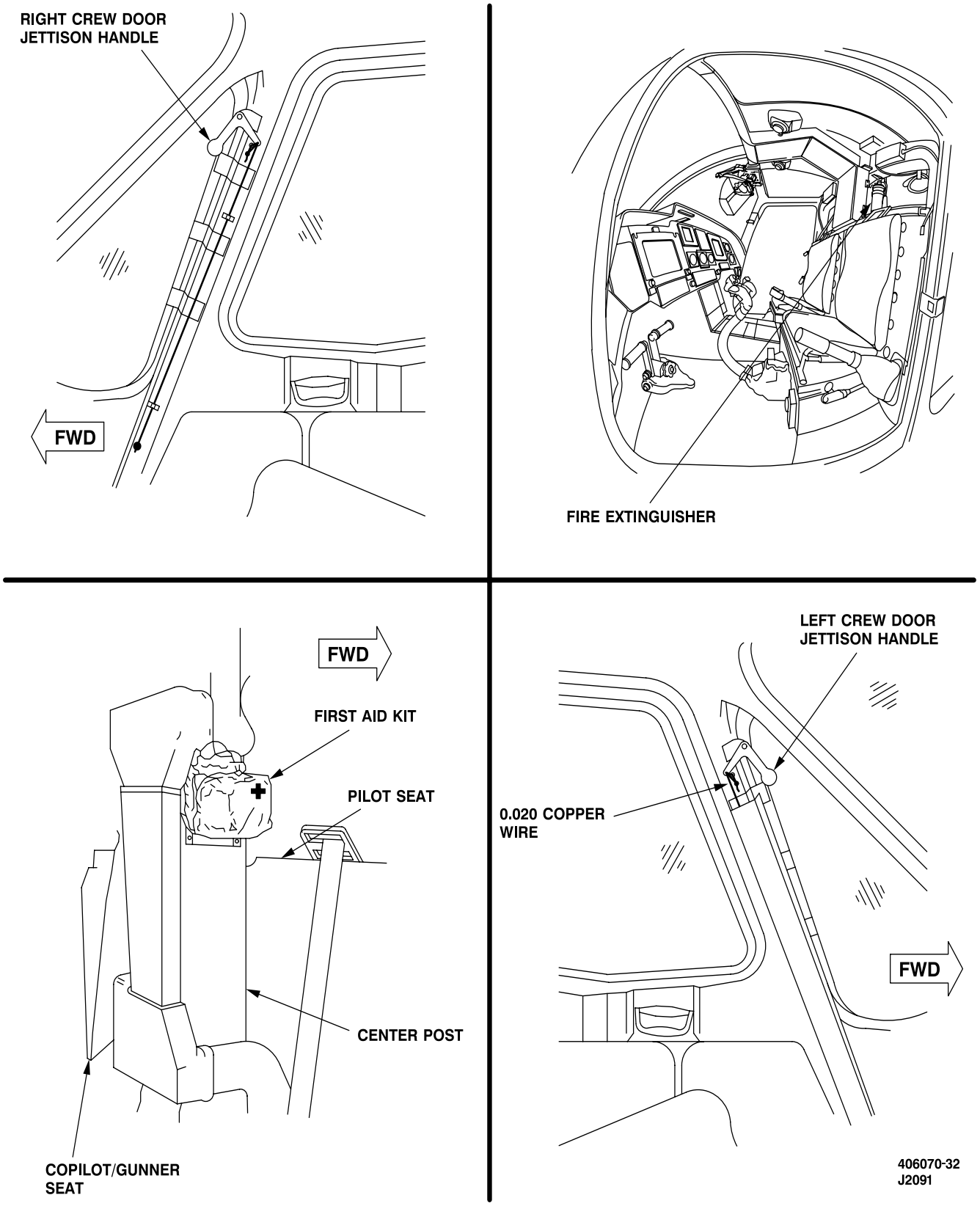
1-39. EMERGENCY EQUIPMENT

Emergency equipment consists of those items available to the crew in the event of an emergency.

1. Portable Fire Extinguisher. A portable, handheld, chemical fire extinguisher is mounted on the left side of the center support column behind the CPG seat.

2. First Aid Kit. A first aid kit is mounted on the right side of the center support column behind the pilot seat.

3. Emergency Exits. The crew doors can be jettisoned by pulling the EMERGENCY RELEASE handles located forward of the doors.



Emergency Equipment and Features

Section IV. SERVICING

1-40. SERVICING

1-41. INTRODUCTION

This section contains a list of approved fluids information for use on OH-58D helicopters. Locations of filters, sight gauges, and drains are shown on servicing diagrams as required. Standard torques are provided in Appendix P and TM 1-1500-204-23.

1-42. TASK LIST

The task list contains those tasks required to support unit and intermediate level maintenance.

LIST OF TASKS

1-43. APPROVED SERVICING TABLES

Tables 1-2 through 1-5 list the approved fuels, oils, and hydraulic fluids.

WARNING

Observe the precautions in all fuel servicing and defueling operations as applicable. Refer to FM 10-67-1 for precautions when servicing helicopter.

Table 1-2. Approved Domestic Fuels

Source	Primary or Standard Fuel	Alternate fuel
US Military Fuel	JP-8 (MIL-T-83133)	JP-4 or JP-5 (MIL-T-5624) F-40
American Oil Co.	American JP-4	American Type A
Atlantic Richfield	Arcojet B	Arcojet A, Arcojet A-1
Richfield Div		Richfield A, Richfield A-1
B.P. Trading	B.P.A.T.G.	B.P.A.T.K
Caltex Petroleum Corp	Caltex Jet B	Caltex Jet A-1
Cities Service Co		CITGO A
Continental Oil Co.	Conoco JP-4	Conoco Jet-50, Conoco Jet-60
Gulf Oil	Gulf Jet B	Gulf Jet A, Gulf Jet A-1
EXXON Co. U.S.A.	EXXON Turbo Fuel B	EXXON A, EXXON A-1
Mobil Oil	Mobil Jet B	Mobil Jet A, Mobil Jet A-1
Phillips Petroleum	Philjet JP-4	Philjet A-50
Shell Oil	Aeroshell JP-4	Aeroshell 640, Aeroshell 650
Sinclair		Superjet A, Superjet A-1
Standard Oil Co.		Jet A Kerosene, Jet A-1 Kerosene
Chevron	Chevron B	Chevron A-50, Chevron A-1
Texaco	Texaco Avjet B	Avjet A, Avjet A-1
Union Oil	Union JP-4	76 Turbine Fuel

Table 1-3. Approved Foreign Fuels

Source	Primary or Standard Fuel	Alternate fuel
Foreign Fuel	NATO F-40	NATO F-44
Belgium	BA-PF-2B	
Canada	3GP-22F	3-6P-24e
Denmark	JP-4 MIL-T-5624	
France	Air 3407A	
Germany (West)	VTL-9130-006	UTL-9130-007/UTL 9130-010
Greece	JP-4 MIL-T-5624	
Italy	AA-M-C-1421	AMC-143
Netherlands	JP-4 MIL-T-5624	D. Eng RD 2493
Norway	JP-4 MIL-T-5624	
Portugal	JP-4 MIL-T-5624	
Turkey	JP-4 MIL-T-5624	
United Kingdom (Britain)	D. Eng RD 2454	D. Eng RD 2498

NOTE

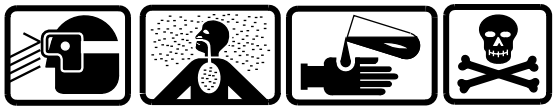
Anti-icing and Biocidal Additive for Commercial Turbine Engine Fuel - The fuel system icing inhibitor shall conform to MIL-I-27686. The additive provides anti-icing protection and also functions as a biocide to kill microbial growths in aircraft fuel systems. Icing inhibitor conforming to MIL-I-27686 shall be added to commercial fuel not containing an icing inhibitor during refueling operations, regardless of ambient temperatures. Refueling operations shall be accomplished in accordance with accepted commercial procedures. The anti-icing and biocidal additive is not available in the Army Supply System, but will be locally procured when needed.

CAUTION

- To prevent damage to transmission, if oils MIL-L-7808 and DOD-L-85734 are mixed, system shall not be operated for more than 5 hours, then transmission and freewheeling assembly shall be drained and filter shall be changed.
- DOD-L-85734 shall be used for ambient temperatures above -40 °F.
- MIL-L-23699 shall be used for ambient temperatures above -40 °F.
- MIL-L-7808 shall be used for ambient temperatures below -40 °F.
- To prevent damage to seals made of silicone, Shell Oil Co., part No. 307, qualification No. 7D-1 oil (MIL-L-7808) shall not be used.

Table 1-4. Approved Oils

Manufacturer Name	Military Specification	Manufacturer Designation
American Oil and Supply Co.	MIL-L-7808	PQ Turbine Oil 8365
Humble Oil and Refining Co.	MIL-L-7808	ESSO/ENCO Turbo Oil 2389
Mobil Oil Corp.	MIL-L-7808	RM-184A/RM-201-A
American Oil and Supply Co.	MIL-L-23699	PQ Turbine Lubricant 5247/6423/6700/ 7731/887/9595
Bray Oil Co.	MIL-L-23699	Brayco 899/899-G/899-S
Castrol Oil Inc.	MIL-L-23699	Castrol 205
Chevron International Oil Co., Inc.	MIL-L-23699	Jet Engine Oil 5
Crew Chemical Corp.	MIL-L-23699	STO-21919/STO-21919A/STD 6530
W.R. Grace and Co. (Hatco Chemical Div.)	MIL-L-23699	HATCOL 3211/3611
EXXON	MIL-L-23699	Turbo Oil 2380(WS-6000)/2395 (WS-6459)/2392/2393
Mobil Oil Corp.	MIL-L-23699	RM-139A/RM-147A/Avrex S Turbo 260/ Avrex S Turbo 265
Royal Lubricants Co.	MIL-L-23699	Royco 899 (C-915)/899SC/Stauffer Jet II
Shell Oil Co., Inc.	MIL-L-23699	Aeroshell Turbine Oil 500
Shell International Petroleum Co., LTD.	MIL-L-23699	Aeroshell Turbine Oil 550
Standard Oil Co. of California	MIL-L-23699	Chevron Jet Engine Oil 5
Stauffer Chemical Co.	MIL-L-23699	Stauffer 6924/Jet II
Texaco, Inc.	MIL-L-23699	SATO 7377/7730, TL-8090
Royal Lubricants Co.	DOD-L-85734	Royco 555
EXXON	DOD-L-85734	Turbo Oil 25
Arpol Petroleum Co.	DOD-L-85734	Arpolube 85734



Hydraulic Fluid

CAUTION

- To prevent damage to equipment, mixing of hydraulic fluids is authorized only in emergency situations.
- If hydraulic fluids are mixed, fire retardant properties are inhibited.
- If hydraulic fluids are mixed, hydraulic system shall not be operated more than 5 hours. Hydraulic system shall then be drained, filters shall be changed, and system flushed and serviced with proper fluid.
- An entry in the remarks section of DA Form 2408-13-1 is required.
- Exclusive use of hydraulic fluid MIL-H-83282 is required at ambient temperatures of -25 °F (-32 °C) and above.
- Hydraulic fluid MIL-H-5606 shall be used at ambient temperatures below -25 °F (-32 °C).

Table 1-5. Approved Hydraulic Fluids

Manufacturer Name	Military Specification	Manufacturer Designation
American Oil and Supply Co.	MIL-H-5606	"PO" 4226
Bray Oil Co.	MIL-H-5606	Brayco 757B
		Brayco 756C
		Brayco 756D
Castrol Oils, Inc.	MIL-H-5606	Hyspin A
Humble Oil and Refining Co.	MIL-H-5606	Univis J41
Mobil Oil Corp.	MIL-H-5606	Aero HFB
Pennsylvania Refining Co.	MIL-H-5606	Petrofluid 5606B
		Petrofluid 4607
Royal Lubricants Co.	MIL-H-5606	Royco 756C/D
		DS-437
Shell Oil Co.	MIL-H-5606	XSL 7828
Standard Oil Co. of California	MIL-H-5606	PED 3565
		PED 3337
Texaco, Inc.	MIL-H-5606	TL-5874
Stauffer Chemical Co.	MIL-H-5606	Aero Hydroil 500
Union Carbide Chemical Co.	MIL-H-5606	YT-283
Union Carbide Corp.	MIL-H-5606	FP-221
Bray Oil Co.	MIL-H-83282	Micronic 882
Royal Lubricants Co.	MIL-H-83282	Royco 782
Hanover Processing Co.	MIL-H-83282	Hanover R-2
		HF832
Gulf Oil Chemicals Co.	MIL-H-83282	TS741
Penreco	MIL-H-83282	Petrofluid 822
Shell International Petroleum Co.	MIL-H-83282	Aeroshell Fluid 31

Table 1-5. Approved Hydraulic Fluids (Cont)

Manufacturer Name	Military Specification	Manufacturer Designation
American Oil and Supply Co.	MIL-H-83282	PQ 3883
		PQ 4219
		PQ 4268
		PQ 4362C
		PQ4401
Nyco S.A.	MIL-H-83282	Hydraunycoil FH2
Emery Industries, Inc.	MIL-H-83282	Emery 2946
Hatco Chemical Co.	MIL-H-83282	Hatcol 4283

1-4-1. REFUELING (POWER OFF OR RAPID) — CLOSED CIRCUIT

This task covers: Refueling (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Material:
Turbine Engine Fuel (D110)

Personnel Required:
67S Scout Helicopter Repairer
Fireguard

References:
FM 10-67-1

Equipment Condition:
Helicopter Safed (Task 1-6-7)

WARNING

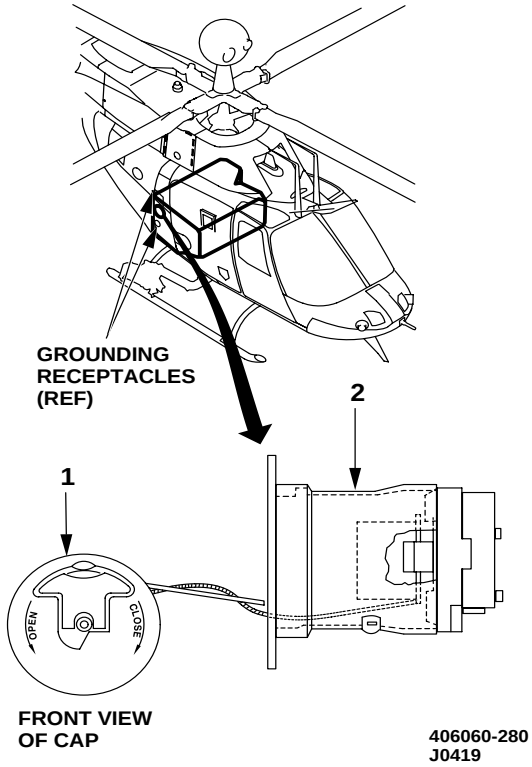
To prevent injury to personnel, when rapid (hot) refueling is necessary (prescribed in FM 10-67-1), proper grounding of helicopter is required. It is recommended that the helicopter be in a revetment-type shelter or separated from fuel storage by a firewall.

NOTE

Helicopter may be rapid (hot) refueled with engine running, electrical power on, radios on, weapons systems on with safety covers/pins/guards/switches in SAFE position, and computer systems operating.

1. Connect grounding cables (FM 10-67-1).
2. Post fireguard.

Jet Fuel



CAUTION

Do not allow filler cap to strike side of helicopter, as voids in honeycomb panel can occur.

3. Remove filler cap (1) from receiver (2).

GO TO NEXT PAGE

WARNING

To prevent overfilling or backsplash with possible injury to personnel, servicing vehicle pressure must not exceed 125 psi while refueling.

CAUTION

To prevent damaging the refueling receptacle, a closed circuit refueling nozzle shall be used for refueling operations. A gravity refueling nozzle shall not be used.

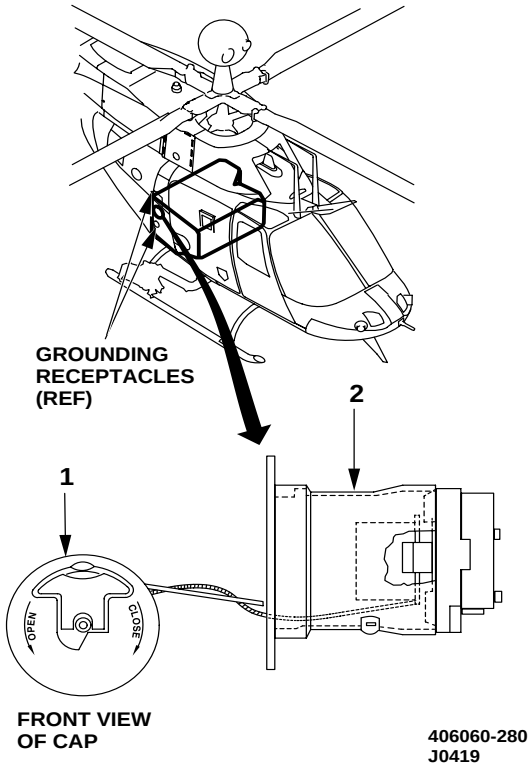
4. Insert fueling nozzle into receiver (2), and actuate automatic nozzle lever to ON or FLOW position. Pin at base of nozzle will momentarily indicate when fuel flow stops.

Jet Fuel

5. Fuel flow will automatically shut off when normal fuel level is reached. Just prior to normal shutoff, fuel flow may cycle several times as fuel level is reached. Gauge on servicing unit will indicate when flow is stopped.

6. When fuel flow has stopped, actuate lever on nozzle to OFF, disconnect nozzle from receiver (2) and replace filler cap (1).

7. Disconnect grounding cables (FM 10-67-1).



END OF TASK

1-4-2. REFUELING (POWER OFF OR RAPID) — GRAVITY OR OPEN PORT

This task covers: Refueling (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Fuel Truck

Material:
Turbine Engine Fuel (D110)

Personnel Required:
67S Scout Helicopter Repairer
Fireguard

References:
FM 10-67-1

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

WARNING

To prevent injury to personnel, all precautions in FM 10-67-1 shall be observed.

NOTE

Helicopter may be rapid (hot) refueled with engine running, electrical power on, radios on, weapons systems on with safety covers/pins/guards/switches in SAFE position, and computer systems operating.

1. Connect grounding cables (FM 10-67-1).

2. Post fireguard.

Jet Fuel

CAUTION

Do not allow filler cap to strike side of helicopter, as voids in honeycomb panel can occur.

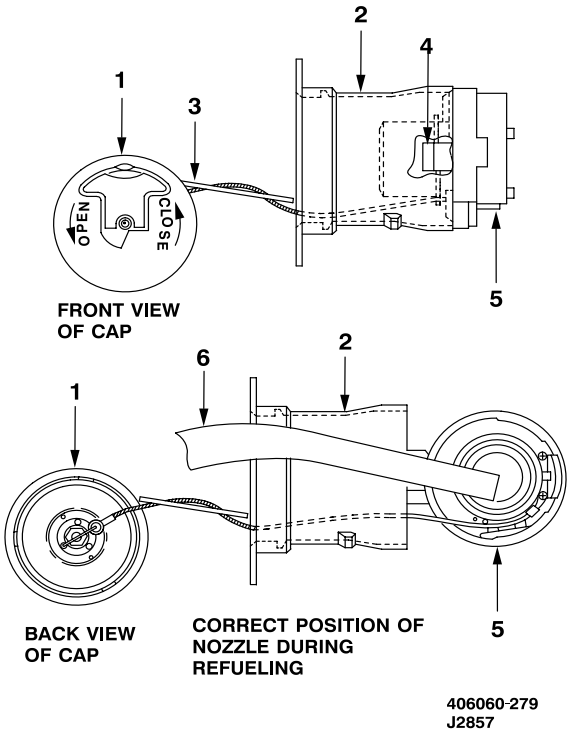
3. Remove filler cap (1) from fuel receiver (2). Insert latch tool (3) between fuel receiver (2) and latch (4) to open module (5).

WARNING

To prevent overfilling or backsplash with possible injury to personnel, servicing vehicle pressure shall not be above 125 psi while refueling.

4. Correctly position nozzle (6) into fuel receiver (2).

5. Fill to specified level.



6. Remove nozzle (6).

7. Pull filler cap (1) until module (5) is fastened to latch (4).

8. Connect filler cap (1) to fuel receiver (2).

9. Disconnect grounding cables (FM 10-67-1).

END OF TASK

1-4-3. DEFUELING HELICOPTER (USING DEFUELING VALVE)

This task covers: Defueling (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
1 3/4-Inch Crowfoot (B32)
Suitable Fuel Containers
Portable Fire Extinguisher

Material:
Lockwire (D132)
Nipple MS24393D12 (Work Aid)
Hose Assembly MIL-H-8794 (Work Aid)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Electrical Power Removed (Tasks 1-6-5 and 1-6-6)

DEFUEL

WARNING

Ensure helicopter is located in an approved defueling area to preclude fire hazard and environmental contamination.

CAUTION

To prevent damage to equipment, if helicopter is being defueled due to an accident or incident or if fuel is suspected of being contaminated, the fuel shall be tested before disposal. Drained fuel shall not be returned to storage area unless it has passed through a filter or separator.

1. Ground helicopter.
2. Ground fuel container to ground stake.
3. Ground helicopter to fuel container.
4. Position fireguard with portable fire extinguisher close to defueling operation.

GO TO NEXT PAGE

5. Cut lockwire to plug (1) in defueling valve (2).

6. Remove plug (1) and discard packing (3).

7. Install MS24393D12 nipple or equivalent (4) on MIL-H-8794 flexible hose (5).

Jet Fuel

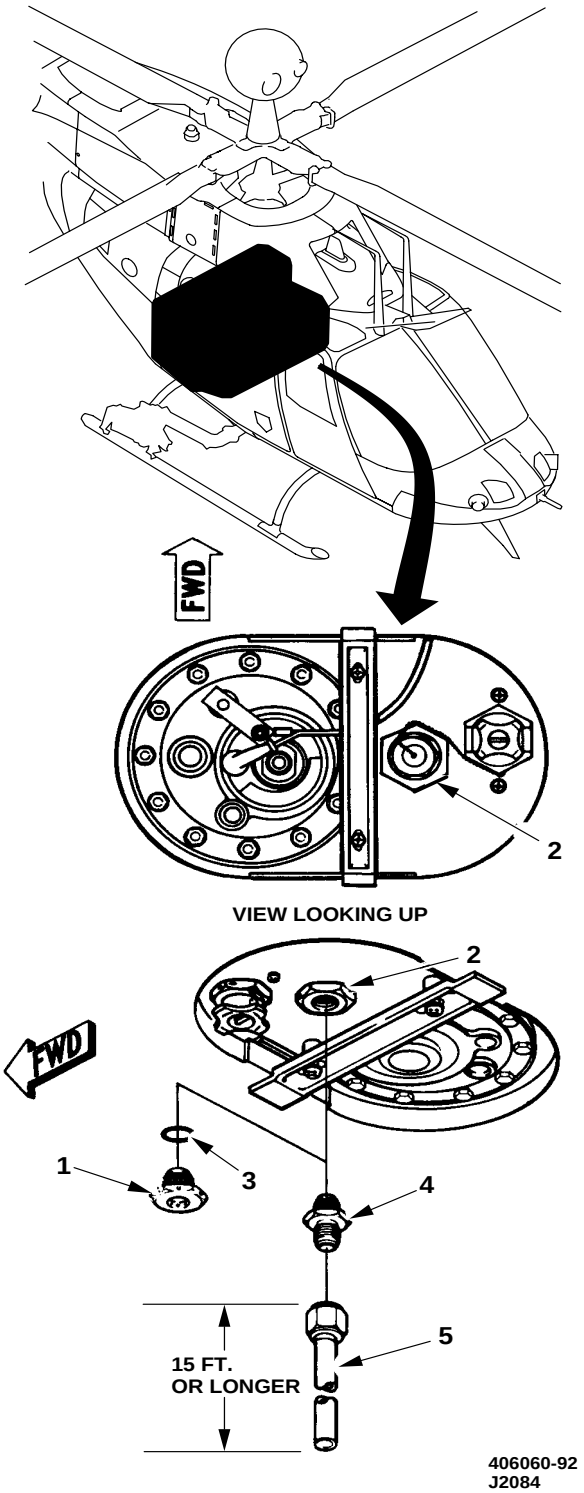
8. Place free end of hose (5) in fuel container.

9. Open defueling valve (2) by installing nipple (4) in valve (2).

10. After defueling, remove nipple (4) from defueling valve (2).

11. Install plug (1) with packing (3). Secure plug (1) with lockwire (D132).

INSPECT



END OF TASK

1-4-4. DEFUELING HELICOPTER (USING DEFUELING TRUCK)

This task covers: Defueling (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Defueling Truck

Personnel Required:
67S Scout Helicopter Repairer

References:
FM 10-67-1

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Electrical Power Removed (Tasks 1-6-5 and 1-6-6)

WARNING

Ensure helicopter is located in an approved defueling area to preclude fire hazard and environmental contamination.

CAUTION

To prevent contamination of fuel supply, if helicopter is being defueled due to an accident or incident or if its fuel is suspected of being contaminated, the fuel shall be tested before disposing. Drained fuel shall not be returned to storage area unless it has passed through a filter or separator.

1. Ground helicopter and defueling truck to ground stake (FM 10-67-1).

2. Attach defueling hose ground wire to helicopter (FM 10-67-1).

GO TO NEXT PAGE

Jet Fuel

CAUTION

Do not allow filler cap to strike side of helicopter, as voids in honeycomb panel can occur.

3. Remove filler cap (1) from fuel receiver (2). Insert latch tool (3) between fuel receiver (2) and latch (4) to open module (5).

WARNING

To prevent fuel contamination and possible engine failure, defueling hose shall be properly cleaned before insertion into fuel cell.

CAUTION

Damage to inside surface of fuel cell may occur if hose is forced. Very little force is required when inserting defueling hose into fuel cell.

4. Correctly insert defueling hose (6) into fuel cell to touch bottom of cell.

5. Start pumping fuel from helicopter.

6. As fuel flow stops, shut down pump.

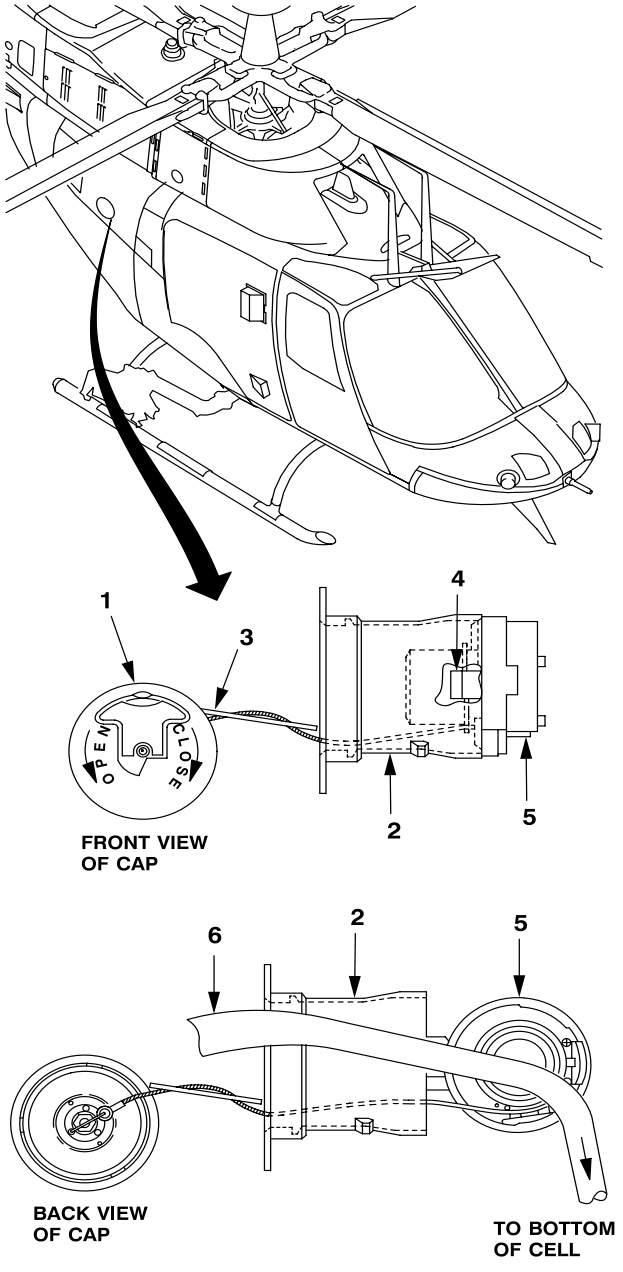
7. Remove defueling hose (6) from helicopter fuel cell.

8. To complete defueling, drain remaining fuel into suitable container (Task 1-4-3).

9. Pull filler cap (1) until module (5) is fastened to latch (4).

10. Connect filler cap (1) to fuel receiver (2).

11. Leave helicopter grounded unless it is to be moved.



CORRECT POSITION OF DEFUELING HOSE DURING DEFUELING

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END OF TASK

1-4-5. ENGINE OIL SYSTEM — DRAINING

This task covers: Draining (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic 12 Qt. Pail (or suitable substitute) (B101)
Drain Hose (B74)
Torque Wrench (B237)

Material:
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1520-248-T

Equipment Condition:
Aft Fairing Assembly Removed (Task 2-2-55)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

1-4-5. ENGINE OIL SYSTEM — DRAINING (CONT)

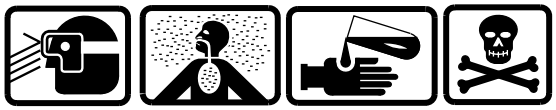
DRAIN

1. Open oil tank filler cap (1).

2. Disconnect drain line coupling nut (2) from drain valve (3) and move drain line (4) aside.

3. Slide the non-fitting end of drain hose (B74) over the lower nipple of drain valve (3) and secure with lockwire (D132).

4. Place suitable container (B101) beneath fitting end of drain hose (B74).



Lubricating Oil

5. Turn drain valve (3) 90 degrees counterclockwise and allow oil to drain into container.

6. When oil is completely drained, turn drain valve (3) 90 degrees clockwise to the closed position.

7. Remove lockwire and drain hose (B74) from lower nipple of drain valve (3).

8. Reposition drain line (4) and connect drain line coupling nut (2) to lower nipple of drain valve (3).

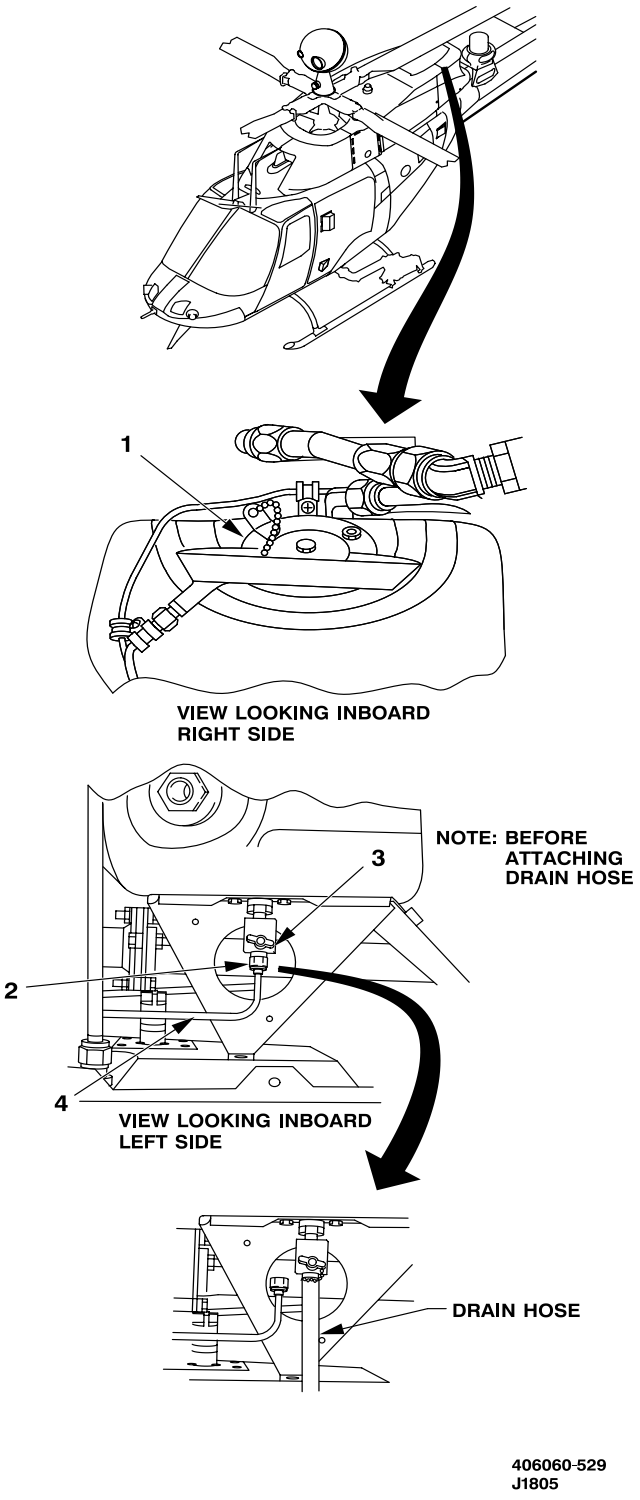
9. Torque coupling nut (2) **40 TO 65 INCH-POUNDS**.

INSPECT

FOLLOW-ON MAINTENANCE

Perform oil cooler bypass valve check (TM 1-1520-248-T).

Replace external scavenge oil filter element (Task 4-4-16).



END OF TASK

1-4-6. ENGINE OIL SYSTEM — SERVICING

This task covers: Servicing (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic 12 Qt. Pail (or suitable substitute) (B101)
Crowfoot Wrench 1 1/4 In. (B30)
Torque Wrench (B242)

Material:
Lubricating Oil (D140 or D233)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
Pilot

References:
TM 1-1520-248-10/CL

Equipment Condition:
Aft Fairing Assembly Removed (Task 2-2-55)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

1-4-6. ENGINE OIL SYSTEM — SERVICING (CONT)

SERVICE

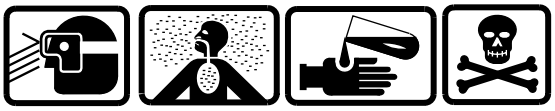
NOTE

- Oil level should be checked within 15 minutes of engine shutdown. If 15 minute limit has been exceeded, starter switch shall be engaged for 30 seconds. By motoring the starter, engine oil which has accumulated in the accessory gearbox will be pumped back into the oil tank by the scavenge oil pump. If oil level appears low, system shall be serviced.
- Normal capacity of oil tank is 11.2 pints.

1. Check oil level by observing sight glass (1) on oil tank (2).

NOTE

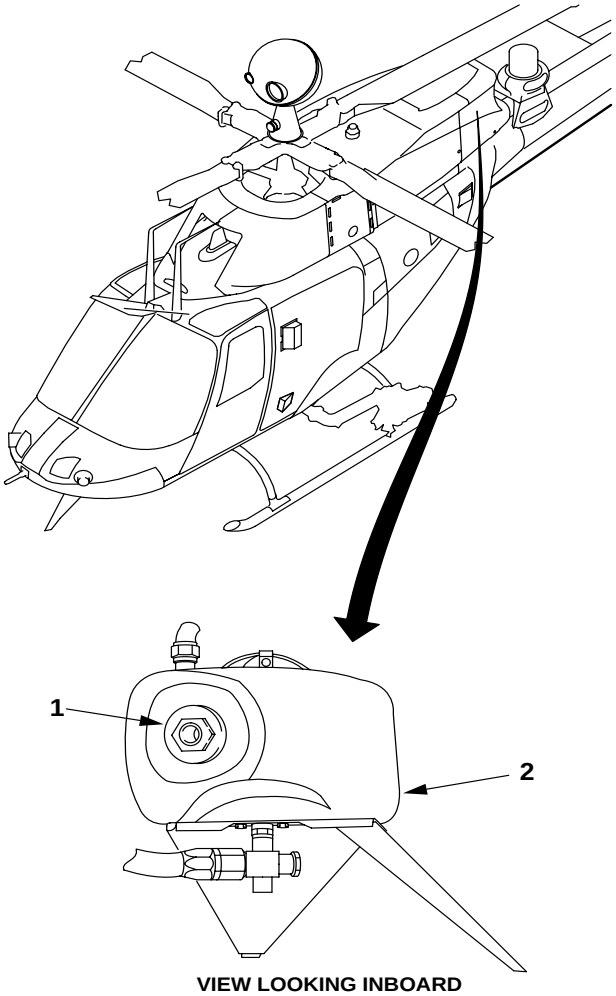
Oil is required when oil level falls below the top of sight glass (1).



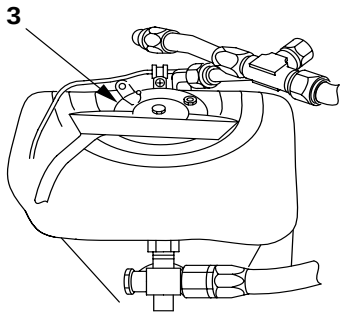
Lubricating Oil

2. If oil is required, remove filler cap (3) and service with lubricating oil (D140 or D233).

3. Install filler cap (3).



VIEW LOOKING INBOARD LEFT SIDE



VIEW LOOKING INBOARD RIGHT SIDE

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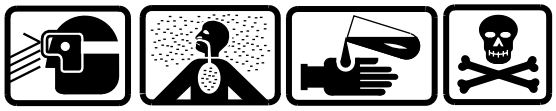


Lubricating Oil

NOTE

If engine has been drained (Task 1-4-5) the following steps will prevent air from being trapped in the system.

4. Disconnect lines (4 and 5) from clamps (6).

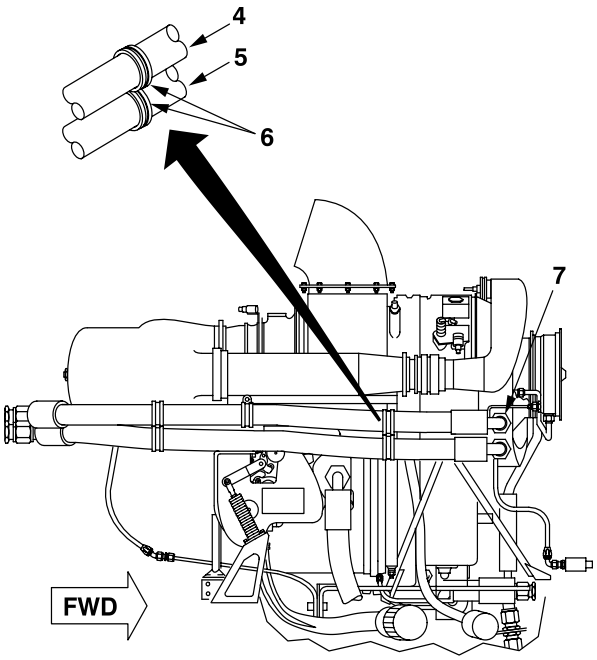
5. Loosen oil inlet port elbow (7) and place suitable container (B101) to catch possible spillage.

6. Lower lines (4 and 5) and allow oil from engine oil tank to enter lines.

7. When oil seeps from inlet port elbow (7), reconnect elbow. Torque elbow **492 TO 840 INCH-POUNDS**.

8. Raise lines (4 and 5) and install clamps (6).

9. Fill oil tank completely and using wiping rags (D164), clean oil from engine deck where seepage occurred.



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1-4-6. ENGINE OIL SYSTEM — SERVICING (CONT)

10. Open IGN and FUEL BOOST circuit breakers (8 and 9).

11. Fuel shutoff valve (10) closed (aft).

12. Place BATT 1 and 2 switches (11) on (in BATT position).

13. Throttle (12) closed.

WARNING

To prevent injury to personnel, throttle shall be off and fuel boost and ignition system circuit breakers shall be open before engaging starter.

CAUTION

- To prevent damage to helicopter, throttle must be off and fuel boost and ignition system circuit breakers shall be open before engaging starter.
- To prevent damage to starter, 30 second limit engagement of starter switch shall not be exceeded.

14. Pilot position START switch (13) to ON and motor engine for 30 seconds.

15. Place BATT 1 and 2 (11) switches to OFF (center position).

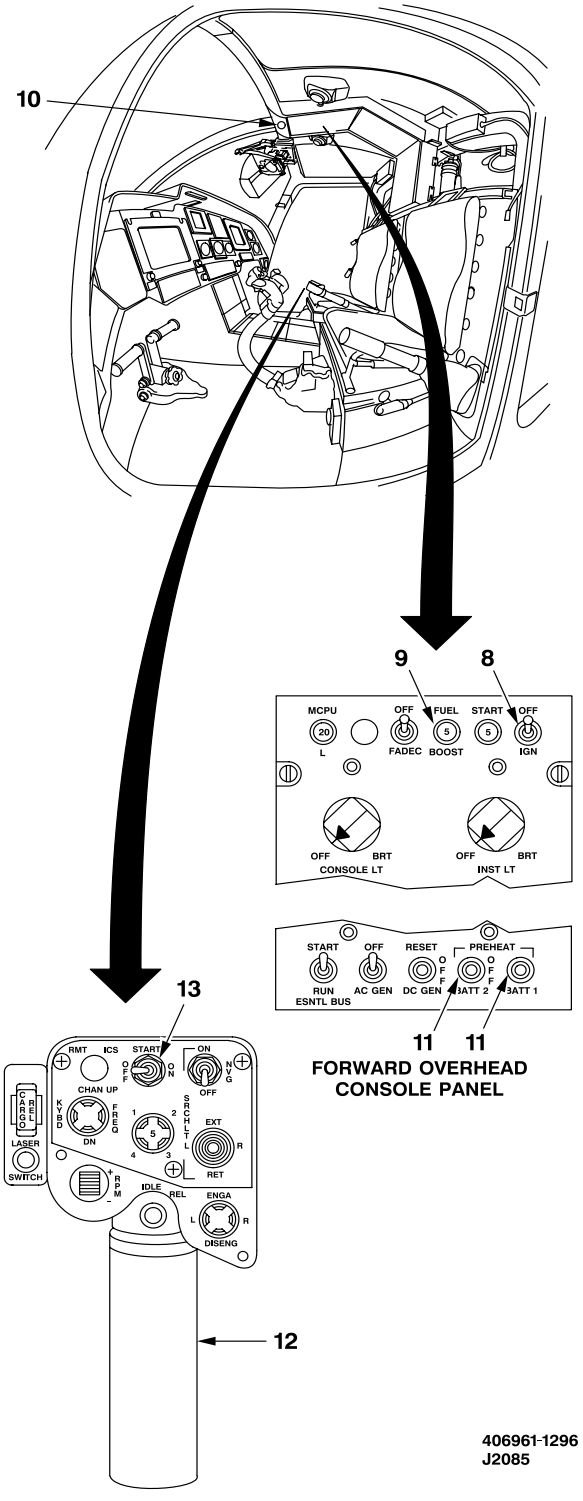
16. Repeat steps 1 through 3.

INSPECT

FOLLOW-ON MAINTENANCE

Install aft fairing assembly (Task 2-2-55).

Pilot perform MOC (TM 1-1520-248-10/CL).



FORWARD OVERHEAD CONSOLE PANEL

END OF TASK

1-4-7. TRANSMISSION/FREEWHEELING UNIT — DRAINING

This task covers: Draining (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (B162)
Drain Hose (B72)
Drain Hose (B73)
Plastic 12 Qt. Pail (or suitable substitute) (B101)

Material:
Lubricating Oil (D139 or D140)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Forward Fairing Assembly Removed (Task 2-2-47)
Helicopter Safed (Task 1-6-7)

DRAIN TRANSMISSION OIL

NOTE

If transmission or freewheeling unit is being drained for serviceability check, suspicion of metal contamination, or completion of 300 hour/12 month transmission oil system service, lubricating oil shall be drained into a clean suitable container (B101) and saved for inspection.

1. Position suitable container (B101) to receive drained oil.

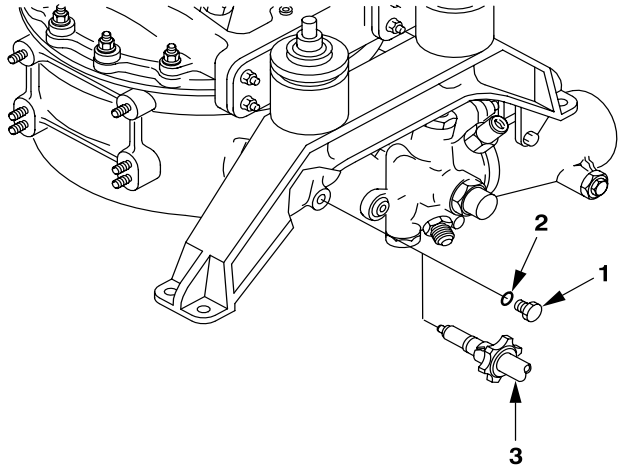
Lubricating Oil

2. Remove drain fitting (1) and packing (2). Discard packing.

3. Insert drain hose (B72) (3) and allow transmission oil to drain into container.

4. Lubricate new packing (2) with same type lubricating oil (D139 or D140) as in transmission.

5. Install drain fitting (1) with new packing (2).



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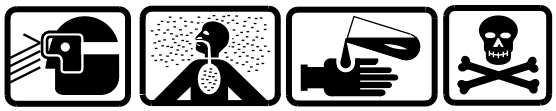
1-4-7. TRANSMISSION/FREEWHEELING UNIT — DRAINING (CONT)

DRAIN FREEWHEELING UNIT

6. Disconnect electrical connector (4) from chip detector (5).

7. Remove chip detector (5) from chip detector housing (6).



Lubricating Oil

8. Insert drain hose (B73) (7) into chip detector housing (6) and drain oil into suitable container (B101).

9. When oil is drained from freewheeling unit and main transmission remove drain hose (B73) (7).

10. Install chip detector (5) in chip detector housing (6).

11. Connect electrical connector (4) to chip detector (5).

NOTE

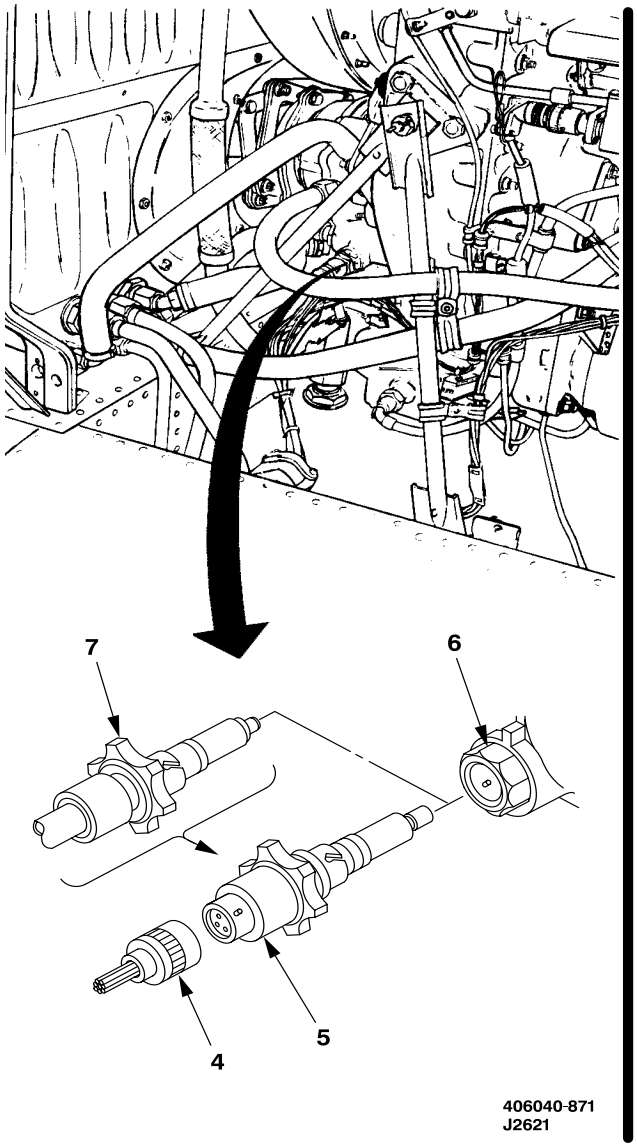
If 300 hour/12 month transmission oil system service is being accomplished, complete the following steps.

12. Identify foreign material in drive train system (Task 6-1-4).

13. Remove, clean, inspect, and install upper transmission chip detector (Task 6-3-8).

14. Remove, clean, inspect, and install lower transmission chip detector (Task 6-3-11).

15. Replace/clean transmission oil filters (Task 6-8-3).



END OF TASK

1-4-8. TRANSMISSION/FREEWHEELING UNIT — SERVICING

This task covers: Servicing (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (B162)

Material:
Lubricating Oil (D139 or D140)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Forward Fairing Assembly Removed (Task 2-2-47)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

1-4-8. TRANSMISSION/FREEWHEELING UNIT — SERVICING (CONT)

SERVICE

CAUTION

- If lubricating oils (D139 and D140) are mixed, transmission and freewheeling assembly shall be drained, filter shall be changed, and system shall be serviced with correct oil within 5 hours of operation.
- Exclusive use of oil DOD-L-85734 (D139) is required at ambient temperatures above -40 °F.
- MIL-L-7808 (D140) shall be used for ambient temperatures below -40 °F.

NOTE

When checking oil level, helicopter shall be on a relatively level area with engine shut down.

To ensure an accurate reading in the oil level sight gauge, the main rotor blades should be manually rotated several times to circulate oil through freewheeling unit and transmission oil filters.

When oil is visible in the yellow area of the sight gauge (1) service is not required.

1. Check oil level by observing sight gauge (1) on transmission (2) housing.

Lubricating Oil

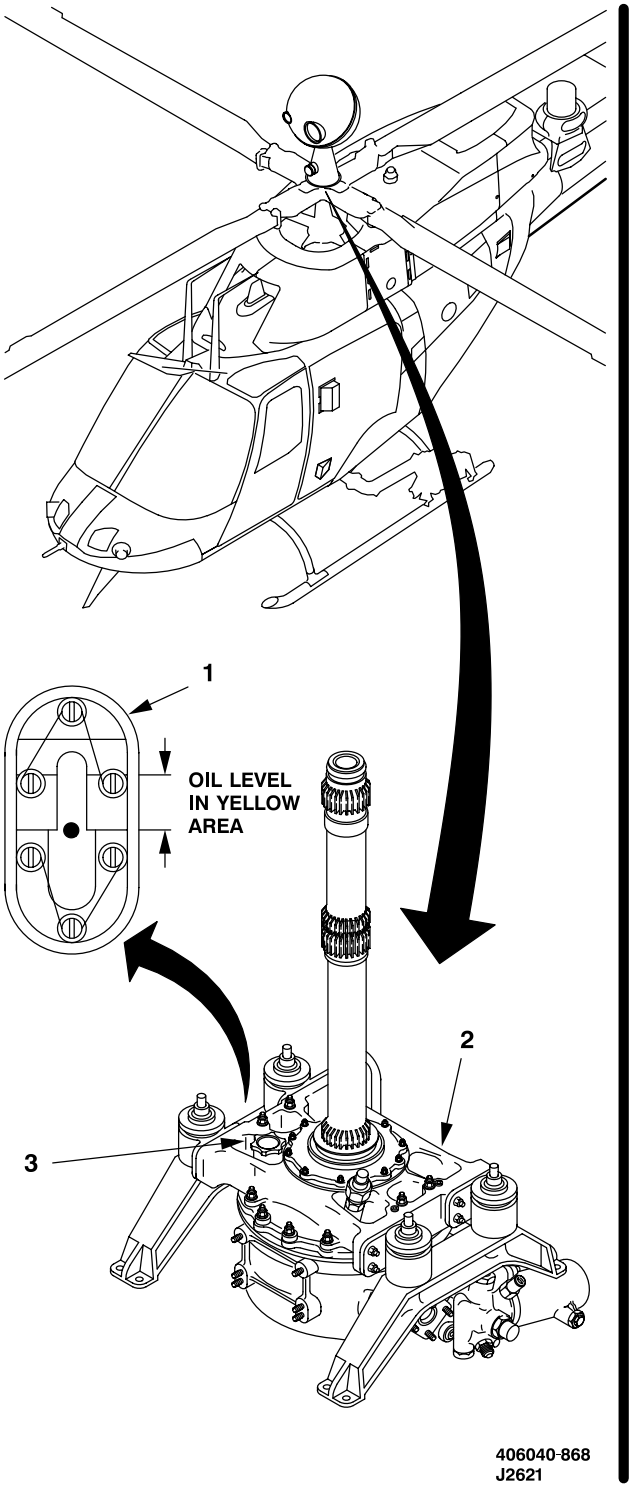
2. Remove filler cap (3) and service with lubricating oil (D139 or D140) to center of yellow area of sight gauge (1).

3. Install filler cap (3).

INSPECT

FOLLOW-ON MAINTENANCE

Install forward fairing assembly (Task 2-2-47).



END OF TASK

1-4-9. TAIL ROTOR GEARBOX — DRAINING/SERVICING

This task covers: Draining/Servicing (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Drain Hose (B73)
Plastic 12 Qt. Pail (or suitable substitute) (B101)

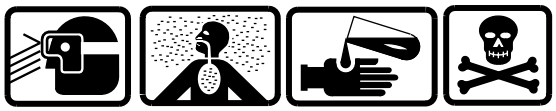
Material:
Lubricating Oil (D139 or D140)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

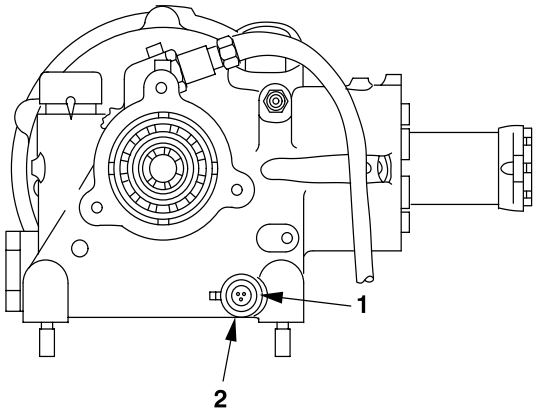
DRAIN

1. Remove chip detector (1).



Lubricating Oil

2. Insert drain hose (B73) into chip detector housing (2) and allow oil to drain into suitable container (B101).



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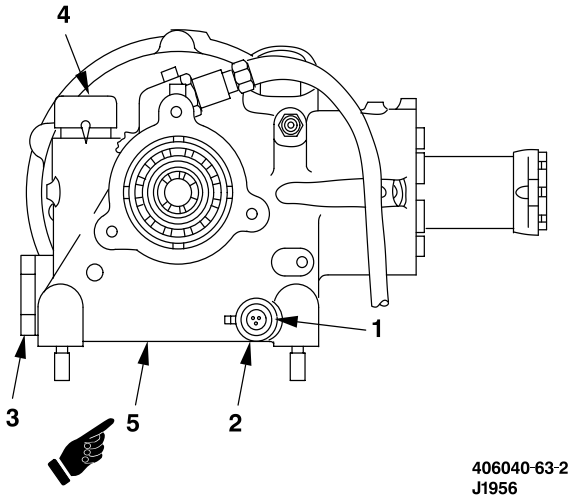
1-4-9. TAIL ROTOR GEARBOX — DRAINING/SERVICING (CONT)

SERVICE

3. Reinstall chip detector (1) in chip detector housing (2).



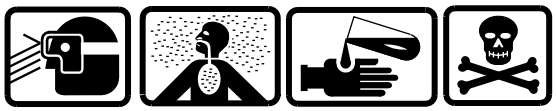
CAUTION

To prevent damage to tail rotor gearbox, lubricating oils (D139 and D140) should not be mixed. If oils are mixed, tail rotor gearbox shall be drained and service with correct oil. Operation of tail rotor gearbox with mixed oil is limited to 5 hours or less.

NOTE

When properly serviced, oil level will be even with center of sight gauge.

4. Oil is required if oil level is 1/8 inch below center level of sight gauge (3).



Lubricating Oil

CAUTION

To prevent damage to equipment, exclusive use of oil DOD-L-85734 (D139) is required at ambient temperatures above - 40 °F.

NOTE

Excessive oil leakage may occur if gearbox is overfilled. When servicing, oil level shall be allowed to stabilize for correct indication on sight gauge. Normal oil capacity is 6 ounces.

5. Remove filler cap (4) and service gearbox (5) as required using lubricating oil (D139 or D140).

6. Install filler cap (4).

INSPECT

END OF TASK

1-4-10. HYDRAULIC RESERVOIR — DRAINING/SERVICING

This task covers: Servicing (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic 12 Qt. Pail (or suitable substitute) (B101)
Torque Wrench (B238)

Material:
Hydraulic Fluid (D106 or D107)
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TB 55-1500-334-25

Equipment Condition:
Helicopter Safed (Task 1-6-7)

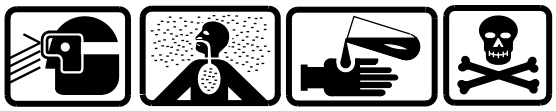
GO TO NEXT PAGE

1-4-10. HYDRAULIC RESERVOIR — DRAINING/SERVICING (CONT)

DRAIN

1. Place suitable container (B101) under reservoir (1).

2. Cut lockwire securing drain plug (2) to reservoir (1).



Hydraulic Fluid

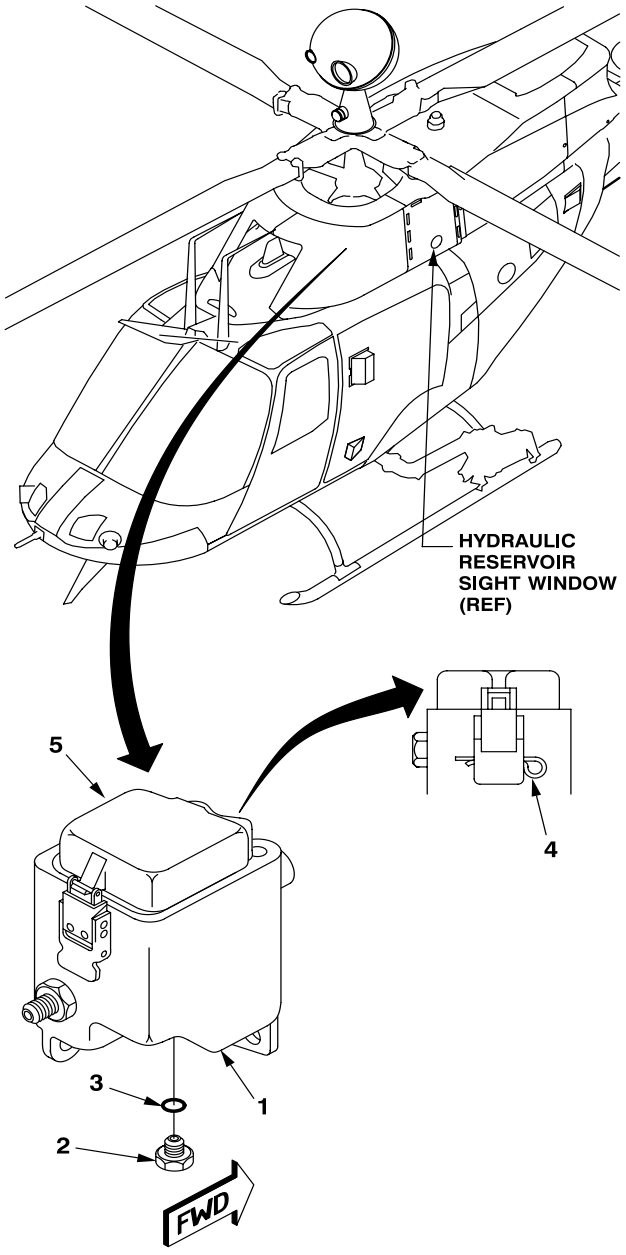
3. Remove drain plug (2) and packing (3). Discard packing.

4. Remove safety pin (4).

5. Open filler cap (5) and inspect reservoir (1) (Task 7-7-8) before refilling.

6. Install packing (3) and drain plug (2). Secure with lockwire (D132). Torque drain plug (2) **95 TO 105 INCH-POUNDS**.

INSPECT



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CAUTION

To prevent damage to hydraulic system, MIL-H-5606 and MIL-H-83282 hydraulic oil should not be mixed. When changing from MIL-H-5606 to MIL-H-83282 hydraulic oil, no more than 2 percent of MIL-H-5606 may be present in system. Flash point will drop below 400 °F (204 °C) if fluids are mixed.

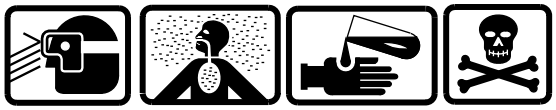
SERVICE

NOTE

- When fluid level falls below top of sight gauge, hydraulic system requires servicing.
- When changing oil refer to TB 55-1500-334-25.

7. Check fluid level by observing fluid in sight gauge (6).

8. Remove safety pin (4) and open filler cap (5) as required.

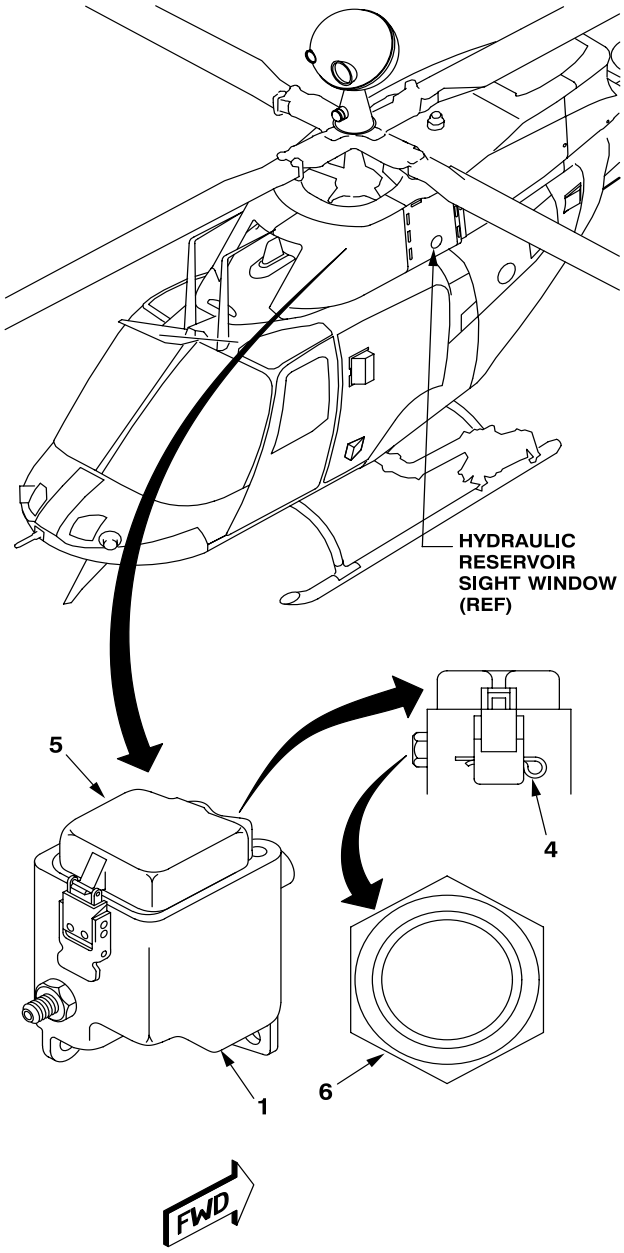


Hydraulic Fluid

9. Fill reservoir (1) to overflow lip using hydraulic fluid (D106 or D107).

10. Close cap (5) and install safety pin (4).

INSPECT



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J1956

END OF TASK

1-4-11. HELICOPTER CLEANING

This task covers: Cleaning (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Pneumatic Vacuum Cleaner (B17)
General Mechanic Tool Kit (B178)

Material:
Aliphatic Naphtha (D141)
Toilet Soap (D193)
Cheesecloth (D56)
Drycleaning Solvent (D199)
Cleaning Compound Soap (D192)
Flannel Cloth (D68)
Corrosion Preventive Compound (D84)
Dishwashing Compound (D93)
Polishing Compound (D154)
Synthetic Sponge (D204)
Wax (D227)

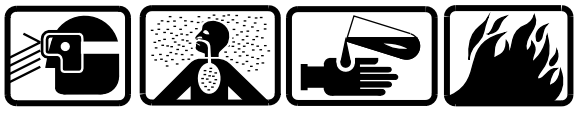
Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1500-344-23
TM 11-5865-200-12

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Forward Fairing Assembly Removed as Required (Task 2-2-47)
Aft Fairing Assembly Removed as Required (Task 2-2-55)
Aft Fairing Extension Removed as Required (Task 2-2-56)

CLEAN INTERIOR

1. Clean upholstery using mild soap (D93) and water.



Drycleaning Solvent

2. Remove oil or grease spots using drycleaning solvent (D199).

3. Wipe dry with clean flannel cloth (D68).

4. Clean interior of helicopter thoroughly.

CLEAN EXTERIOR

CAUTION

- To prevent damage to finish, plastics, or seals, steam or high pressure water hose should not be used to clean helicopter.
- To prevent failure of electrical and avionics systems, care must be taken to ensure all disconnected electrical connections are covered with appropriate protection.

5. If cleaning of pylon area is required, remove forward fairing assembly (Task 2-2-47), aft fairing assembly (Task 2-2-55), and aft fairing extension (Task 2-2-56), and open access panels as required.

6. Use low pressure water no warmer than 150 °F (65 °C), observing following conditions:

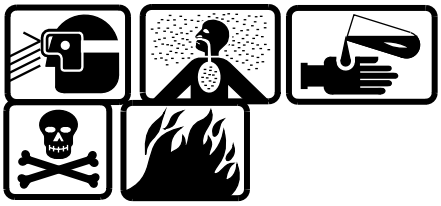
a. Ensure that protective cap is properly installed after IFF antenna connector is disconnected.

GO TO NEXT PAGE

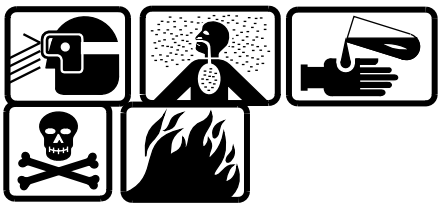
CAUTION

To prevent damage to helicopter components, low pressure water from spray head shall not be allowed to damage edges of bonded panels, electrical components, bearings, seals, oil cooler core and air ducts, pitot tube, and static ports.

b. Spray head must be used (TM 1-1500-344-23).



Naphtha/Naphthalene, TT-N-97



Corrosion Preventive Compound

CAUTION

To prevent intrusion of moisture and consequent damage to or failure of equipment, electrical connectors opened to facilitate helicopter cleaning shall be properly and completely reconnected.

c. Contaminated electrical or avionics connectors may be cleaned using aliphatic naphtha (D141), followed by application of corrosion preventive compound (D84).

CAUTION

To prevent discoloration, streaking, and other damage by accidental splashing of cleaning solution on Plexiglass, area shall be thoroughly rinsed with clean water before surface dries.

CLEAN TRANSPARENCIES

7. Flush all transparent plastics with large quantities of dishwashing compound (D93) and water.

8. If transparency is contaminated with mud or dirt, gently free with fingers. Do not use sponges or coarse cloths. Rinse area with low pressure water while removing mud.

GO TO NEXT PAGE

9. If transparency is not contaminated with mud or dirt, clean using dishwashing compound (D93) and water with clean flannel cloth (D68) or synthetic sponge (D204).

10. Rinse area with low pressure water.

11. Dry with clean, damp, synthetic sponge (D204) or clean flannel cloth (D68).

12. Remove grease or oil with soap (D193) and water, then rinse with clear water.

13. Allow surface to drip dry.

NOTE

To aid in reducing scratches, a light coat of wax (D227) may be applied to door windows and lower pilot windows only.

14. Gently pat windshield with clean, damp, synthetic sponge (D204) to remove any built-up electrostatic charge.

CLEAN ACRYLIC

Cleaning Compound

CAUTION

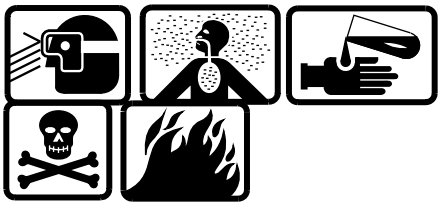
To prevent damage to acrylics, excessive scrubbing should not be used.

15. Clean acrylic panels with cleaning compound (D192) and large quantities of water (TM 1-1500-344-23).

CLEAN ROTOR BLADES

16. Wash rotor blades with mild soap (D93) and water.

17. Dry surface with cheesecloth (D56).



Plastic Polish Compound

18. Remove or reduce minor scratches by applying polishing compound (D154) to affected surfaces.

CLEAN COUNTERMEASURES SET AN/ALQ-144 INFRARED (IR) JAMMER TRANSMITTER

19. Clean countermeasures set AN/ALQ-144 IR jammer transmitter housing and window assembly. Refer to TM 11-5865-200-12.

FOLLOW-ON MAINTENANCE

Install forward fairing assembly as required (Task 2-2-47).

Install aft fairing assembly as required (Task 2-2-55).

Install aft fairing extension as required (Task 2-2-56).

END OF TASK

1-4-12. MAIN ROTOR BLADES — DE-ICING

This task covers: De-icing (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
5 Gallon Bucket (B11)
Goggles (B55)
Maintenance Stand (B162)
Pneumatic Cleaning Gun (B63)
Respirator (B116)

Material:
De-icing Fluid (D105)
Rubber Gloves (D111)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

1. Place maintenance stand (B162) in position near main rotor blade.

CAUTION

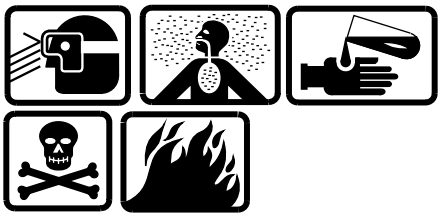
To prevent damage to main rotor blades, downward pressure on main rotor blade shall be avoided.

NOTE

A rattle-type noise may be observed in the blade tip area when installed blades are rapped or shaken. This noise is normal and should not be cause for concern. The noise originates from movement of balance weights installed in the leading and trailing edge weight pockets. These weights are loose-fit over three internal bosses on the pocket covers. The weights are held in place by centrifugal force and cannot rattle during rotor operation.

2. Lift main rotor blade and shake to break ice from blade.

3. Repeat steps 1. and 2. for three remaining main rotor blades.



Anti-icing/Deicing Fluid, MIL-A-8243

4. Spray each main rotor blade with liberal amount of de-icing fluid (D105).

CAUTION

To prevent surface damage to main rotor blades, ice shall not be removed by scraping.

5. When ice is observed melting, use wiping rags (D164) to remove residue from main rotor blades.

INSPECT

6. Remove maintenance stand and properly store de-icing equipment, including the transmission, engine, and tail rotor gearbox.

END OF TASK

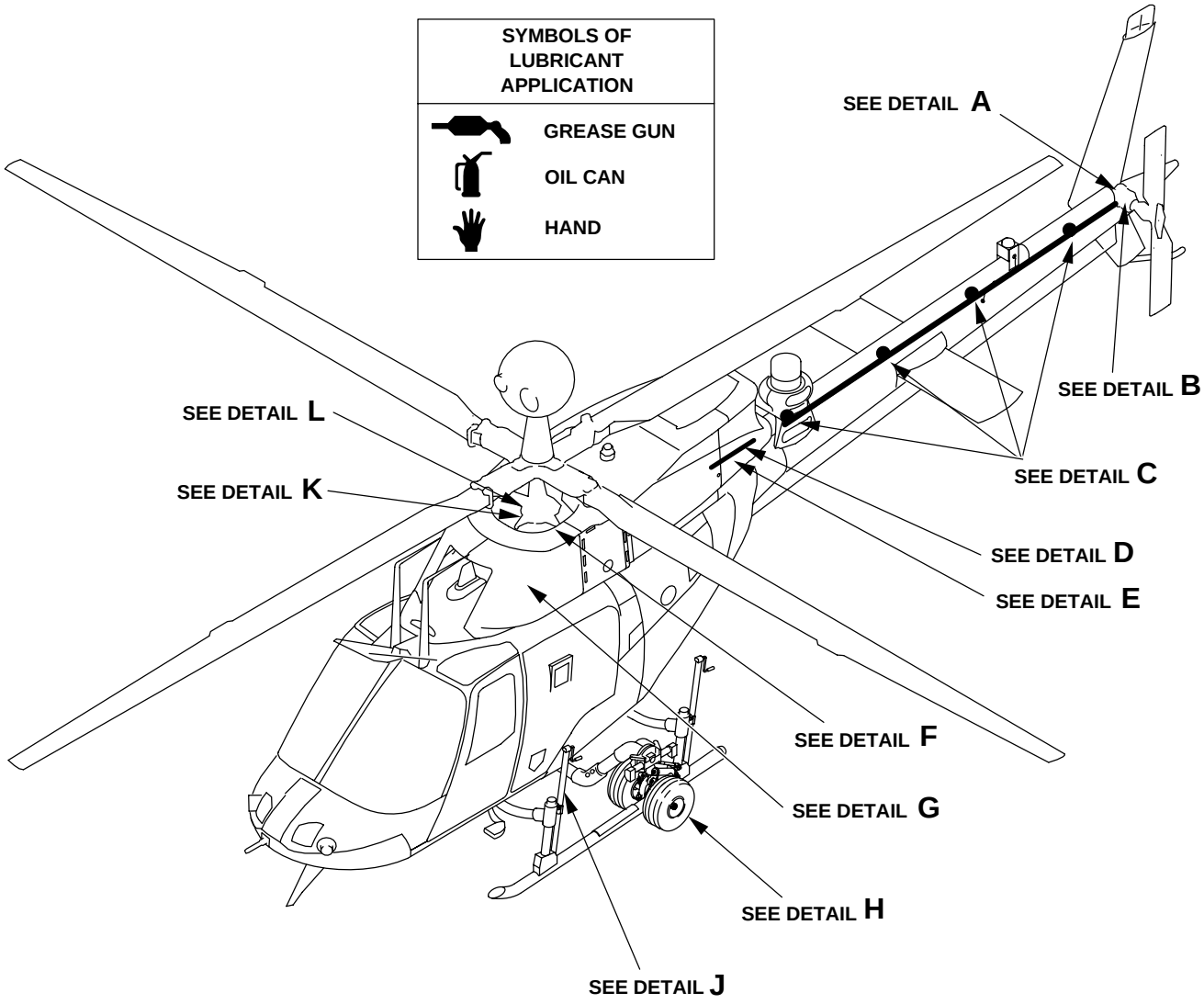
Section V. LUBRICATION

1-44. LUBRICATION

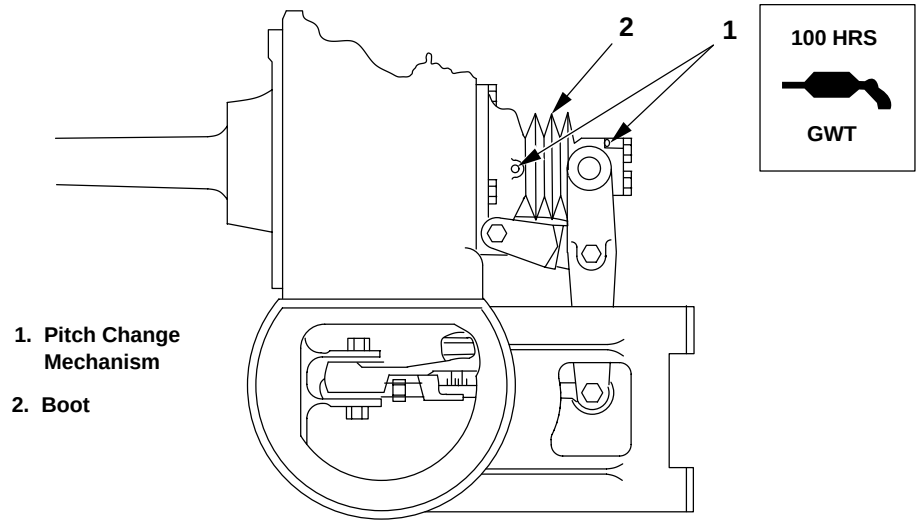
The lubrication chart consists of a diagram of the helicopter with detail views. The chart shows all parts requiring periodic lubrication applied by grease gun, oil can, or by hand, including the engine, transmission, and tail rotor gearbox, which are lubricated by oil in accordance with servicing instructions (Section IV). The lubrication chart uses symbols and abbreviations to indicate the required lubricant, method of application, and time interval for lubrication of each part listed. A key on the chart defines the meanings of symbols and abbreviations.

LUBRICANTS

SYMBOL	SPECIFICATION	MATERIAL
GWT	MIL-G-81322	GREASE, AIRCRAFT, GENERAL PURPOSE WIDE TEMPERATURE RANGE
GWTS	MIL-G-81322	MOBIL 28 OR AEROSHELL 22
OHA	MIL-H-5606/ MIL-H-83282	HYDRAULIC FLUID
GHD	MIL-G-21164	GREASE, AMSOL GHD (MOLY FORTIFIED) SYNTHETIC
OIL 1	MIL-L-7808/ DOD-L-85734	OIL, LUBRICATING
OIL 2	MIL-L-7808/ MIL-L-23699	OIL, LUBRICATING



Lubrication Points (Sheet 1 of 9)



1. Pitch Change Mechanism
2. Boot

DETAIL **A**

TAIL ROTOR PITCH CONTROL LUBRICATION FITTINGS

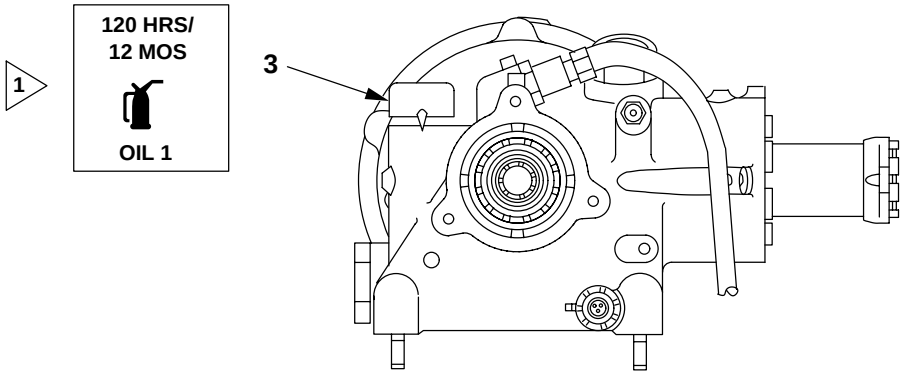
Lubricate two pitch control lubrication fittings (1) as follows:

a. **Remove lockwire on outboard end of boot (2).**

b. **Loosen boot (2) on outboard end to prevent pumping grease into tail rotor gearbox.**

c. **Lubricate two fittings (1) until grease just purges past seal. Do not overlubricate. Clean boot, inside and outside, of all grease after purging. Ensure pitch change tube breather hole is clear and free of grease, dirt, or other contaminants.**

d. **Secure boot (2) with lockwire (D132).**



3. Tail Rotor Gearbox Oil Filler Cap

DETAIL **B**

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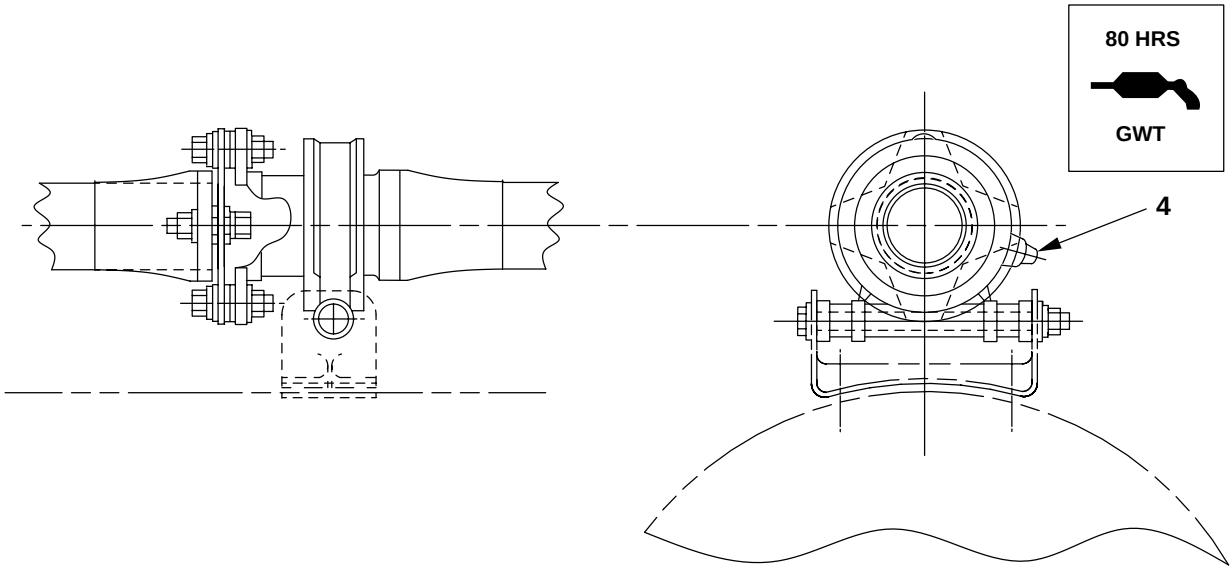
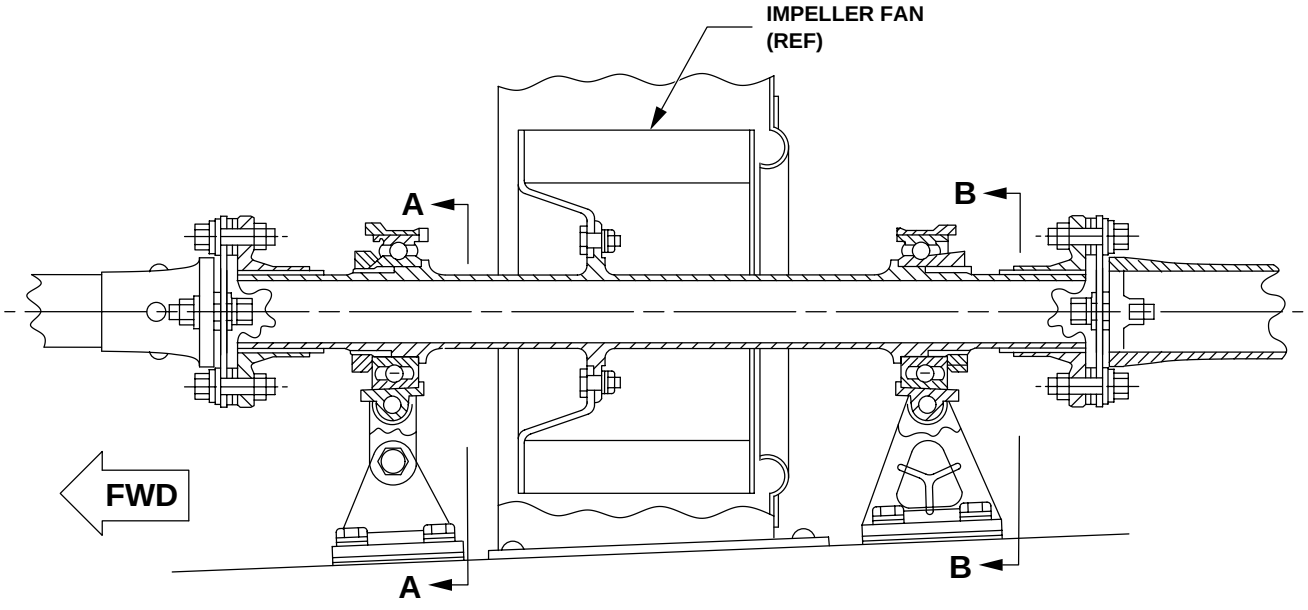
Lubrication Points (Sheet 2 of 9)



4. Hanger Bearing

DETAIL C (4 PLACES)



DETAIL D

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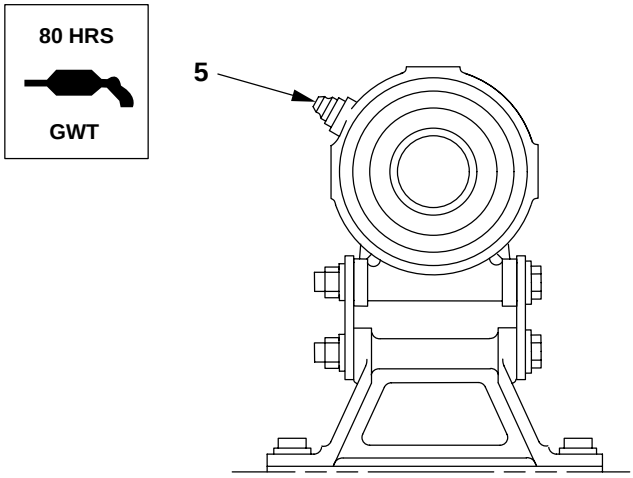
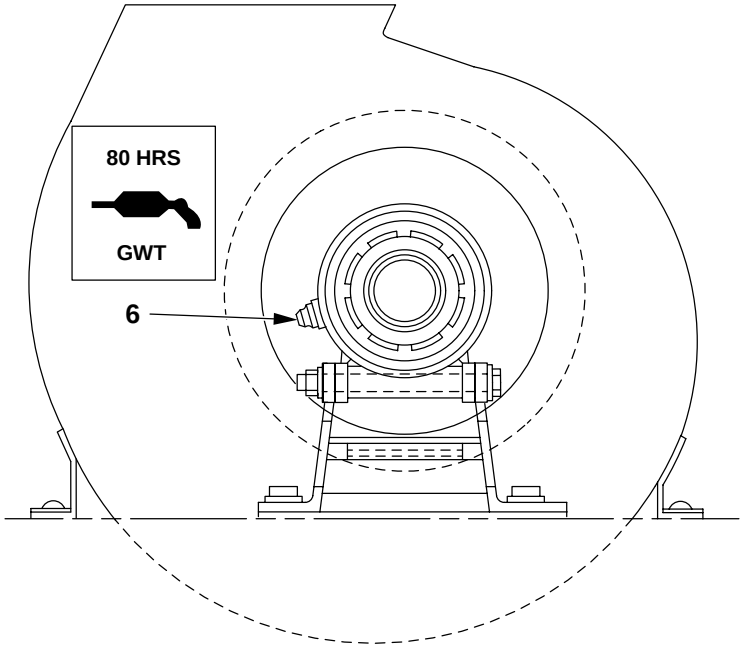
Lubrication Points (Sheet 3 of 9)



5. Aft Hanger Bearing

SECTION **A-A**



6. Forward Hanger Bearing

SECTION **B-B**

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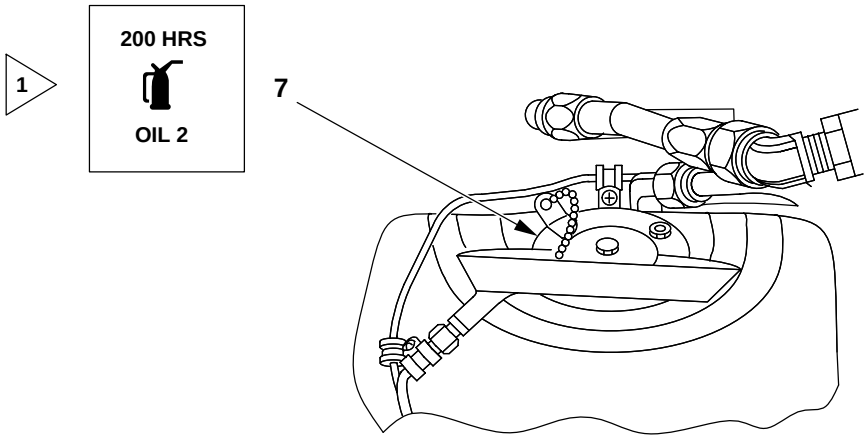
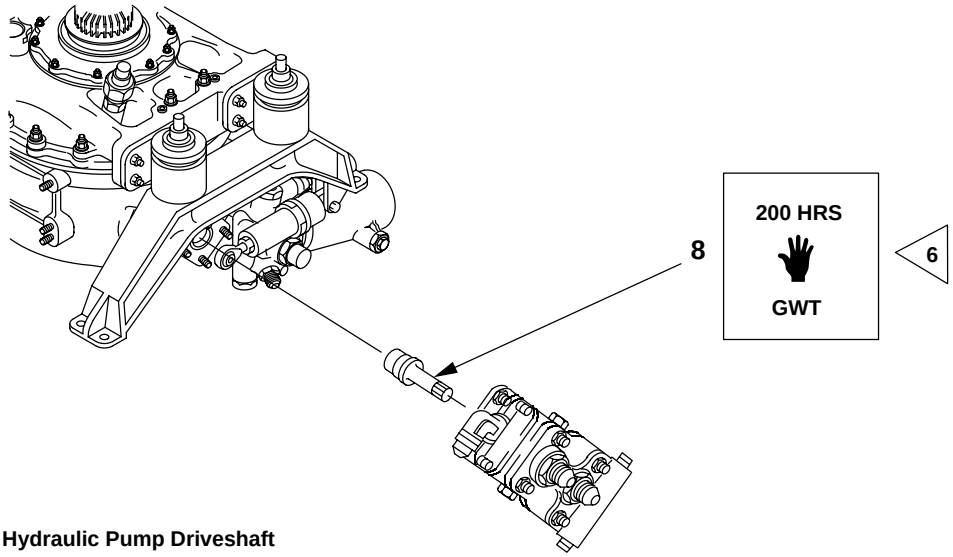
Lubrication Points (Sheet 4 of 9)



VIEW LOOKING INBOARD
RIGHT SIDE

7. Engine Oil Filler Cap

DETAIL **E**



8. Hydraulic Pump Driveshaft

DETAIL **F**

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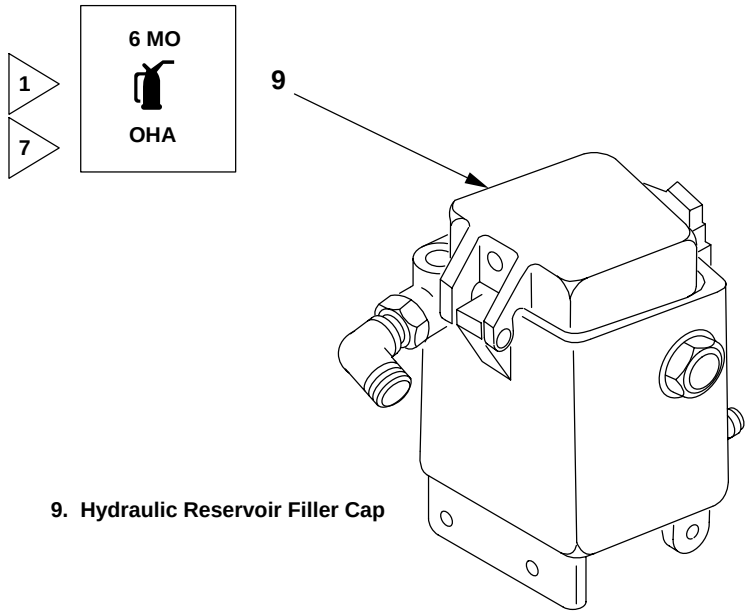
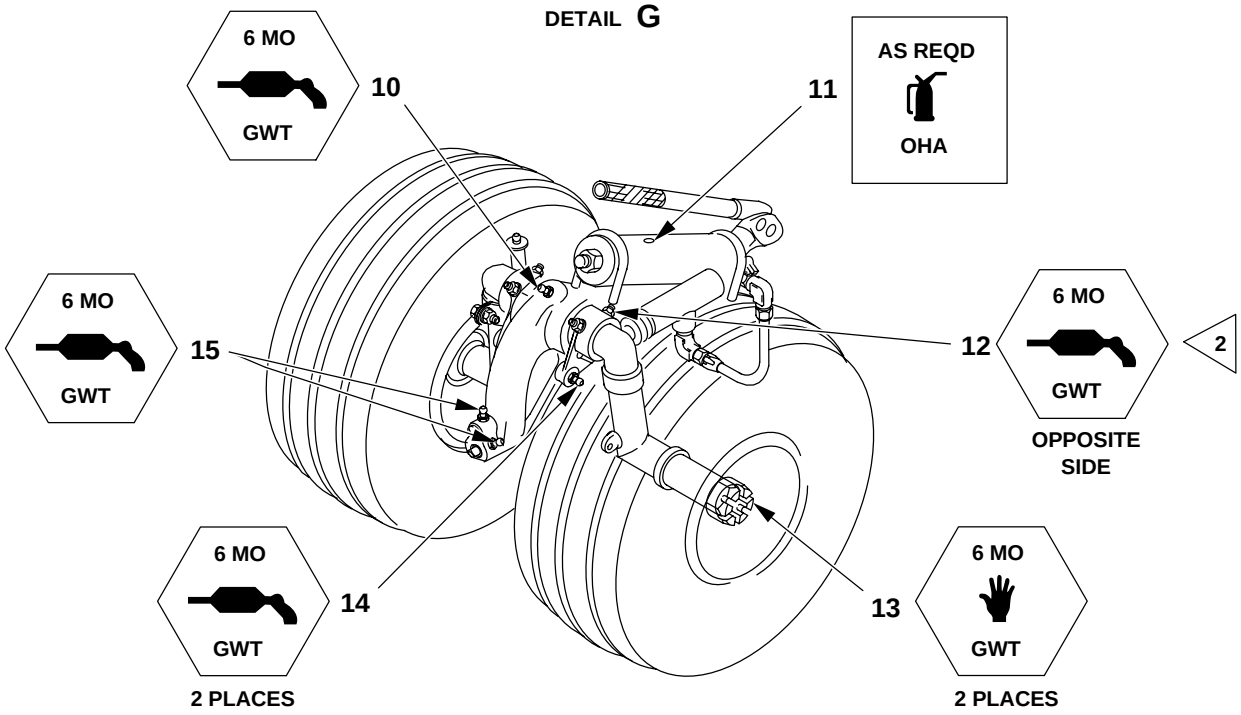
Lubrication Points (Sheet 5 of 9)



9. Hydraulic Reservoir Filler Cap

DETAIL G



10. Axle Pivot Point
11. Pump Reservoir
12. Actuating Cylinder Trunnions
13. Wheel Bearings
14. Pin Assembly
15. Securing Pin

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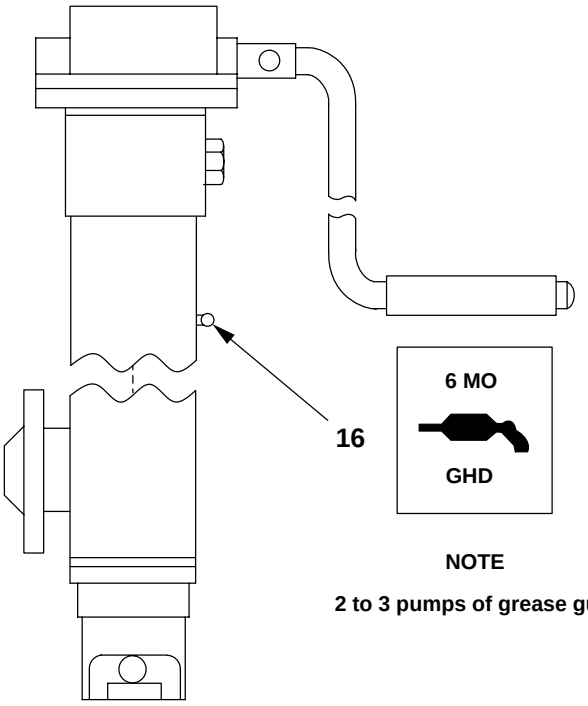
J0780

DETAIL H

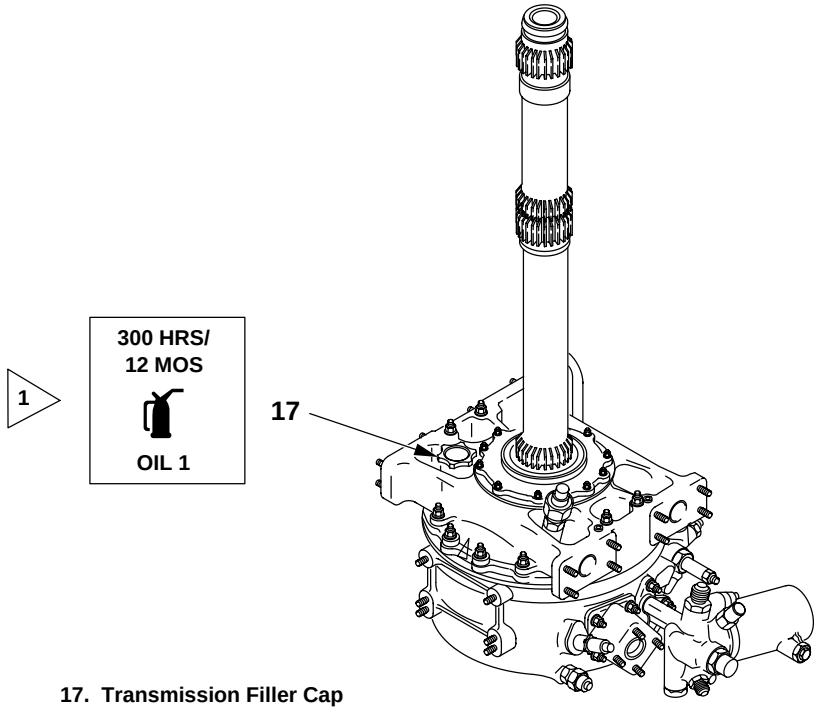
Lubrication Points (Sheet 6 of 9)



16. Grease Fitting

RAPID DEPLOYMENT LANDING GEAR JACK

DETAIL J



17. Transmission Filler Cap

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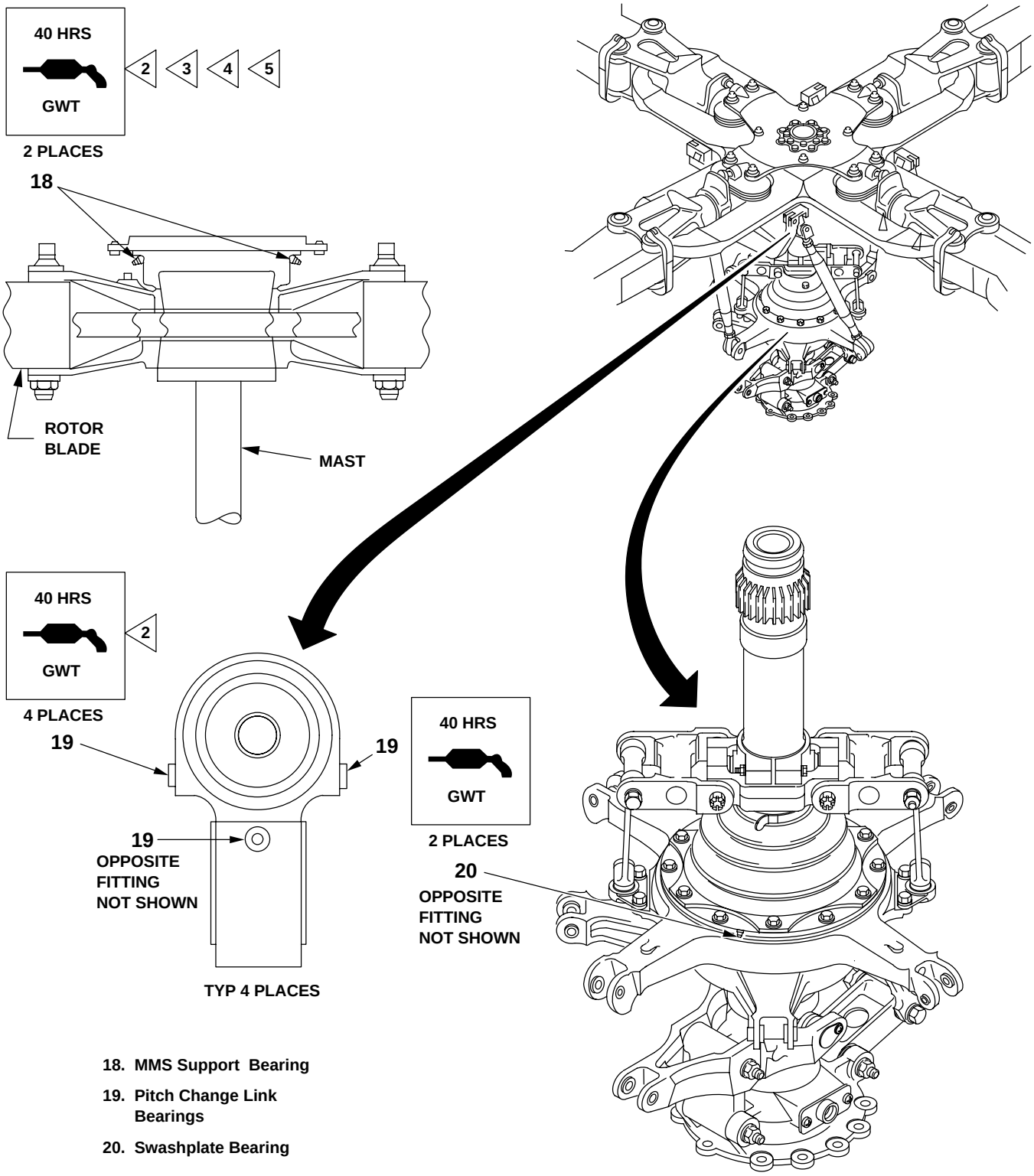
J0780

DETAIL K

Lubrication Points (Sheet 7 of 9)



18. MMS Support Bearing
19. Pitch Change Link Bearings
20. Swashplate Bearing

DETAIL L

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J0780

Lubrication Points (Sheet 8 of 9)

NOTES

1. Refer also to TM 1-1520-248-PPM, the appropriate Maintenance Manual Task, and the ON CONDITION and SPECIAL INSPECTIONS in the Aircraft Inspection Checksheet.
2. Lubricate at each grease fitting until grease exits from seal; avoid excessive grease pressure to ensure no seal damage is done. Rotate bearing 90° and lubricate each fitting again. This will ensure that fresh grease is supplied to the ball component of the bearing.
3. Visually inspect after purge lubrication to ensure no damage has been done to the seal.
4. Special lubrication requirements are as follows:
   - (a) After each day of operation, after snow or after washing, the bearing should be purge lubricated to remove trapped moisture and ensure that a lube film is supplied to susceptible surfaces.
   - (b) Parking helicopter outside in heavy dew environment requires that the bearing be purge lubricated every 7 days to ensure that no voids exist that could trap moisture.
   - (c) If the helicopter is stored for a period in excess of 45 days without operation or service, purge the bearing.
5. After first runup to 100% rotor RPM following purge lubrication of bearing, use wiping rag (D164) and clean purged grease from seal area between torquemeter support and main rotor hub and blade assembly top plate. Visually inspect for security of the lower seal of the bearing. Ensure seal is not visible between lower surface of torquemeter support and upper surface of main rotor hub and blade assembly top plate. Ensure that the normal channeling action of the balls in the grease has not dislodged the lower seal of the bearing.
6. Lubricate splines on both ends of hydraulic pump driveshaft and mating splines in transmission and hydraulic pump.
7. Drain/service hydraulic reservoir only to facilitate inspection for corrosion.

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Lubrication Points (Sheet 9 of 9)

Section VI. GROUND HANDLING AND JACKING

1-45. GROUND HANDLING AND JACKING

1-46. INTRODUCTION

This section contains maintenance procedures for: jacking and ground handling. Standard torques are provided in Appendix P and TM 1-1500-204-23.

1-47. SPECIAL REQUIREMENTS

Ground handling requirements in extreme environmental conditions (heat, cold, dust, high humidity, etc.) consist of normal procedures with emphasis on the following:

CAUTION

To prevent airframe structural damage when jacking or hoisting helicopter, all stress panels shall be installed prior to start of operation.

1. Wet weather and high humidity conditions create corrosion, rot, mildew, and mold. Keep helicopter as clean and dry as possible to prevent deterioration.

2. Check frequently to ensure drain valves are open and free of blockage.

3. Ensure fuel tank is full to prevent internal condensation during cold weather.

4. Ensure protective covers are installed and secured.

5. If space is available, park helicopter in hangar or shed.

1-48. TASK LIST

The task list contains those tasks required to support unit and intermediate level maintenance.

LIST OF TASKS

1-6-1. TOWING/PARKING HELICOPTER

This task covers: Towing and Parking

INITIAL SETUP

Applicable Configurations:
All

Tools:
Ground Handling Wheels (B213)
Tow Bar (B208)
Aft Crosstube Support Strap (B165)
Suitable Towing Vehicle

Personnel Required:
67S Scout Helicopter Repairer (3)

Equipment Condition:
Aft Crosstube Support Strap Installed (Task 1-6-3) (Across rough terrain with helicopter gross weight at 4100 pounds or greater)
Helicopter Safed (Task 1-6-7)

CAUTION

- To prevent permanent set in aft crosstubes, towing of helicopter on rough terrain (unprepared surfaces) or across hangar door tracks, etc., at weights of 4100 pounds or greater shall be avoided. In an emergency, helicopter may be towed up to its gross weight limitation by tying skid tubes together using aft crosstube support strap (B165) to prevent spreading.
- To prevent damage to helicopter while moving by hand, pushing force shall not be applied to antennas, stabilizer, and other parts of helicopter identified with NO PUSH stencils.

GO TO NEXT PAGE

GROUND HANDLING WHEELS

NOTE

Ground handling wheels can be installed with retractable pin(s) facing either forward or aft. Helicopter loading (center-of-gravity) dictates the position in which wheels should be installed. If helicopter center-of-gravity is aft, both ground handling wheels should be installed with retractable pins facing aft.

1. Place ground handling wheels (1) over left and right skid tubes (2). Align cradle (3) with eyebolts (4) and insert fixed pins (not shown) into eyebolts.

2. Push down on cradle (3) to line up retractable pins (5) and insert retractable pins into eyebolts (4). Ensure retractable pins (5) extend through eyebolts.

WARNING

To prevent injury due to ground handling wheels becoming accidentally disengaged from skid tubes, do not stand over wheels or handles while operating handles.

CAUTION

To prevent damage due to uncontrolled movement, helicopter shall not be left unattended with ground handling wheels extended.

3. Operate handles (6) to extend wheels simultaneously and raise skids clear of ground.

4. Install tow bar (B208) (7) on tow fittings (8).

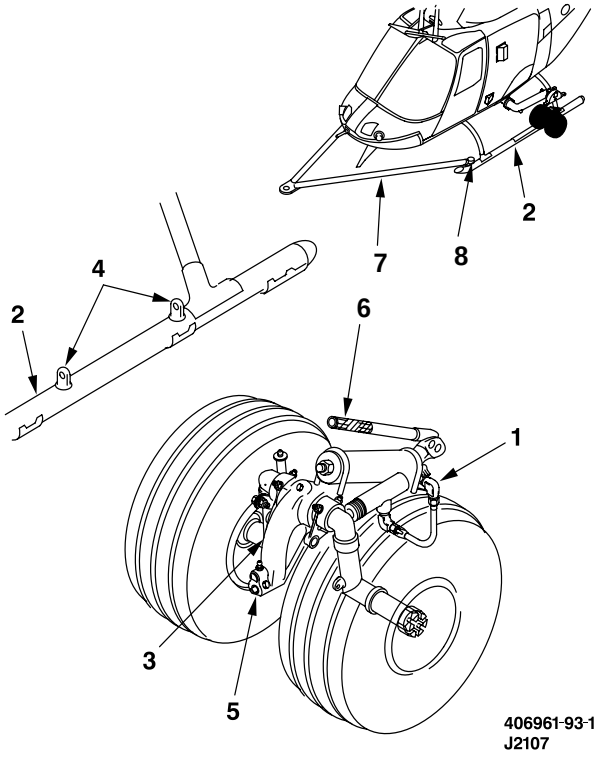
TOW

CAUTION

To prevent structural damage while towing, all covers, panels, access doors, and fairings shall be installed.

5. Station a person at tail skid to maintain helicopter at level position during towing operation.

6. Clear towing area of auxiliary support equipment.



7. Tow or push slowly, balancing helicopter with tail skid.

8. After reaching destination remove tow bar (7).

WARNING

To prevent injury to personnel, feet shall not be allowed under skid gear when retracting ground handling wheels.

9. Lower ground handling wheels (1) simultaneously.

10. Disengage retractable pins (5).

11. Remove ground handling wheels (1) from helicopter skid gear.

12. Install grounding cables.

FOLLOW-ON MAINTENANCE

Remove aft crosstube support strap (Task 1-6-3).

END OF TASK

1-6-2. TOWING HELICOPTER WITH RAPID DEPLOYMENT SKID GEAR

This task covers: Towing of Helicopter

INITIAL SETUP

Applicable Configurations:
All

Tools:
Ground Handling Wheels (B213)
Tow Bar (B208)
Suitable Towing Vehicle
Aft Crosstube Support Strap (B165)

Personnel Required:
67S Scout Helicopter Repairer (3)

Equipment Condition:
Aft Crosstube Support Strap Installed (Task 1-6-3) (across rough terrain with helicopter gross weight at 4100 pounds or greater)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

CAUTION

- To prevent permanent set in aft crosstubes, towing of helicopter on rough terrain (unprepared surfaces) or across hangar door tracks, etc., at weights of 4100 pounds or greater shall be avoided. In an emergency, helicopter may be towed up to its gross weight limitation by tying skid tubes together using aft crosstube support strap (B165) to prevent spreading.
- To prevent damage to helicopter while moving by hand, pushing force shall not be applied to antennas, stabilizer, and other parts of helicopter identified with NO PUSH stencils.

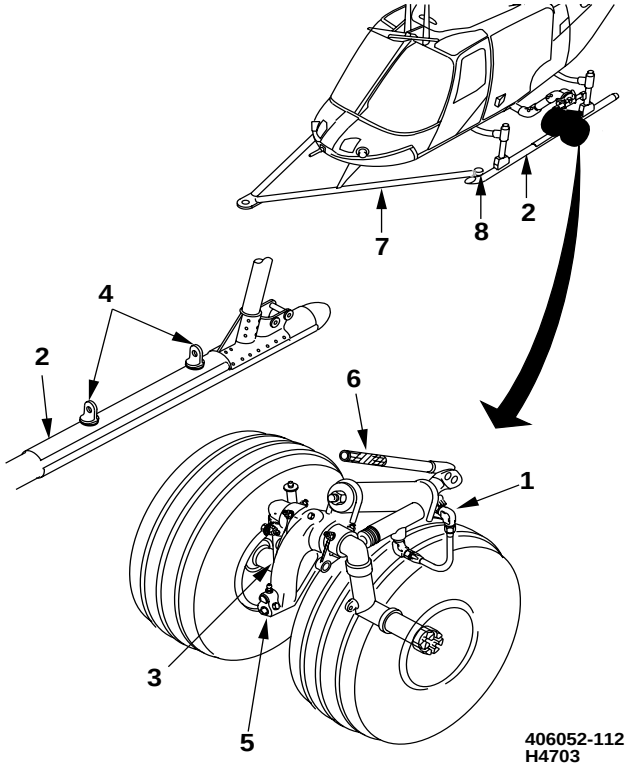
GROUND HANDLING WHEELS

NOTE

Ground handling wheels can be installed with retractable pin(s) facing either forward or aft. Helicopter loading (center-of-gravity) dictates the position in which wheels should be installed. If helicopter center-of-gravity is aft, both ground handling wheels should be installed with retractable pins facing aft.

1. Place ground handling wheels (1) over left and right skid tubes (2). Align cradle (3) with eyebolts (4) and insert fixed pins (not shown) into eyebolts.

2. Push down on cradle (3) to line up retractable pins (5) and insert retractable pins into eyebolts (4). Ensure retractable pins (5) extend through eyebolts.



CAUTION

To prevent damage due to uncontrolled movement, helicopter shall not be left unattended with ground handling wheels extended.

3. Operate handles (6) to extend wheels simultaneously and raise skids clear of ground.

4. Install tow bar (7) (B208) on tow fittings (8).

GO TO NEXT PAGE

1-6-2. TOWING HELICOPTER WITH RAPID DEPLOYMENT SKID GEAR (CONT)

TOW

CAUTION

To prevent structural damage while towing, all covers, panels, access doors, and fairings shall be installed.

5. Station a crewmember at tail skid to maintain helicopter at level position during towing operation.

6. Clear towing area of auxiliary support equipment.

7. Tow or push slowly, balancing helicopter with tail skid.

8. After reaching destination remove tow bar (7) from tow fittings (8).

WARNING

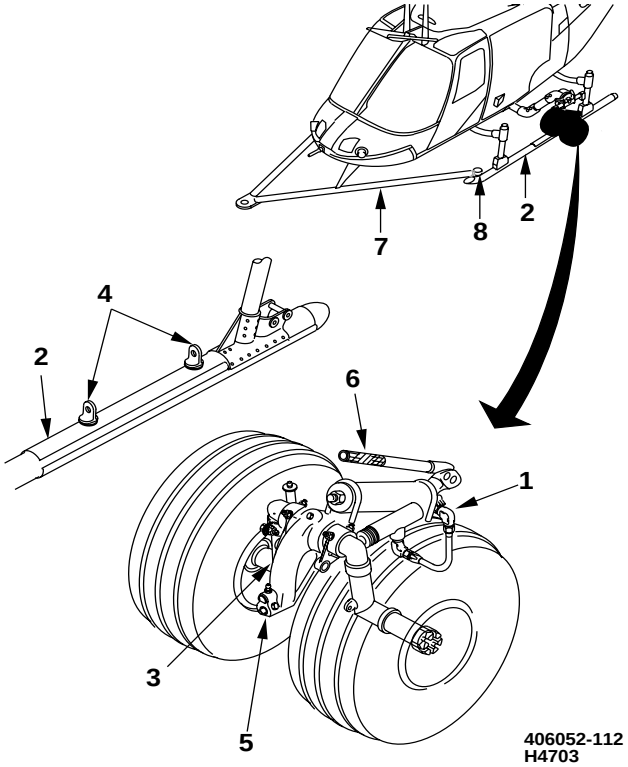
To prevent injury to personnel, feet shall be kept from under skid gear when retracting ground handling wheels.

9. Lower ground handling wheels (1) simultaneously.

10. Disengage retractable pins (5) from eyebolts (4).

11. Remove ground handling wheels (1) from helicopter skid tubes (2).

12. Raise cradle (3) with handle (6) high enough that retractable pin (5) will not contact ground when ground handling wheels (1) are moved.



FOLLOW-ON MAINTENANCE

Remove aft crosstube support strap (B165) (Task 1-6-4).

END OF TASK

1-6-3. AFT CROSSTUBE SUPPORT STRAP (STANDARD GEAR) — INSTALLATION/REMOVAL

This task covers: Installation and Removal (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Aft Crosstube Support Strap (B165)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

INSTALL

NOTE

Aft crosstube support strap should be checked for serviceability prior to installation.

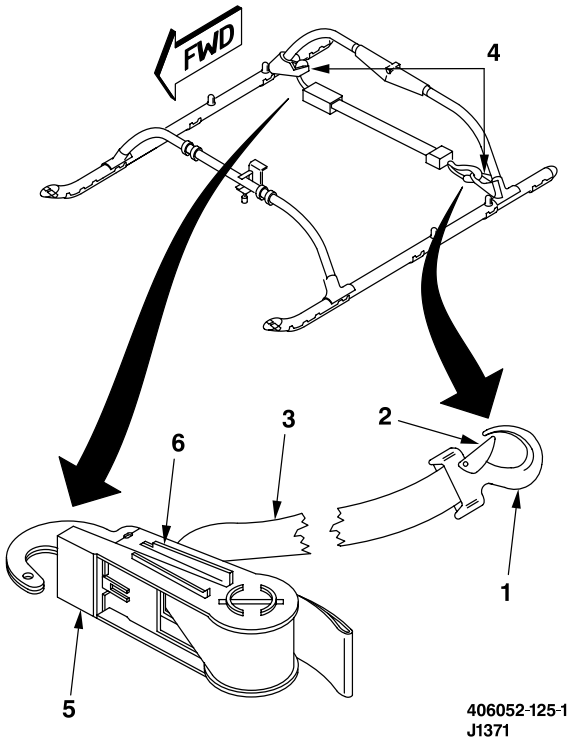
1. Attach hook (1) end with locking gate (2) of crosstube support strap (3) to either crosstube support fitting (4).

2. Attach ratchet (5) end of crosstube support strap (3) to other crosstube support fitting (4).

CAUTION

To prevent damage to crosstube assembly, use of excessive force while tightening ratchet shall be avoided.

3. Tighten ratchet (5) until crosstube support strap (3) is tight and straight across from one crosstube support fitting (4) to other.



REMOVE

4. Release catch (6) of ratchet (5) end of crosstube support strap (3) and operate ratchet until enough slack exists to free hook (1) end and ratchet (5) end from crosstube support fittings (4).

5. Release locking gate (2) of hook (1) end of crosstube support strap (3) and remove crosstube support strap.

END OF TASK

1-6-4. AFT CROSSTUBE SUPPORT STRAP (RAPID DEPLOYMENT GEAR) — INSTALLATION/ REMOVAL

This task covers: Installation and Removal (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

Tools:
General Mechanic Tool Kit (B178)
Aft Crosstube Support Strap (B165)

INSTALL

NOTE

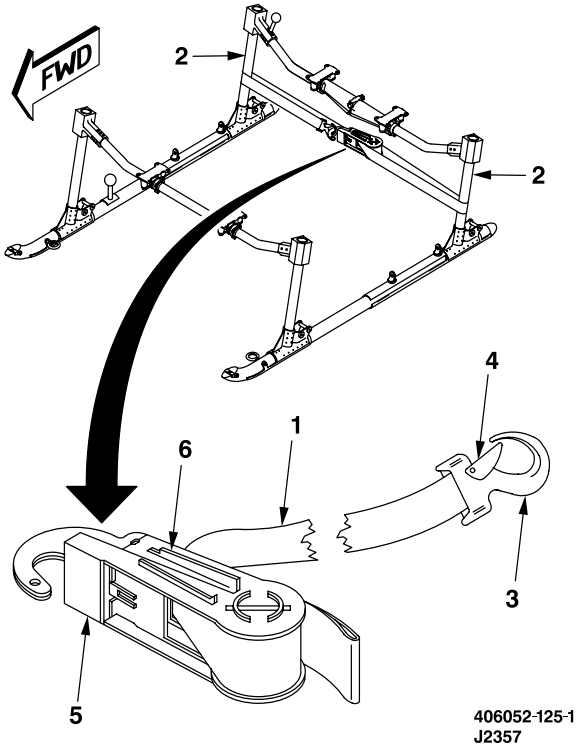
Aft crosstube support strap should be checked for serviceability prior to installation.

1. Install aft crosstube support strap (1) around rear legs (2) of rapid deployment skid gear and attach hook (3) end with locking gate (4) of crosstube support strap to ratchet (5) end of crosstube support strap.

CAUTION

To prevent damage to crosstube assembly, use of excessive force while tightening ratchet shall be avoided.

2. Tighten ratchet (5) until crosstube support strap (1) is tight and straight across (strap at same height on both legs).



REMOVE

3. Release catch (6) of ratchet (5) end of crosstube support strap (1) and operate ratchet until enough slack exists to free hook (3).

4. Release locking gate (4) of hook (3) end of crosstube support strap (1) from ratchet (5) end of crosstube support strap and remove crosstube support strap.

END OF TASK

1-6-5. DC POWER (BATTERY AND EXTERNAL) — APPLICATION/REMOVAL

This task covers: Power Application and Removal

INITIAL SETUP

Applicable Configurations:
All

Tools:
APU
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

1-6-5. DC POWER (BATTERY AND EXTERNAL) — APPLICATION/REMOVAL (CONT)

BATTERY POWER APPLICATION

CAUTION

Do not apply battery power for more than 10 minutes continuously, or damage to battery may result.

1. Connect battery (TM 11-1520-248-23).

2. Open either crew door to gain access to forward overhead console panel (1).

3. Position ESNTL BUS switch (2) to START.

4. Position BATT 1 switch (3) and/or BATT 2 switch (4) to BATT 1 and/or BATT 2.

DC EXTERNAL POWER APPLICATION

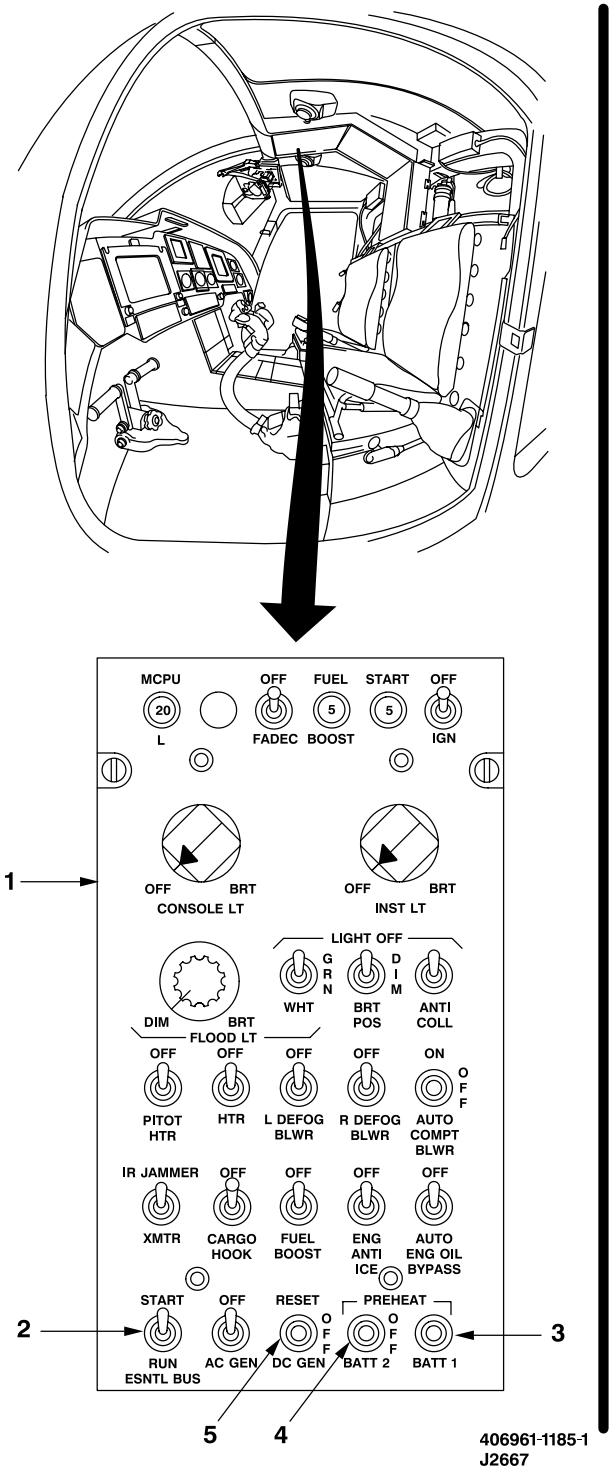
CAUTION

- To prevent damage to weapon pylons by accidental droppage, JETT circuit breaker shall be opened before applying external power.
- To prevent accidental discharge or release, external power shall not be applied when weapons are loaded.

5. Open either crew door to gain access to forward overhead console panel (1).

6. Position BATT 1 switch (3) and BATT 2 switch (4) to OFF.

7. Verify DC GEN switch (5) is in OFF position.



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1-6-5. DC POWER (BATTERY AND EXTERNAL) — APPLICATION/REMOVAL (CONT)

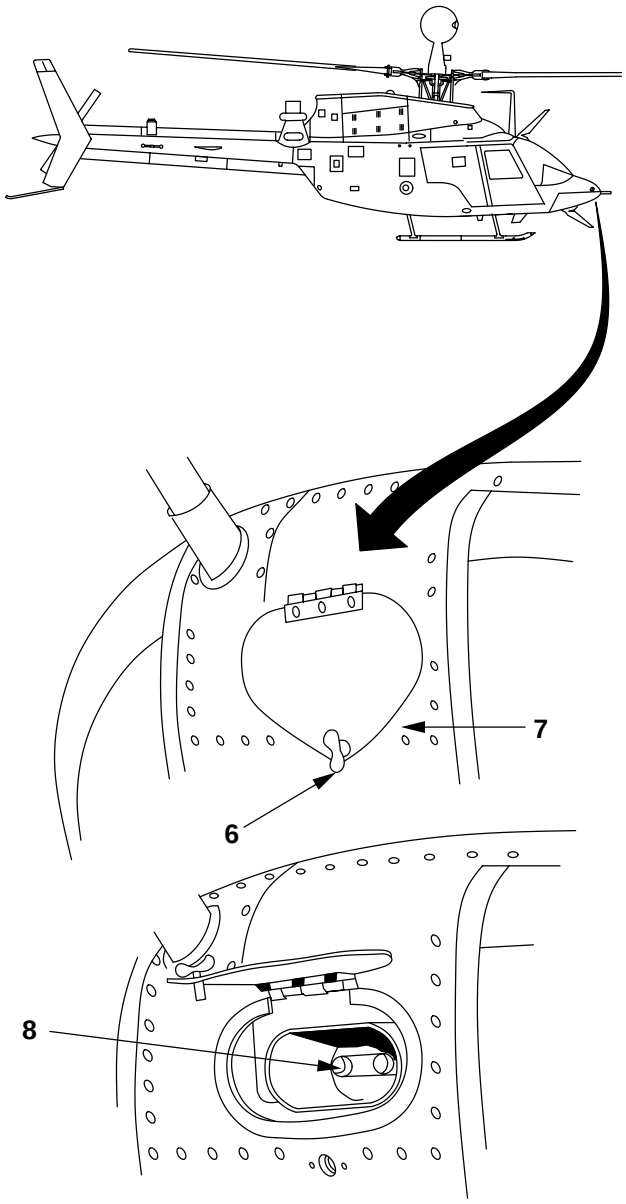
8. Loosen fastener (6) and open dc power receptacle access door (7).

Electric Shock

9. Plug APU power cable into dc power receptacle (8).

10. Turn external power (APU) on. The helicopter electrical system should be energized.

11. Verify APU output is 28 to 28.5 Vdc.



ACCESS DOOR OPEN

406961-1185-2
J2667

GO TO NEXT PAGE

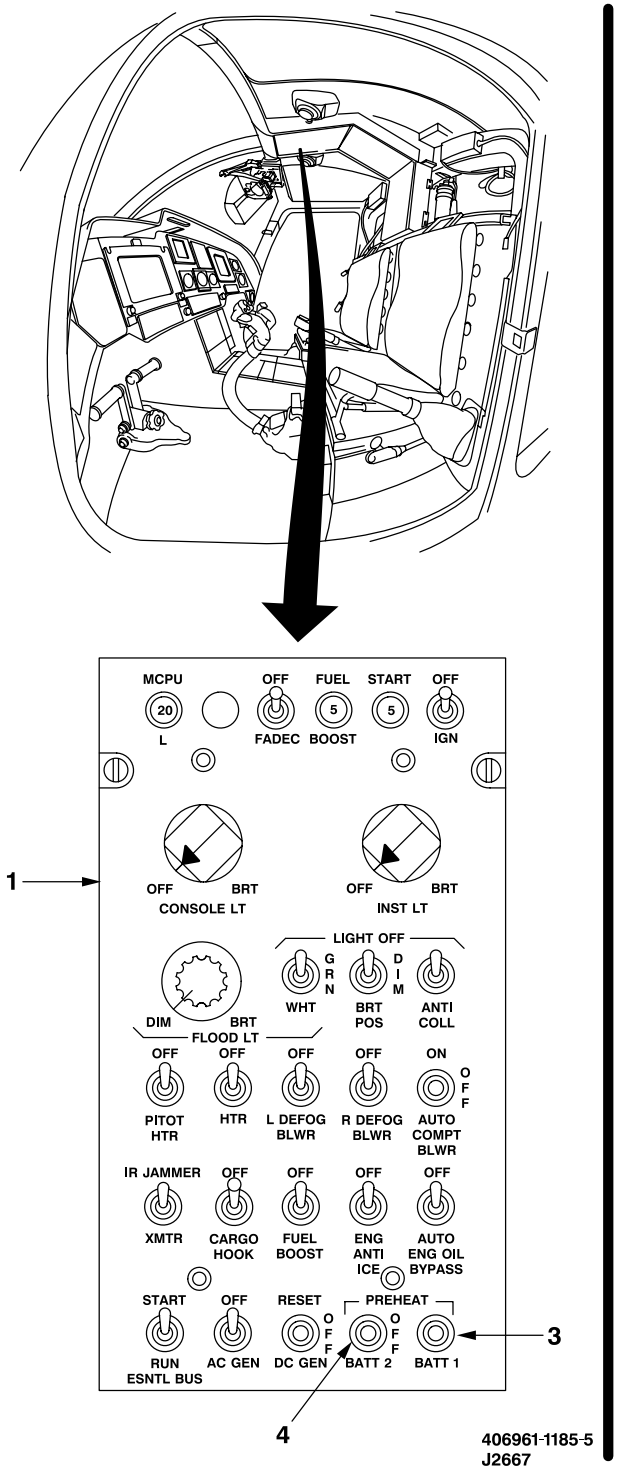
1-6-5. DC POWER (BATTERY AND EXTERNAL) — APPLICATION/REMOVAL (CONT)

BATTERY POWER REMOVAL

12. Open either crew door to gain access to forward overhead console panel (1).

13. Position BATT 1 switch (3) and BATT 2 switch (4) to OFF.

14. Disconnect battery (TM 11-1520-248-23).



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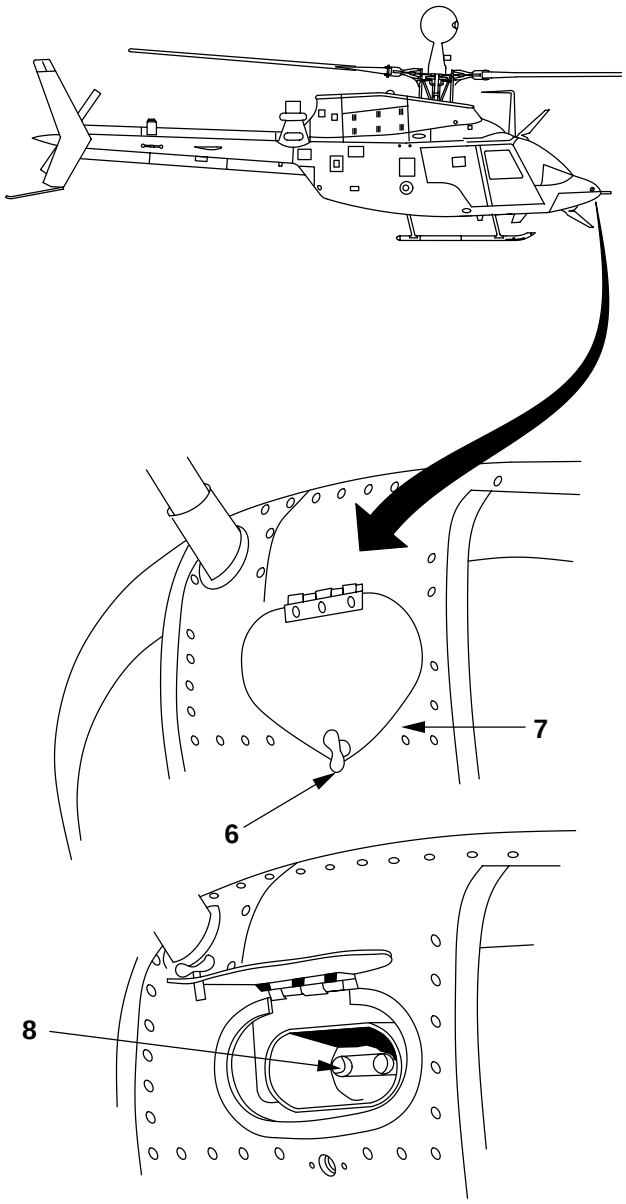
1-6-5. DC POWER (BATTERY AND EXTERNAL) — APPLICATION/REMOVAL (CONT)

DC EXTERNAL POWER REMOVAL

15. Turn off (shut down) APU.

16. Disconnect APU from dc power receptacle (8).

17. Close access door (7) and tighten fastener (6).



ACCESS DOOR OPEN

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J2667

END OF TASK

1-6-6. AC POWER (EXTERNAL) — APPLICATION/REMOVAL

This task covers: Power Application and Removal

INITIAL SETUP

Applicable Configurations:
All

Tools:
APU

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

1-6-6. AC POWER (EXTERNAL) — APPLICATION/REMOVAL (CONT)

AC EXTERNAL POWER APPLICATION

1. Open either crew door to gain access to forward overhead console panel (1) and center post circuit breaker panel (2).

CAUTION

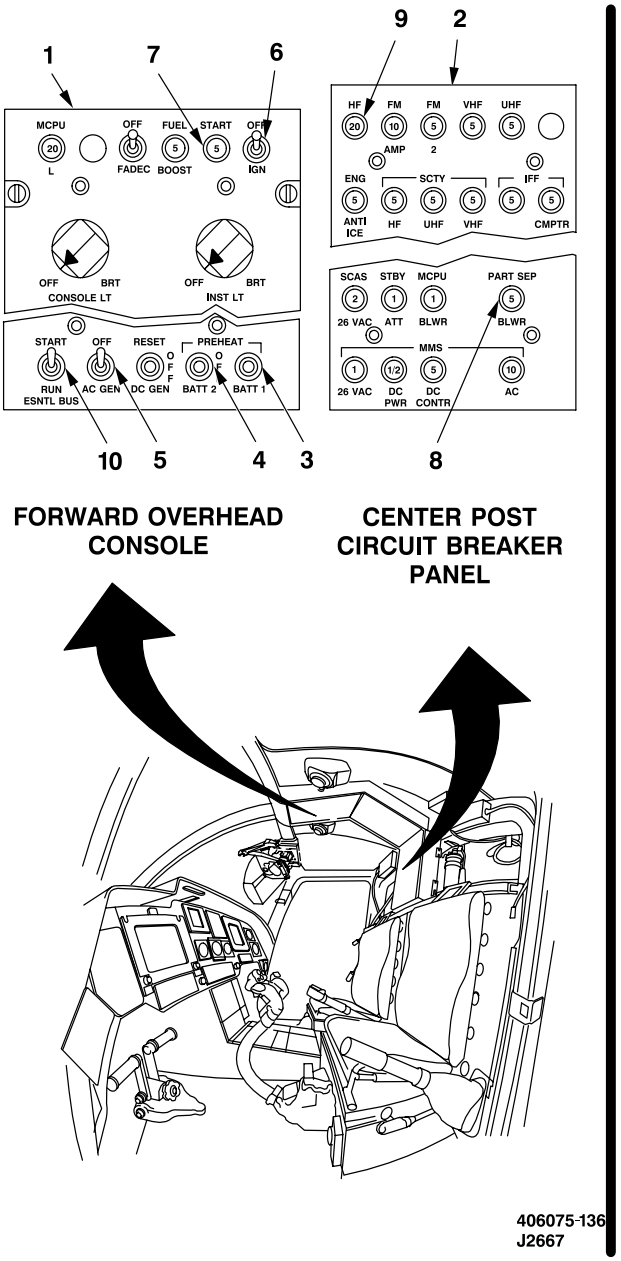
- To prevent damage to weapon pylons by accidental droppage, pull JETT circuit breaker before applying external power.
- To prevent accidental discharge or release, do not apply external power when weapons are loaded.

2. Position BATT 1 switch (3), BATT 2 switch (4), and DC GEN switch (5) to OFF.

3. Verify following circuit breakers are open:

IGN (6)
START (7)
PART SEP BLWR (8)
HF (9)

4. Position ESNTL BUS switch (10) to START.



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J2667

GO TO NEXT PAGE

5. Loosen fastener (11) and open access door (12).

Electric Shock

6. Connect 115 Vac, 3-phase, 400 Hz external power (APU) to ac power receptacle (13).

7. Start APU.

NOTE

If APU loadmeter (ammeter) does not indicate transfer of power to helicopter, momentarily press EXT PWR RESET switch (14).

8. Press EXT PWR RESET switch (14).

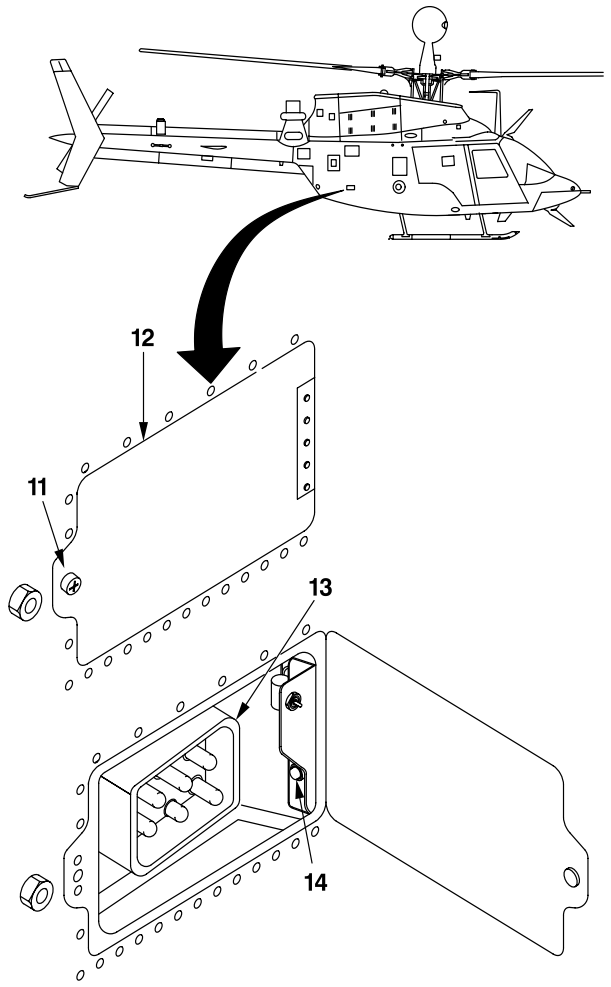
9. Adjust APU for 115 Vac, 400 Hz output. Helicopter electrical system should be energized.

AC EXTERNAL POWER REMOVAL

10. Turn off (shut down) APU.

11. Disconnect APU from ac power receptacle (13).

12. Close access door (12) and tighten fastener (11).



ACCESS DOOR OPEN

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J2667

END OF TASK

1-6-7. HELICOPTER SAFING PROCEDURES

This task covers: External and Cockpit Safing Procedures

INITIAL SETUP

Applicable Configurations:
All

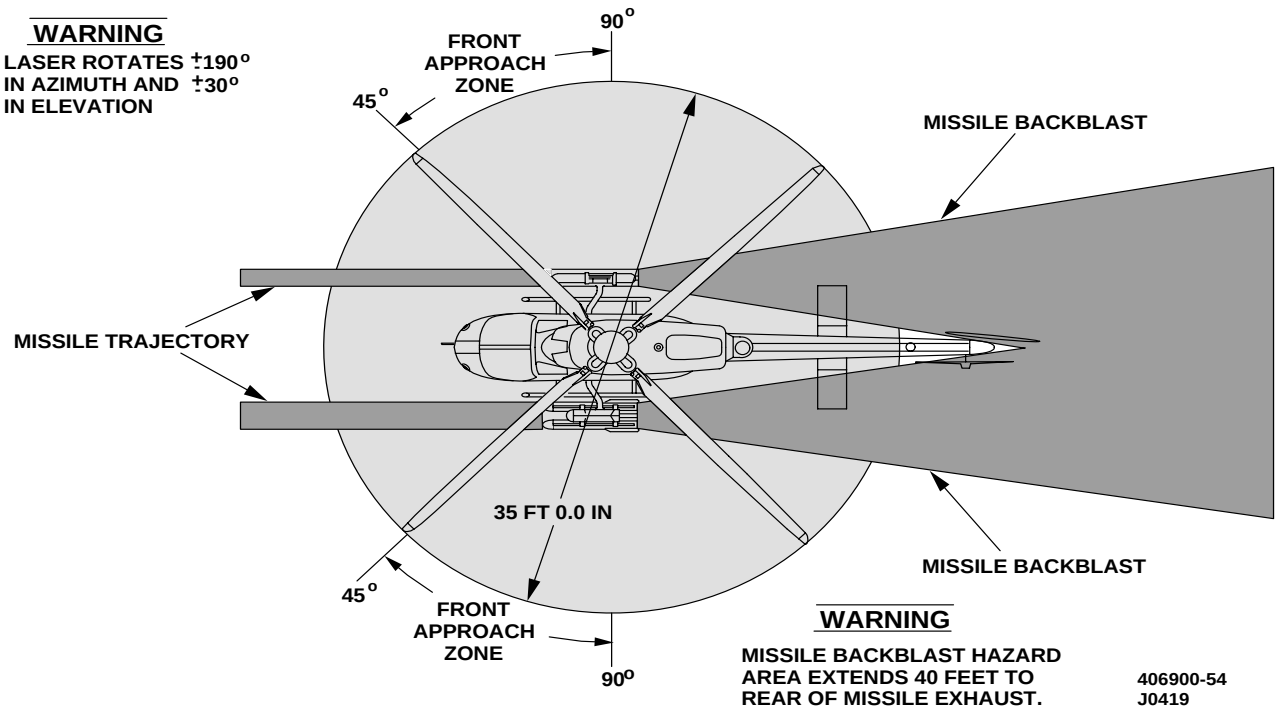
Material:
Lockwire (D130)

Personnel Required:
67S Scout Helicopter Repairer
68J Aircraft Armament Repairer

References:
TM 9-1055-460-13&P
TM 9-1090-214-23&P
TM 9-1425-475-20
TM 9-1440-431-23

WARNING

- To prevent personal injury, establish eye contact with pilot and obtain approval before entering rotor disc area of helicopter with rotors turning.
- To prevent injury to personnel, helicopter shall be approached at a 45° to 90° angle from the front.
- Serious injury or death may result if all applicable armament precautions are not observed.



Safe and Hazardous Zones

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1-6-7. HELICOPTER SAFING PROCEDURES (CONT)

EXTERNAL SAFING

1. Connect grounding cables.

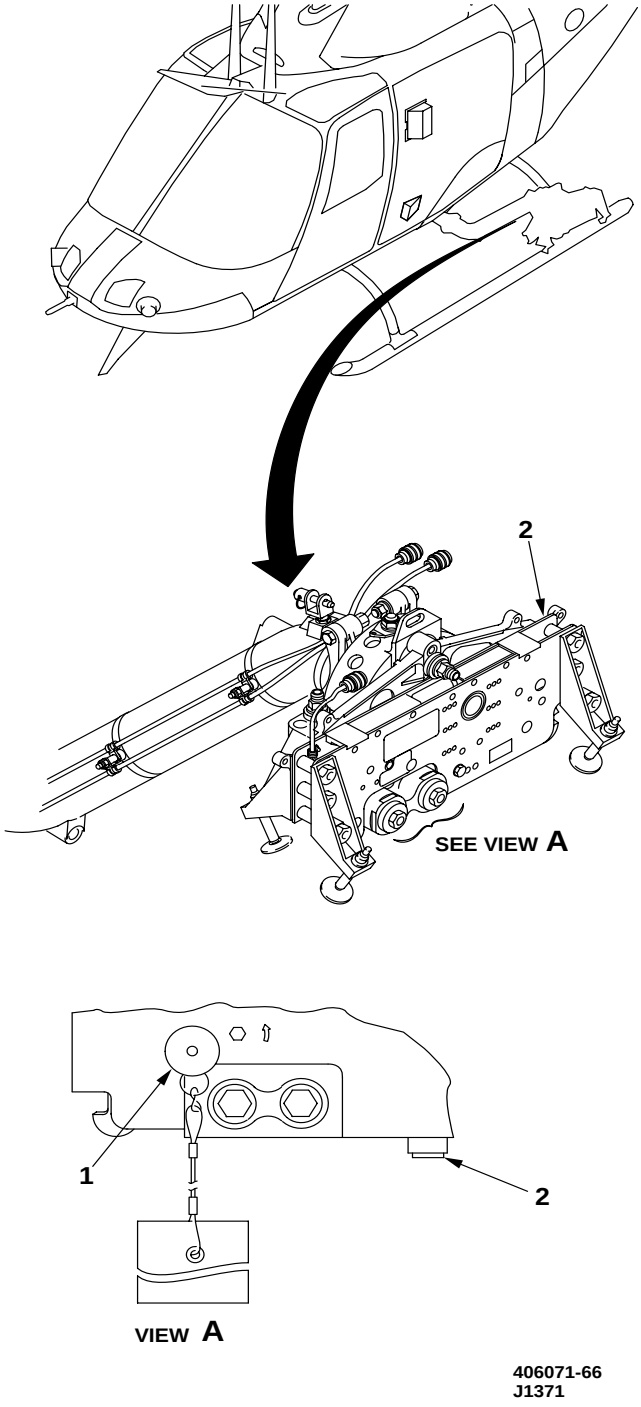
2. Insert ejector rack safety pins (1) in weapons pylon ejector rack (2).

3. Ensure MASTER arm switch on armament control panel is in OFF position.

4. Remove all munitions from weapons (TM 9 series manuals listed in INITIAL SETUP).

5. Move to other side of helicopter and repeat steps 2 and 4.

6. Disconnect battery(ies) (Task 1-6-5).



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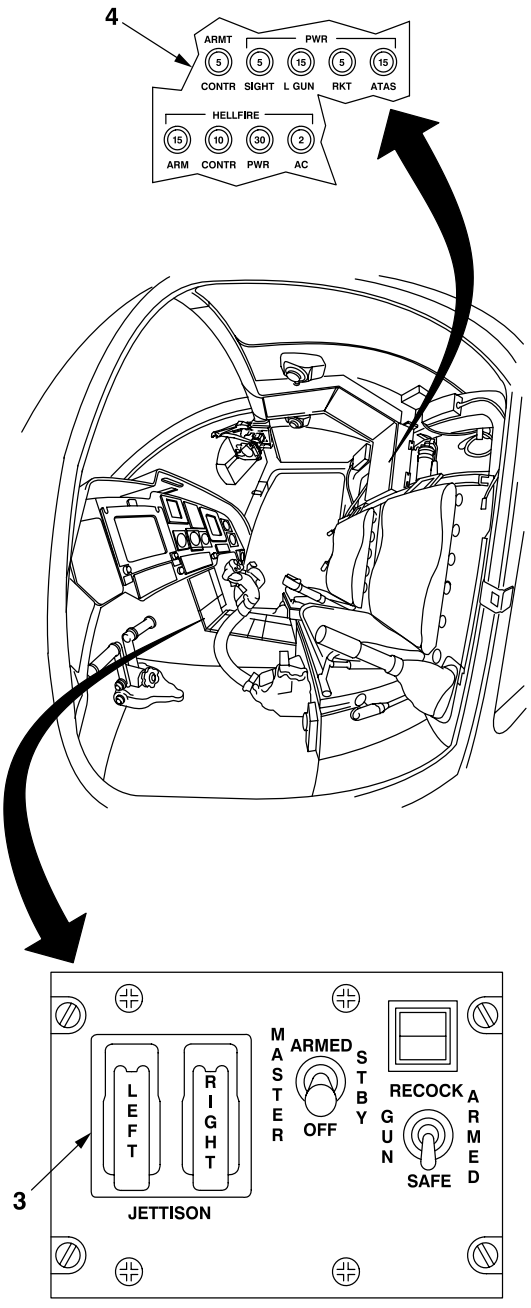
1-6-7. HELICOPTER SAFING PROCEDURES (CONT)

COCKPIT SAFING

7. Ensure jettison switches (3) are OFF with switch guards closed and secured with lockwire (D130).

8. Pull (open) all armament circuit breakers on center post circuit breaker panel (4).



ARMAMENT CONTROL PANEL

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J1805

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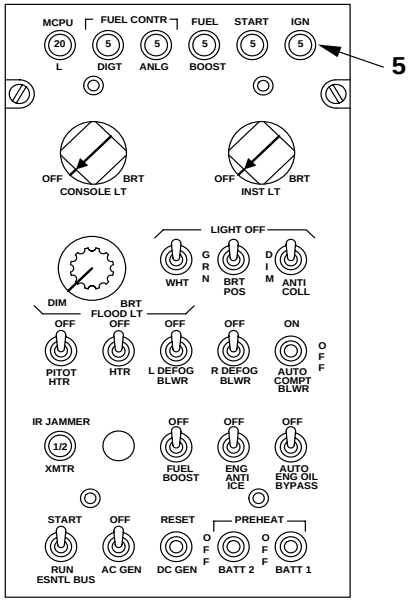
1-6-7. HELICOPTER SAFING PROCEDURES (CONT)

CAUTION

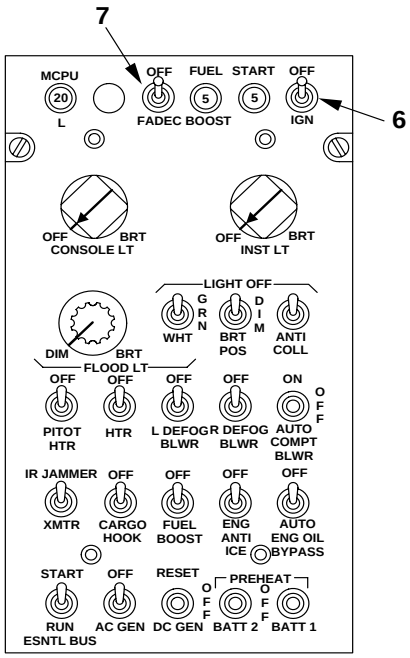
To prevent accidental automatic start, IGN circuit breaker/circuit breaker switch and FADEC circuit breaker switch shall be placed in "OPEN" or "OFF" position prior to applying power to helicopter.

9. Pull IGN circuit breaker (5) to open position (OH-58D).

10. Place IGN circuit breaker switch (6) (toggle) and FADEC circuit breaker switch (7) (toggle) in OFF position (OH-58D(R)).



OH-58D
FWD OVERHEAD
CONSOLE



OH-58D(R)
FWD OVERHEAD
CONSOLE

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J1805

END OF TASK

1-6-8. JACKING HELICOPTER

This task covers: Jacking

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Jack Pad (2) (Loose Equipment)
Washer (6) (Loose Equipment)
Bolt (6) (Loose Equipment)
Hydraulic Jack (B75) (3)
Plumb Bob (B106)
Helicopter Hoisting Sling Assembly (B149)
Suitable Hoist (B69)

Personnel Required:
67S Scout Helicopter Repairer (5)

Equipment Condition:
Weapons Removed (TM 9-1090-214-23&P)
Helicopter Safed (Task 1-6-7)

WARNING

- To prevent serious injury to personnel and/or major damage to helicopter in event of a jack failure, a suitable means of secondary support must be used when jacking the helicopter.
- Helicopter shall be placed on smooth, level surface in a relatively wind-free area prior to jacking. Sustained wind or sudden wind gusts may topple helicopter from jacks causing serious injury to personnel.

CAUTION

To prevent damage to helicopter, the following precautions must be observed while helicopter is on jacks:

- Do not climb on or enter helicopter.
- Avoid bumping or otherwise disturbing helicopter.
- Rope off area around helicopter and display signs: THIS HELICOPTER ON JACKS.
- Do not leave helicopter unattended when using jacks without positive locks.
- Ensure all structural panels are installed.

GO TO NEXT PAGE

1-6-8. JACKING HELICOPTER (CONT)

PREPARE

1. Install two forward jack pad fittings (1) (if required) forward of landing gear forward crosstube as follows:

a. Place fittings (1) in position on helicopter mounting pads, if not installed.

b. Secure each fitting (1) with three washers (2) and bolts (3).

2. Install helicopter hoisting sling assembly (B149) on helicopter with MMS assembly installed or removed as follows:

a. Attach helicopter hoisting sling assembly to suitable hoist (B69).

CAUTION

To prevent damage to mast mounted sight, hoisting tool shall not be allowed to strike it.

b. Lower helicopter hoisting sling assembly (B149) over helicopter centered over MMS.

c. Lower helicopter hoisting sling assembly (B149) until straps (4) can be looped under hub upper plate and back up to hooks (5).

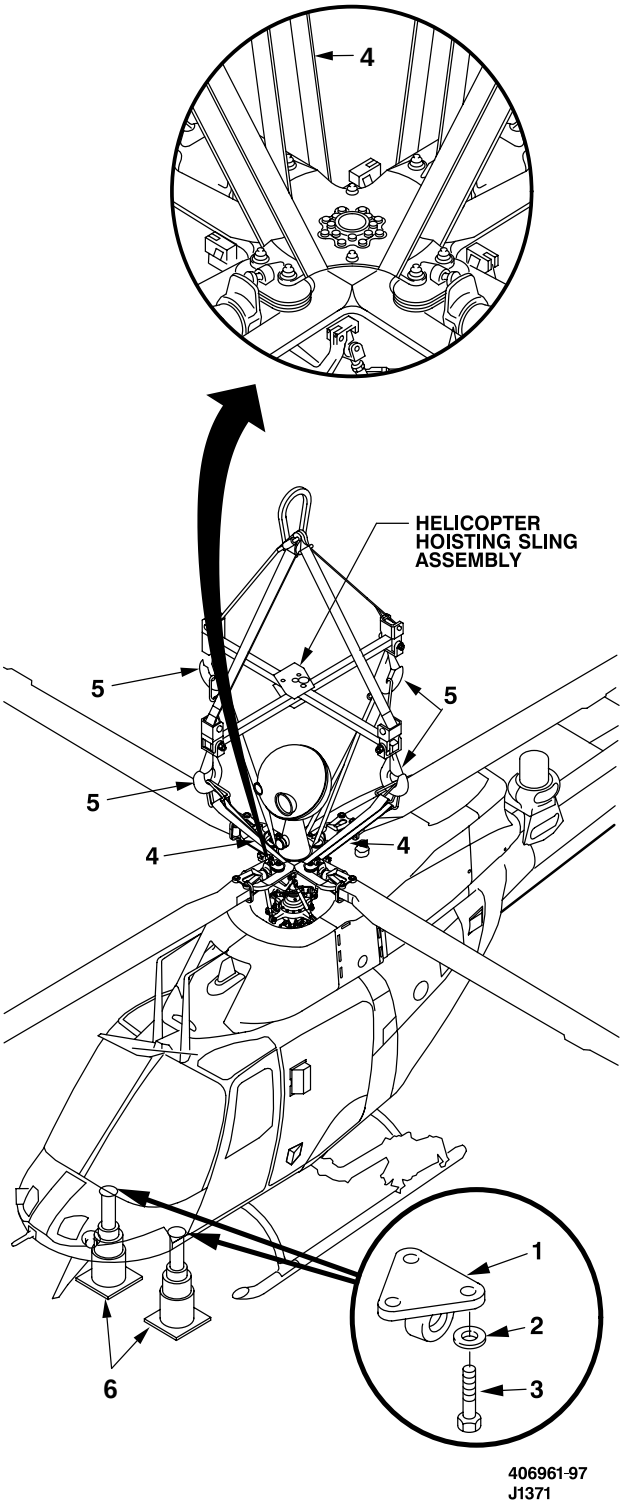
d. Attach straps (4) to hooks (5).

JACK

WARNING

To prevent possible injury to personnel from falling off jacks, helicopter shall not be jacked with blades folded and stowed, because of excessively aft CG.

3. Place jacks (6) under two forward jack pad fittings (1) located forward of landing gear crosstube at each side.



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4. Place jack (6) under jack pad fitting (7) aft of anticollision light.

NOTE

The use of the plumb bob is not required for all jacking operations.

5. Remove CPG collective stick (Task 11-2-15).

6. Hang plumb bob from slotted plate (8) so plumb bob (9) just clears level plate (10).

CAUTION

To prevent damage to helicopter from falling off jacks, slack shall be kept out of cable of hoist attached to main rotor hub assembly. Hoist line slack shall be removed continually throughout jacking of helicopter. Hoist shall not be allowed to provide any lifting force on helicopter.

7. Adjust jacks (6) evenly to align plumb bob exactly over intersection of two lines marked with (+) on plate. Observe following precautions while helicopter is supported on jacks:

a. Position one person to supervise jacking procedure.

b. Raise helicopter evenly. Use one person to activate each jack (6).

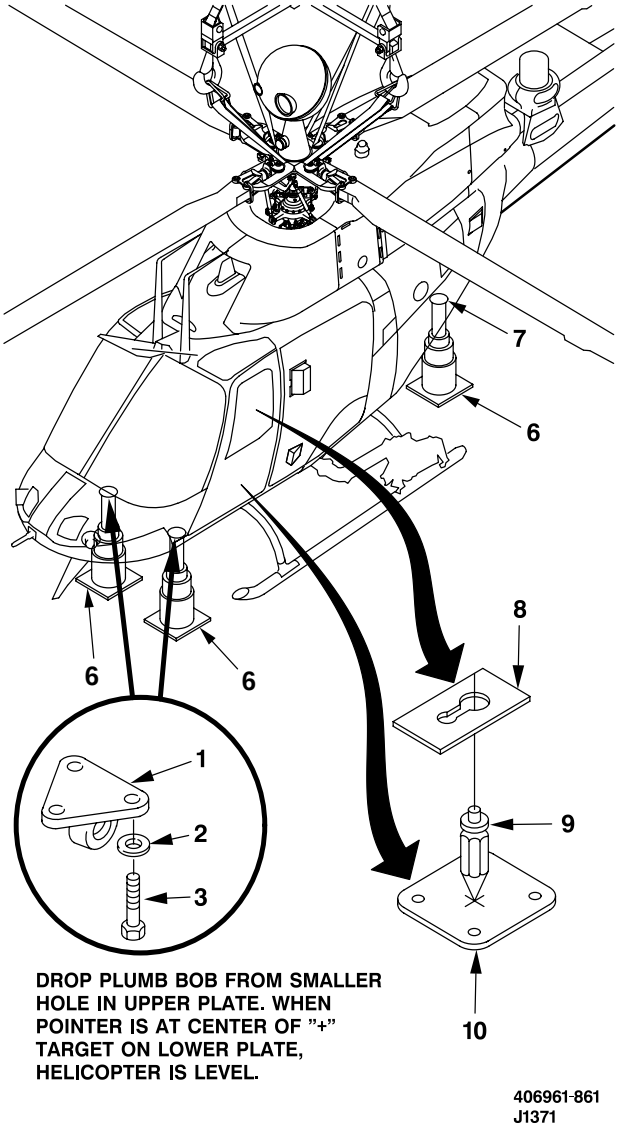
c. After necessary work, lower helicopter slowly and evenly.

8. Remove jacks (6).

9. Remove three bolts (3) and washers (2) from each jack pad fitting (1) (if required).

10. Install CPG collective stick (Task 11-2-15).

11. Remove sling assembly.



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END OF TASK

Section VII. MOORING

1-49. MOORING

1-50. INTRODUCTION

This section contains maintenance procedures for installing and removing covers and folding and unfolding main rotor blades, horizontal stabilizer, and fin. Standard torques are provided in Appendix P and TM 1-1500-204-23.

1-51. TASK LIST

The task list contains those tasks required to support unit level and intermediate level maintenance.

LIST OF TASKS

1-7-1. MOORING HELICOPTER — STANDARD SKID GEAR

This task covers: Mooring

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit

Material:
Jack Pad (2) (Loose Equipment)
Bolts (6) (Loose Equipment)
Washers (6) (Loose Equipment)
Mooring Chain (Loose Equipment)
Shackles (3) (Loose Equipment)
Bolts (3) (Loose Equipment)
Washers (6) (Loose Equipment)
Bushings (3) (Loose Equipment)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1520-248-S

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

1-7-1. MOORING HELICOPTER — STANDARD SKID GEAR (CONT)

PREPARE

1. If removed install two forward jack pad fittings (1) forward of landing gear crosstube as follows:

a. Place fittings (1) in position on helicopter mounting pads.

b. Secure each fitting (1) with three washers (2) and bolts (3).

2. Install shackles (4) on two forward jack pad fittings (1) and rear jack pad fitting (5) as follows (TM 1-1520-248-S):

a. Place shackles (4) in position on fittings (1 and 5).

b. Secure each shackle (4) with bolt (6), two washers (7), bushing (8), and nut (9).

MOOR

WARNING

To prevent injury to personnel, do not allow helicopter rotor to turn under engine power with fuselage tied down to the ground.

CAUTION

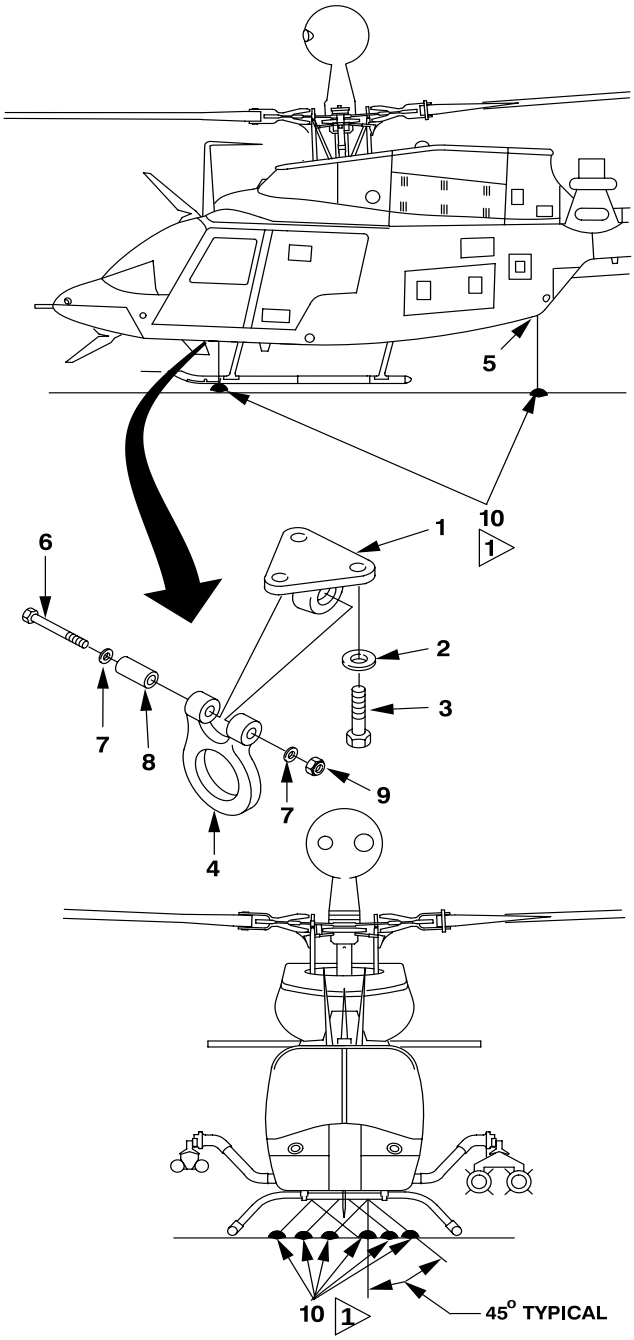
To prevent damage from flying objects, helicopter should be hangared or evacuated to a safe area when wind conditions above 50 knots are expected.

3. If paved ramp with suitable tiedown rings (10) is available, park helicopter on skid landing gear headed in direction from which highest velocity winds are expected.

4. Secure helicopter to ramp tiedown rings (10) at shackles (4) on helicopter jacking tiedown fittings (1 and 5).

5. If suitable ramp tiedowns are not available, park helicopter on skid landing gear on unpaved parking area headed in direction from which highest velocity winds are expected.

6. Use mooring anchor rods to make "dead man" anchors.



NOTE:

1 DO NOT PUT TENSION ON MOORING CHAINS, REMOVE SLACK ONLY.

406961-92
J1376

GO TO NEXT PAGE

1-7-1. MOORING HELICOPTER — STANDARD SKID GEAR (CONT)

7. Moor helicopter as described in step 4.

8. Secure main rotor with tiedowns (Task 1-7-4).

9. Install covers on pitot tube, engine exhaust, engine inlets, and mast mounted sight (Task 1-7-3).

10. Fill fuel tank to capacity with prescribed fuel (Tasks 1-4-1/1-4-2).

11. Secure all ground handling equipment.

END OF TASK

1-7-2. MOORING HELICOPTER — RAPID DEPLOYMENT SKID GEAR

This task covers: Mooring

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit

Material:
Jack Pad (2) (Loose Equipment)
Bolts (6) (Loose Equipment)
Washers (6) (Loose Equipment)
Mooring Chain (Loose Equipment)
Shackles (3) (Loose Equipment)
Bolts (3) (Loose Equipment)
Washers (6) (Loose Equipment)
Bushings (3) (Loose Equipment)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1520-248-S

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

1-7-2. MOORING HELICOPTER — RAPID DEPLOYMENT SKID GEAR (CONT)

PREPARE

1. If removed install two forward jack pad fittings (1) forward of landing gear crosstube as follows:

a. Place fittings (1) in position on helicopter mounting pads.

b. Secure each fitting (1) with three washers (2) and bolts (3).

2. Install shackles (4) on two forward jack pad fittings (1) and rear jack pad fitting (5) as follows (TM 1-1520-248-S):

a. Place shackles (4) in position on fittings (1 and 5).

b. Secure each shackle (4) with bolt (6), two washers (7), bushing (8), and nut (9).

MOOR

WARNING

To prevent injury to personnel, do not allow helicopter rotor to turn under engine power with fuselage tied down to the ground.

CAUTION

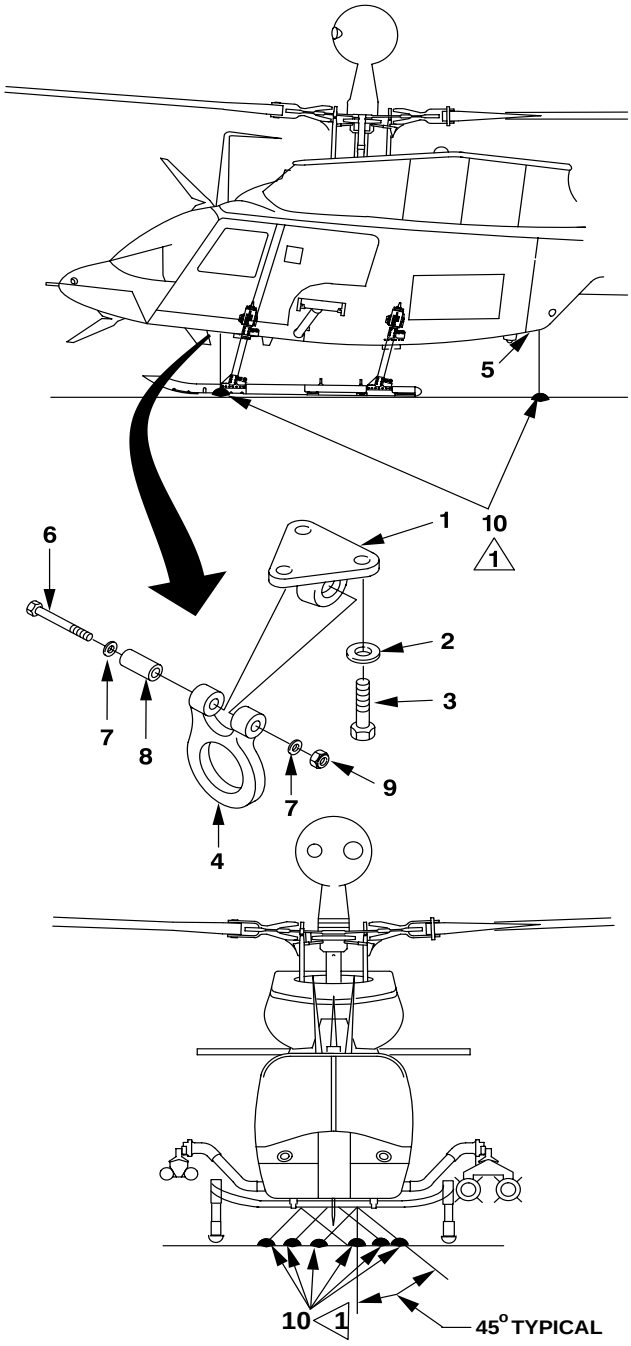
To prevent damage from flying objects, helicopter should be hangared or evacuated to a safe area when wind conditions above 50 knots are expected.

3. If paved ramp with suitable tiedown rings (10) is available, park helicopter on skid landing gear headed in direction from which highest velocity winds are expected.

4. Secure helicopter to ramp tiedown rings (10) at shackles (4) on helicopter jacking tiedown fittings (1 and 5).

5. If suitable ramp tiedowns are not available, park helicopter on skid landing gear on unpaved parking area headed in direction from which highest velocity winds are expected.

6. Use mooring anchor rods to make "dead man" anchors.



NOTE:

1 **DO NOT PUT TENSION ON MOORING CHAINS, REMOVE SLACK ONLY.**

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J1376

GO TO NEXT PAGE

1-7-2. MOORING HELICOPTER — RAPID DEPLOYMENT SKID GEAR (CONT)

7. Moor helicopter as described in step 4.

8. Secure main rotor with tiedowns (Task 1-7-4).

9. Install covers on pitot tube, engine exhaust, engine inlets, and mast mounted sight (Task 1-7-3).

10. Fill fuel tank to capacity with prescribed fuel (Tasks 1-4-1/1-4-2).

11. Secure all ground handling equipment.

END OF TASK

1-7-3. HELICOPTER COVERS — INSTALLATION

This task covers: Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Maintenance Stand (B162)
Engine Exhaust Cover (Loose Equipment)
Engine Inlet Covers (2) (Loose Equipment)
Pitot Cover (Loose Equipment)

Personnel Required:
67S Scout Helicopter Repairer (1)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

NOTE

Protective covers shall be installed at locations shown when helicopter is parked or moored.

1. Install engine exhaust cover (1) over the exhaust ejector. Slide cover (1) down until it bottoms out on the exhaust ejector.

2. Install engine inlet covers (2).

3. Install pitot cover (3).

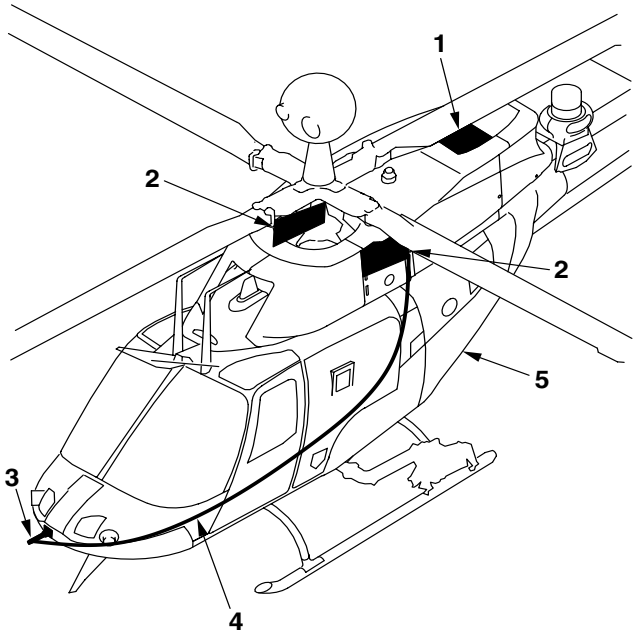
4. Extend lanyards (4) from pitot cover (3) along left and right side of fuselage and fasten to engine inlet covers (2).

CAUTION

To prevent damage to equipment deck or electronic and electrical equipment, care shall be taken to:

- Stow only lightweight equipment
- Not block cooling fans of avionics components
- Not stow anything with metal components that could damage/short electrical components
- Adequately secure all stowed equipment.

5. When not installed, stow protective covers in aft electrical compartment (5).



406961-95
J1376

END OF TASK

1-7-4. ROTOR TIEDOWNS — INSTALLATION/REMOVAL

This task covers: Installation and Removal (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Wand Assembly (Loose Equipment)
Sock Assemblies (4) (Loose Equipment)

Personnel Required:
67S Scout Helicopter Repairer (2)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

PREPARE

NOTE

- Tiedowns for main rotor blades consist of two FWD and two AFT blade socks. A wand assembly is provided as an aid to install the socks.
- Main rotor blades may be manually rotated clockwise or counterclockwise to position blade for tiedown.

1. Position blades (1) at 45-degree angle to fuselage so tiedown lines (2) can be secured.

2. Unfold wand assembly (3) as follows:

a. Unwind strap (4) holding spreader arms (5) against upper tube (6).

b. Unlock lock (7) and rotate lower tube (8) 180 degrees.

c. Slide lock (7) down upper tube (6) and engage lower tube (8).

d. Lock wand assembly (3) in extended position.

INSTALL

3. Install FWD BLADES sock (9) on wand assembly (3) as follows: (Detail B).

a. Open spreader arms (5).

b. Spring spreader arms (5) toward each other and insert spreader arm guides (10) into grommets (11) of FWD BLADES sock (9).

NOTE

Rings are preadjusted to give forward and aft blades moderate tension when secured.

c. Each tiedown line (2) for forward blades has ring (12) near end with flag labeled FWD BLADES.

d. Each tiedown line (2) for aft blades has ring (13) near end with flag labeled AFT BLADES.

e. With FWD BLADES sock (9) secured to wand assembly (3), install sock on end of a forward blade.

f. Remove wand assembly (3) from FWD BLADES sock (9) by pulling downward. Extend tiedown line (2) to forward end of skid. Pass snap hook (14) through tow bar ring (15) and snap to FWD BLADES ring (12).

g. Secure opposite forward blade in same manner.

4. Install socks on aft main rotor blades as follows:

a. With AFT BLADES sock (16) secured to wand assembly (3) install sock on end of an aft blade.

b. Remove wand assembly (3) from AFT BLADES sock (16) by pulling downward.

GO TO NEXT PAGE

1-7-4. ROTOR TIEDOWNS — INSTALLATION/REMOVAL (CONT)

c. Extend tiedown line (2) to aft crosstube (17) of skid gear. Pass snap hook (14) around crosstube (17) and snap to AFT BLADES ring (13).

d. Secure opposite aft blade in same manner.

5. Secure tail rotor blade to vertical fin with blade strap (18).

REMOVE

6. Remove socks (9 and 16) from forward and aft blades as follows:

a. Unsnap snap hooks (14) and free tiedown lines (2) from tow bar rings (15) and aft crosstube (17).

b. Open sock removal hook (19) on bottom of wand lower tube (8).

c. Engage sock removal hook (19) with sock removal loop (20) and remove socks (9 and 16).

7. Remove blade strap (18) from vertical fin to free tail rotor blade.

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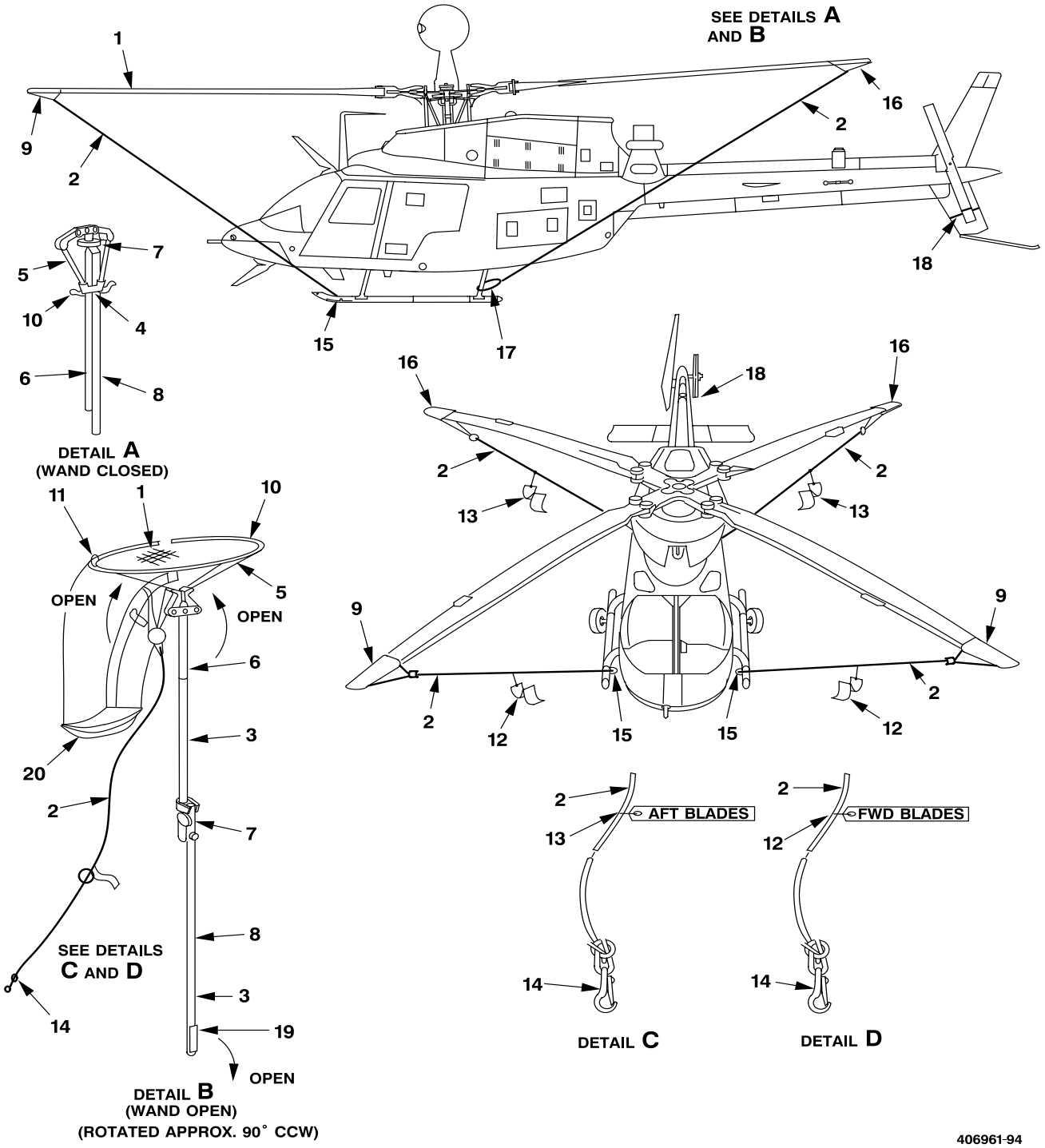
1-7-4. ROTOR TIEDOWNS — INSTALLATION/REMOVAL (CONT)



ROTOR TIEDOWNS

END OF TASK

1-7-5. MAIN ROTOR BLADES — FOLDING/UNFOLDING (STANDARD METHOD)

This task covers: Folding and Unfolding Main Rotor Blades (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (2) (B162)
Wand Assembly (Loose Equipment)
Main Rotor Blade Folding Kit (B82)

Material:
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

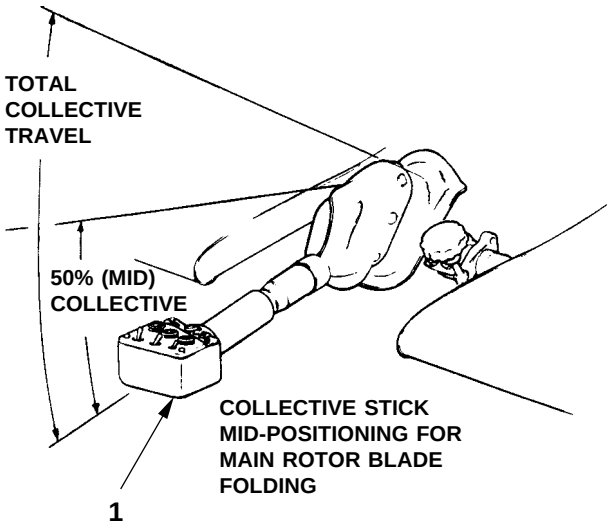
PREPARE

1. Place maintenance stand (B162) at both sides of helicopter.

2. Place pilot collective stick (1) at mid-position point. Collective stick should not be frictioned unless it is absolutely necessary to hold collective in place and then only with light friction.

NOTE

The CPG cyclic may be disengaged at this time to prevent using it to make flight control adjustments during blade folding procedures.



406001-267
H1329

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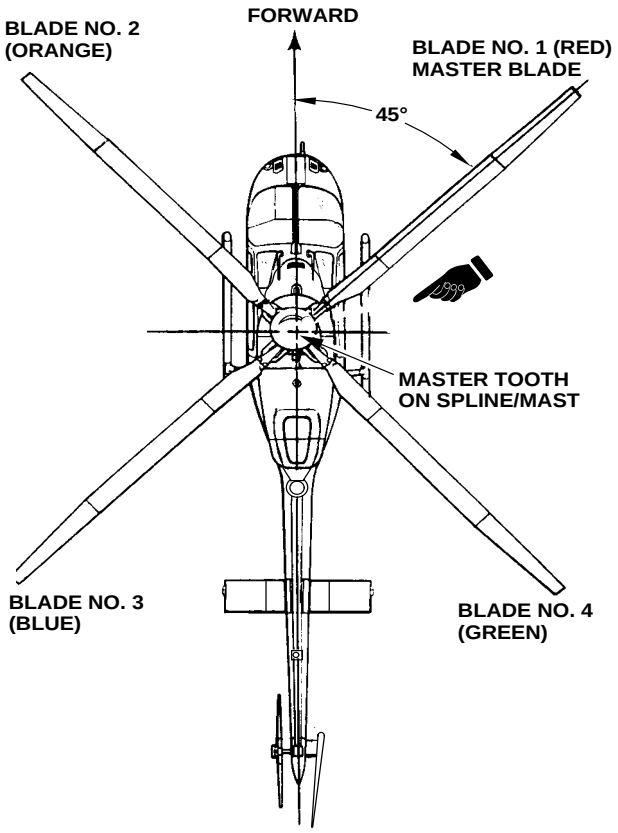
1-7-5. MAIN ROTOR BLADES — FOLDING/UNFOLDING (STANDARD METHOD) (CONT)

NOTE

Wand assembly may be used for rotating blades (Task 1-7-4). Blades may be rotated clockwise or counterclockwise for positioning.

3. Rotate blades to allow the red (master) blade No. 1 to be 45 degrees to right of helicopter centerline.



PROPER ORIENTATION OF MAIN ROTOR BLADES FOR FOLDING

406010-304
J2105

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INSTALL BLADE FOLDING RACK

4. Remove three screws (2) from each side of tailboom.

5. Install blade folding mounting brackets (3) on each side of tailboom.

WARNING

To avoid hand injury, care shall be exercised while handling blade folding rack.

CAUTION

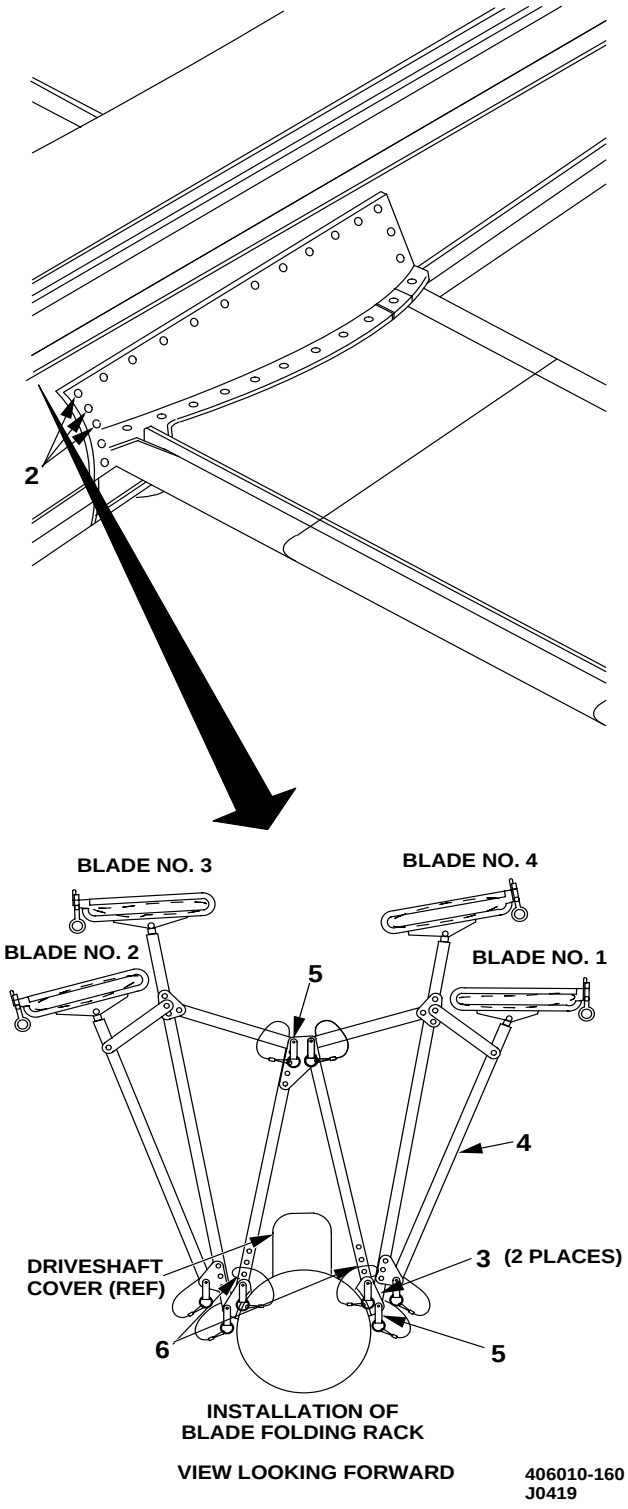
Blade folding rack shall not be allowed to contact or damage tailboom or horizontal stabilizer during installation.

NOTE

The left side of the blade folding rack is identified with black stencil lettering.

6. Install blade folding rack (4) on mounting bracket (3) using quick-disconnect pins (5).

7. Stow removed screws (2) in six rivnuts (6) on blade rack.



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ADJUST PITCH LOCK ASSEMBLIES

8. Install pin (7) in scissor (8).

9. Screw nut (9) onto rod end assembly (10).

10. Insert rod end assembly (10) through pin (7).

11. Screw nut (11) onto rod end assembly (10).

12. Position scissor (12) onto scissor (8) and secure with bolt (13), washer (14), and nut (15). Tighten nut (15) to allow **0.010 to 0.020 inch** between bolt (13) and scissor (12).

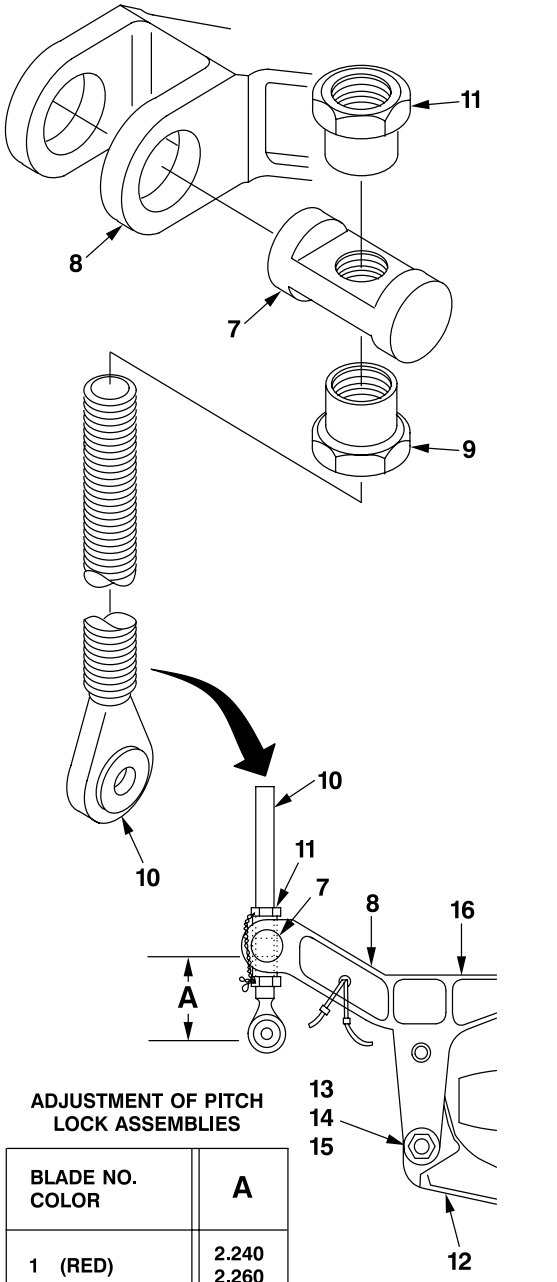
13. Adjust pitch lock assemblies (p/o B82) (16) per color code to applicable blade.

14. After adjustment of pitch lock assemblies (p/o B82) (16), secure nuts (9 and 11) with lockwire (D132).

NOTE

If P/N T101828-105 blade rack assembly is being used, pitch lock assemblies shall be set at the following dimensions (in inches):

BLADE NO. COLOR	A
1 (RED)	1.660 - 1.680
2 (ORANGE)	3.830 - 3.850
3 (BLUE)	3.990 - 4.010
4 (GREEN)	1.860 - 1.880



ADJUSTMENT OF PITCH LOCK ASSEMBLIES

BLADE NO. COLOR	A
1 (RED)	2.240 2.260
2 (ORANGE)	3.690 3.710
3 (BLUE)	3.990 4.010
4 (GREEN)	2.420 2.440

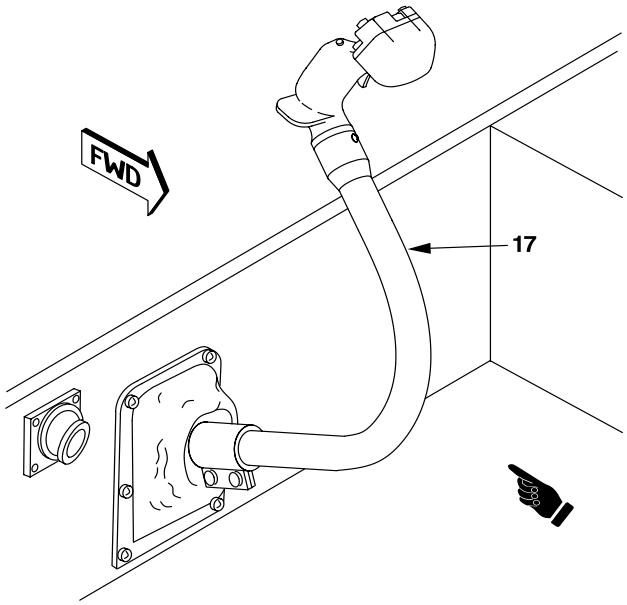
406010-161
J2317

GO TO NEXT PAGE

FOLD MAIN ROTOR BLADES

CAUTION

- To prevent damage to the main rotor blades and yoke assembly during blade folding procedure, blades, in particular the orange blade, shall not come in contact with the main rotor yoke assembly.
- To prevent damage to the flight controls, unnecessary force shall not be applied to pilot cyclic or collective stick during blade folding procedure.
- To prevent damage to flight controls, CPG cyclic or collective stick shall not be used to make adjustments during blade folding operations.
- To prevent overloading swashplate arms during blade folding, pitch locks shall be engaged as specified.
- After rotors have been aligned and the blade folding rack is installed, the rotors should not be rotated from this position, since interference between blade and yoke will occur during folding of blades No. 1 and 2.



406010-217
J2317

15. Place pilot cyclic control stick (17) as required to engage pitch lock assemblies (p/o B82) to main rotor pitch change horn.

GO TO NEXT PAGE

CAUTION

To prevent damage to pitch links, pitch links shall not be adjusted while installing pitch lock assemblies (p/o B82). Pitch lock assembly color shall match color of corresponding blade.

NOTE

It may be necessary to move the cockpit controls (pilot cyclic and collective) slightly to connect the pitch lock assemblies (p/o B82).

16. Install pitch lock assemblies (p/o B82) (16) per applicable color between yoke support plates (18 and 19) and blade pitch horns (20) as follows:

a. Place scissor (8) in position on upper support plate (18) and connect rod end (10) to pitch horn (20).

NOTE

Slot allows freedom to install over pin in plate.

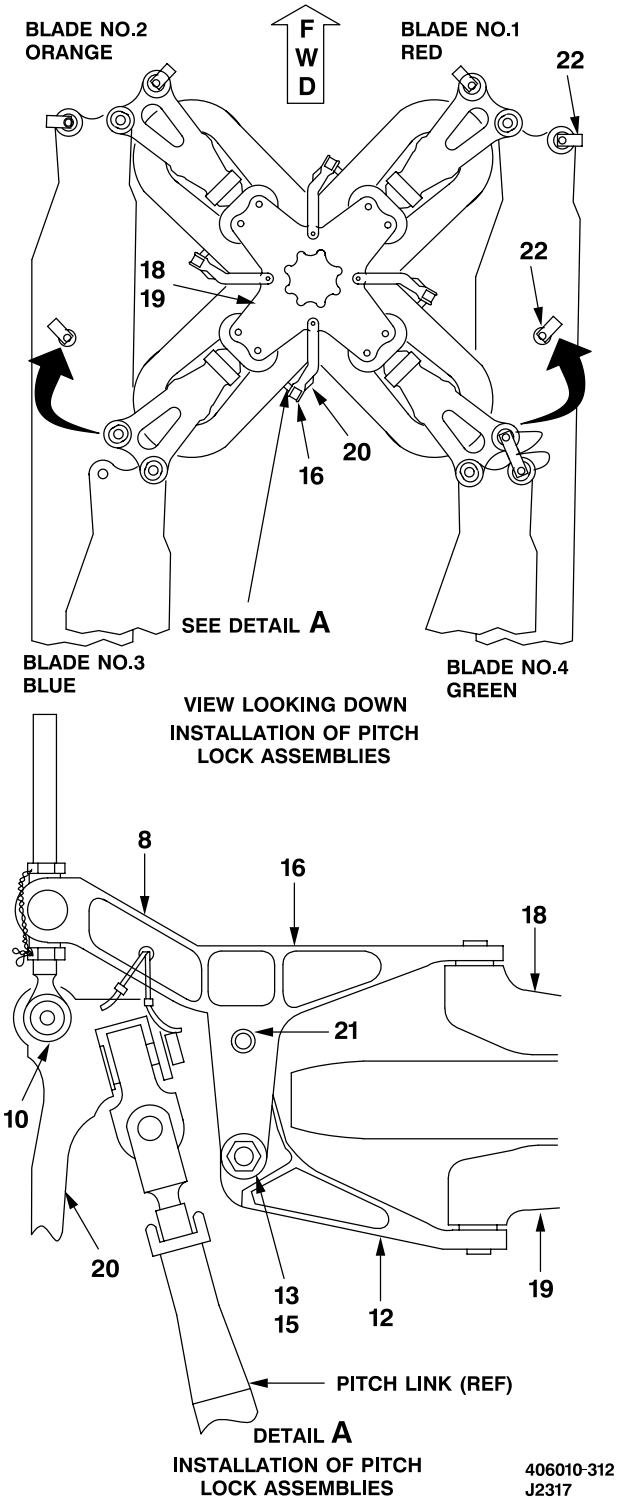
b. Place scissor (12) on lower support plate (19) and connect to scissor (8) using quick-release pin (21). Tighten nut (15) to allow **0.010 to 0.020 inch** between bolt (13) and scissor (12).

17. Remove expandable bolt (22) on blade No. 4.

CAUTION

To prevent excessive loading of blade grips and pitch horns, blades shall not be allowed to fall below or rise above blade rack height during blade folding.

18. Using wand assembly, move blade aft. Stow and secure blade in uppermost rack on right side. Expandable bolt (22) that was removed will be stowed in blade hole of No. 1 blade.



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NOTE

As each blade is positioned to the aft position and stowed in the blade rack, it should be secured in the rack. This will keep the rotor from rotating during folding of the remaining blades.

19. Install link (p/o B82) (23) connecting blade No. 4 to grip (24).

20. Remove expandable bolt (25) on blade No. 3.

21. Rotate blade aft, stow and secure in upper rack on left side. Expandable bolt (25) that was removed will be stowed in blade hole of blade No. 2.

22. Remove expandable bolt (26) on blade No. 1 and fold blade toward tail.

23. As blade is swung aft ensure blade No. 1 passes under and clears grip (24) on blade No. 4 (leading edge up). Stow and secure blade in lower rack on right side. Expandable bolt (26) that was removed will be stowed in grip hole of blade No. 1.

24. Fold blade No. 2 similar to blade No. 1.

25. As blade is swung aft ensure blade No. 2 passes under and clears grip (24) on blade No. 3 (leading edge down). Stow expandable bolt (27) in grip hole of blade No. 2.

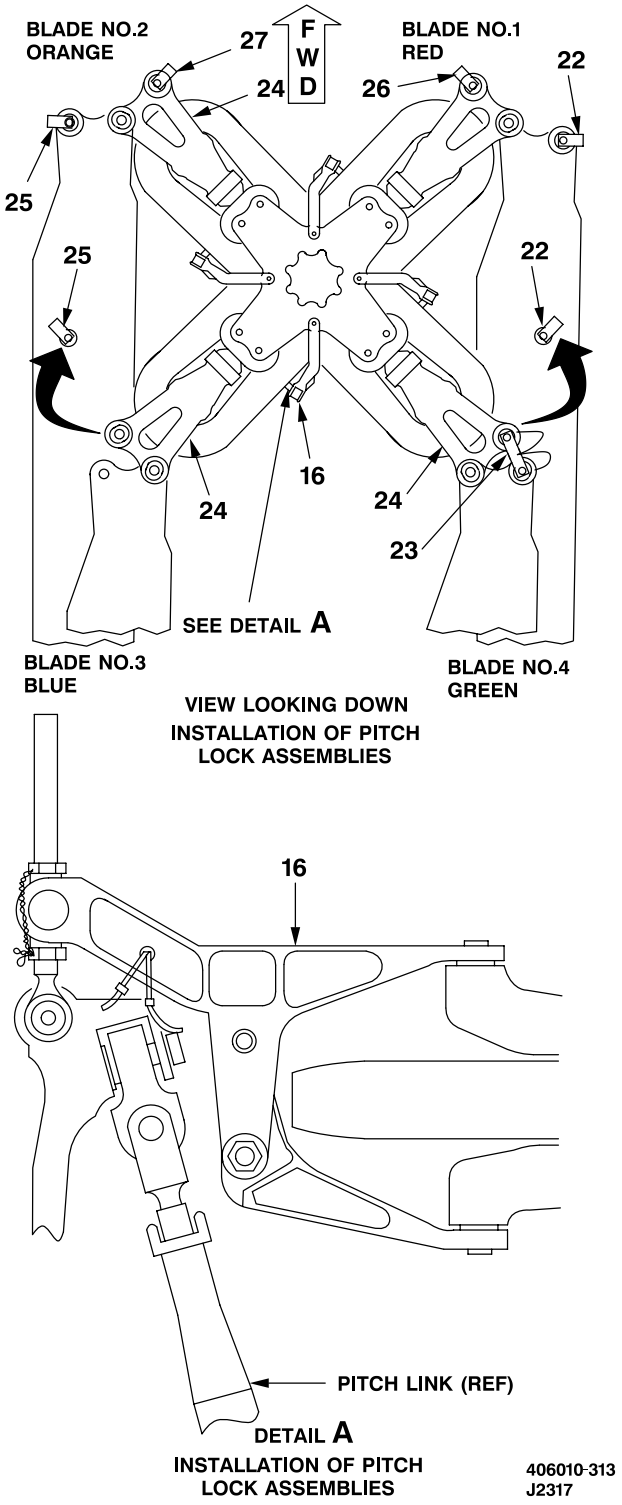
26. Ensure all blades are secured to tailboom rack and main rotor blade expandable bolts (22, 25, 26, and 27) are secured in two forward blade holes and grips (24).

UNFOLD MAIN ROTOR BLADES

27. Maintain the pitch lock assemblies (16) in installed position.

28. Remove expandable bolts (22, 25, 26, and 27) from grips (24) and blades.

29. Remove blade No. 1 from tailboom rack and rotate and install in grip (24) with proper color-coded expandable bolt (26). Ensure blade clears grip (24) on blade No. 4 during unfolding.



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1-7-5. MAIN ROTOR BLADES — FOLDING/UNFOLDING (STANDARD METHOD) (CONT)

30. Remove blade No. 2 from blade folding rack (4) and rotate and install in grip (24) with proper color-coded expandable bolt (27). Ensure blade clears grip (24) on blade No. 3 during unfolding.

31. Unfold blade No. 3 and install in grip (24) with proper color-coded expandable bolt (25).

32. Remove link (23) connecting blade No. 4 to grip (24). Unfold blade No. 4 and install in grip (24) with proper color-coded expandable bolt (22).

33. Remove pitch lock assemblies (16) and stow.

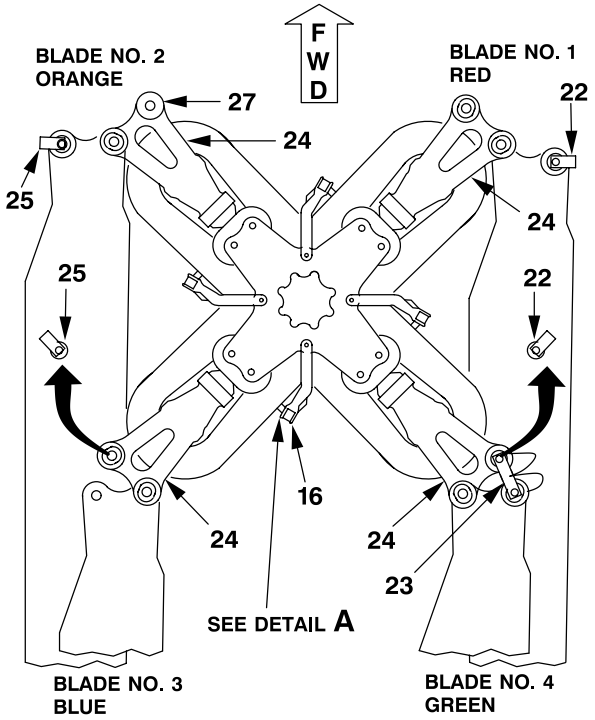
34. Remove blade folding rack (4) and stow. Reinstall screws in tailboom.

INSPECT

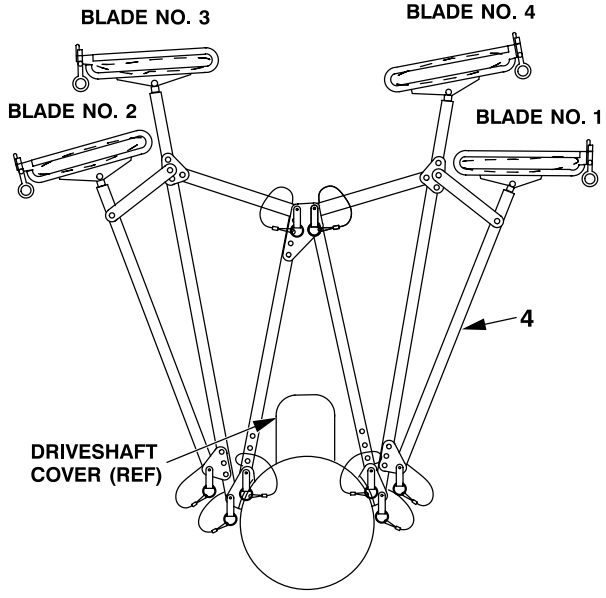
35. Inspect main rotor for removal of main rotor pitch locks.

36. Remove maintenance stands from around helicopter.

37. Inspect tailboom for proper installation of removed screws.



INSTALLATION OF PITCH LOCK ASSEMBLY



INSTALLATION OF BLADE FOLDING RACK VIEW LOOKING FORWARD

406010-314
J2317

END OF TASK

1-7-6. MAIN ROTOR BLADES — FOLDING/UNFOLDING (ALTERNATE METHOD)

This task covers: Alternate Method Folding and Unfolding Two Main Rotor Blades (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (2) (B162)
Wand Assembly (Loose Equipment)
Main Rotor Folding Kit (B82)

Material:
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

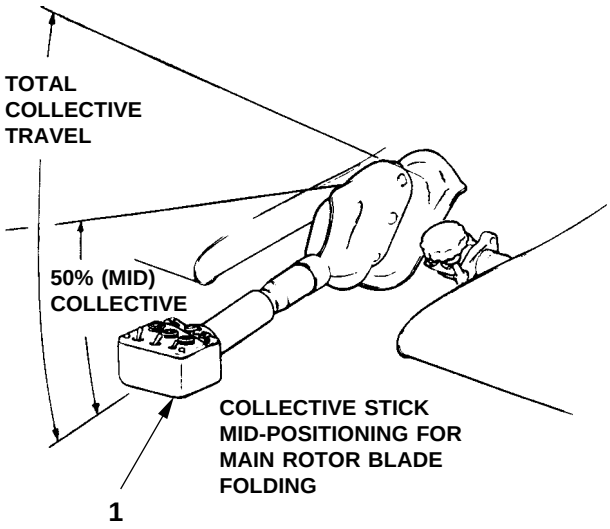
PREPARE

1. Place maintenance stand (B162) at both sides of helicopter.

2. Place pilot collective stick (1) at mid-position point. Collective stick should not be frictioned unless it is absolutely necessary to hold collective in place and then only with light friction.

NOTE

The CPG cyclic may be disengaged at this time to prevent using it to make flight control adjustments during blade folding procedures.



406001-267
H1329

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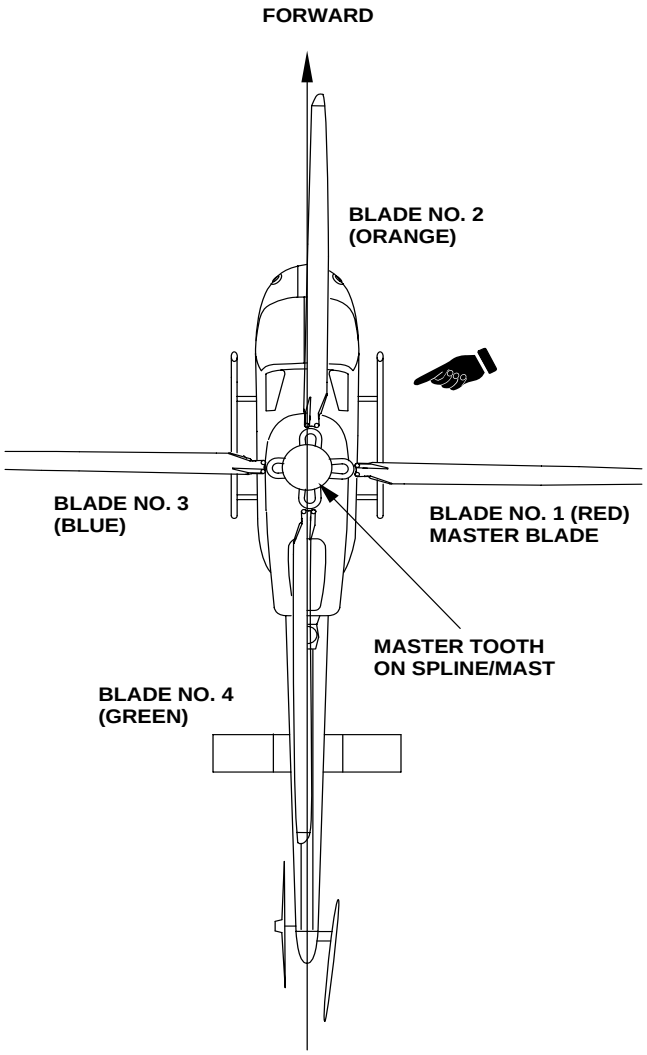
1-7-6. MAIN ROTOR BLADES — FOLDING/UNFOLDING (ALTERNATE METHOD) (CONT)

NOTE

Wand assembly may be used for rotating blades (Task 1-7-4). Blades may be rotated clockwise or counterclockwise for positioning orange blade forward and green blade aft.

3. Rotate blades to allow the red (master) blade No. 1 to be 90 degrees to right of helicopter.

4. Secure forward (orange) No. 2 blade and aft (green) No. 4 blade with tiedowns.



PROPER ORIENTATION OF MAIN ROTOR BLADES FOR ALTERNATE FOLDING

406010-516
J0419

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INSTALL BLADE FOLDING RACK

5. Remove three screws (2) from each side of tailboom.

6. Install blade folding mounting brackets (3) on each side of tailboom.

WARNING

To avoid hand injury, care shall be exercised while handling blade folding rack.

CAUTION

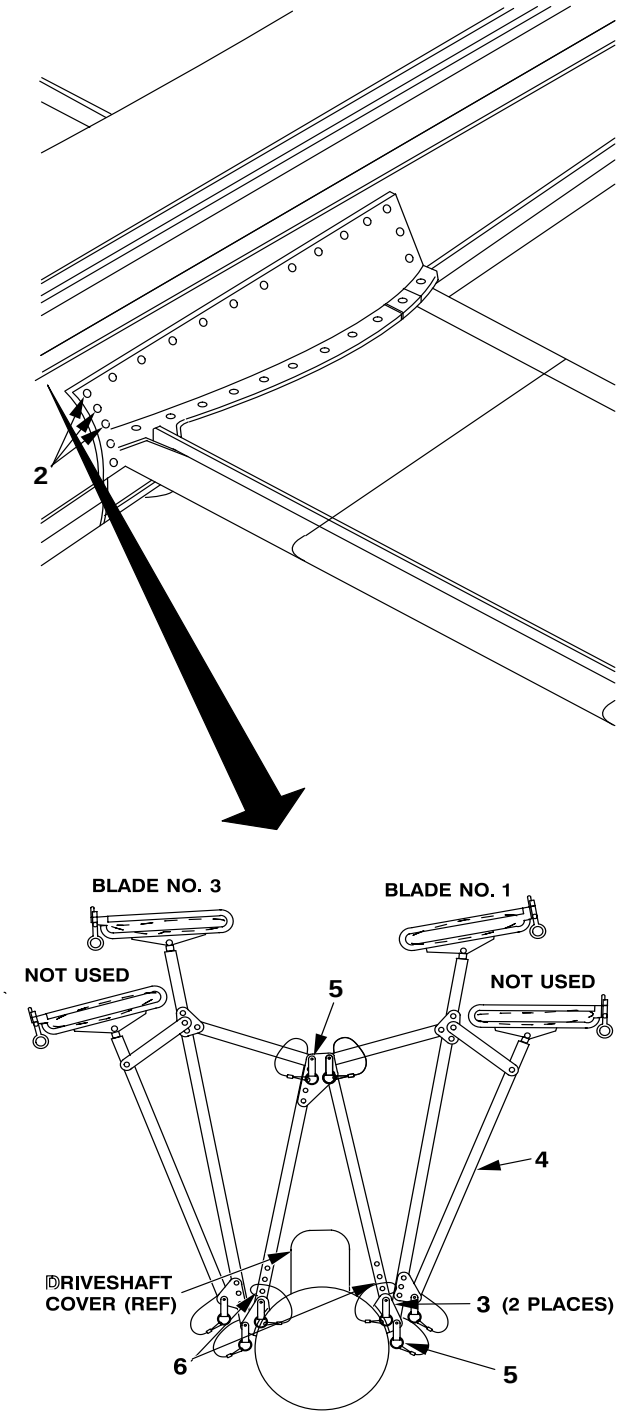
Blade folding rack shall not be allowed to contact or damage tailboom or horizontal stabilizer during installation.

NOTE

The left side of the blade folding rack is identified with black stencil lettering.

7. Install blade folding rack (4) on mounting bracket (3) using quick-disconnect pins (5).

8. Stow removed screws (2) in six rivnuts (6) on blade rack.



INSTALLATION OF BLADE FOLDING RACK FOR ALTERNATE BLADE FOLDING
VIEW LOOKING FORWARD
406010-514
J0419

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ADJUST PITCH LOCK ASSEMBLIES

NOTE

If pitch lock assemblies have been previously adjusted for normal blade folding, no further adjustment is required. Proceed to step 17. If adjustment is required for red (master) blade number (1) and blue blade No. 3, proceed with following steps.

9. Install pin (7) in scissor (8).

10. Screw nut (9) onto rod end assembly (10).

11. Insert rod end assembly (10) through pin (7).

12. Screw nut (11) onto rod assembly (10).

13. Position scissor (12) onto scissor (8) and secure with bolt (13), washer (14), and nut (15).

14. Tighten nut (15) to allow **0.010 to 0.020 inch** between bolt (13) and scissor (12).

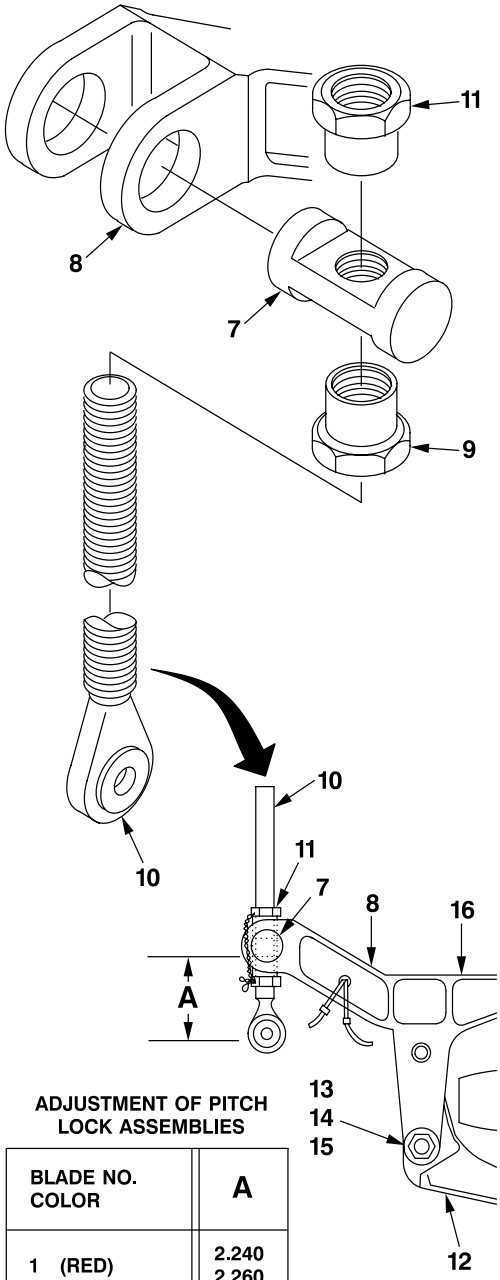
15. Adjust pitch lock assemblies (p/o B82) (16) per color code to applicable blade.

16. After adjustment of pitch lock assemblies (p/o B82) (16), secure nuts (9 and 11) with lockwire (D132).

NOTE

If T101828-105 blade rack assembly is being used, pitch lock assemblies shall be adjusted to following dimensions (in inches):

BLADE NO. COLOR	A
1 (RED)	1.660 - 1.680
3 (BLUE)	3.990 - 4.010



ADJUSTMENT OF PITCH LOCK ASSEMBLIES

BLADE NO. COLOR	A
1 (RED)	2.240 2.260
3 (BLUE)	3.990 4.010

406010-517
J2317

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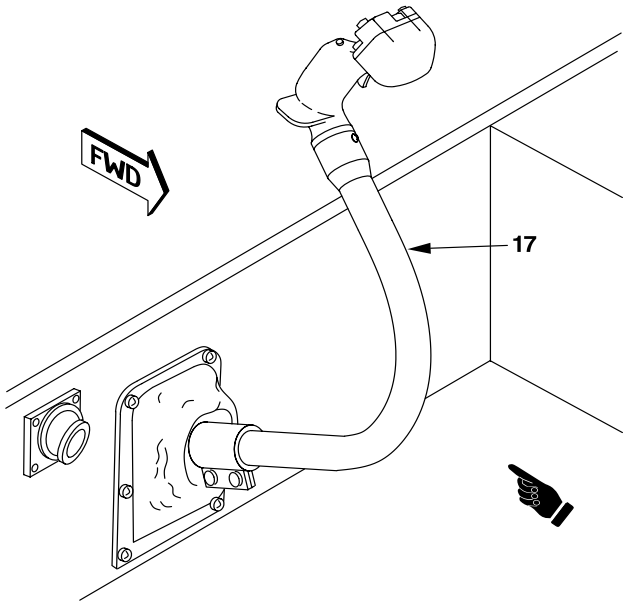
FOLD MAIN ROTOR BLADES

CAUTION

- To prevent damage to the main rotor blades and yoke assembly during blade folding procedure, blades, in particular the orange blade, shall not come in contact with the main rotor yoke assembly.
- To prevent damage to the flight controls, excessive force shall not be applied to the cyclic or collective stick during blade folding procedure.
- To prevent damage to flight controls, CPG cyclic or collective stick shall not be used to make adjustments during blade folding operations.
- To prevent damage to swashplate arms by overloading during folding, pitch locks shall be engaged as specified.
- After rotors have been aligned and the blade folding rack installed, rotors should not be rotated.



406010-217
J2317

17. Place pilot cyclic control stick (17) as required to engage pitch lock assemblies (p/o B82) to main rotor pitch change horn.

GO TO NEXT PAGE

CAUTION

To prevent damage to pitch links, pitch links shall not be adjusted while installing pitch lock assemblies (p/o B82). Pitch lock assembly color shall match color of corresponding blade.

NOTE

It may be necessary to move cockpit controls (pilot cyclic and collective) slightly to connect pitch lock assemblies (p/o B82).

18. Install pitch lock assemblies (p/o B82) (16) per applicable color between yoke support plates (18 and 19) and blade pitch horns (20) as follows:

a. Place scissor (8) in position on upper support plate (18) and connect rod end (10) to pitch horn (20).

NOTE

Slot allows freedom to install over pin in plate.

b. Place scissor (12) on lower support plate (19) and connect to scissor (8) using quick-release pin (21).

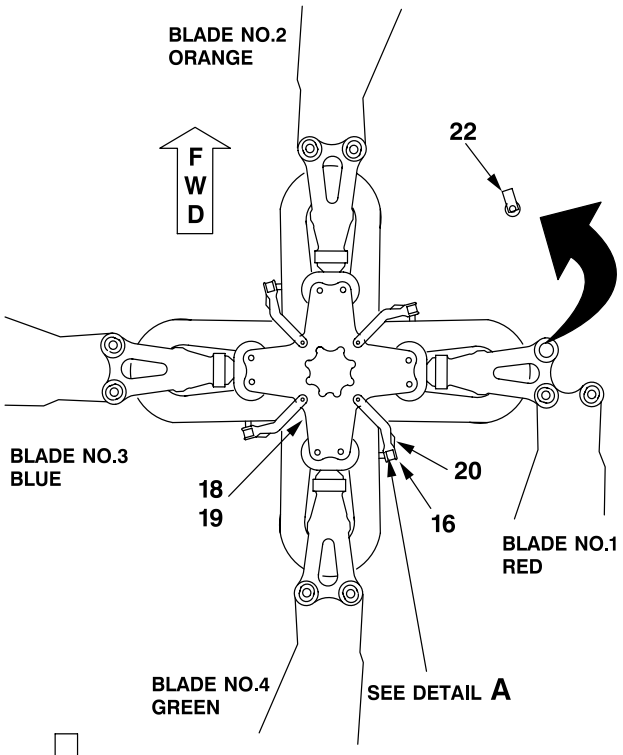
c. Ensure **0.010 to 0.020 inch** clearance between bolt (13) and scissor (12) (step 14).

19. Remove expandable bolt (22) on blade No. 1.

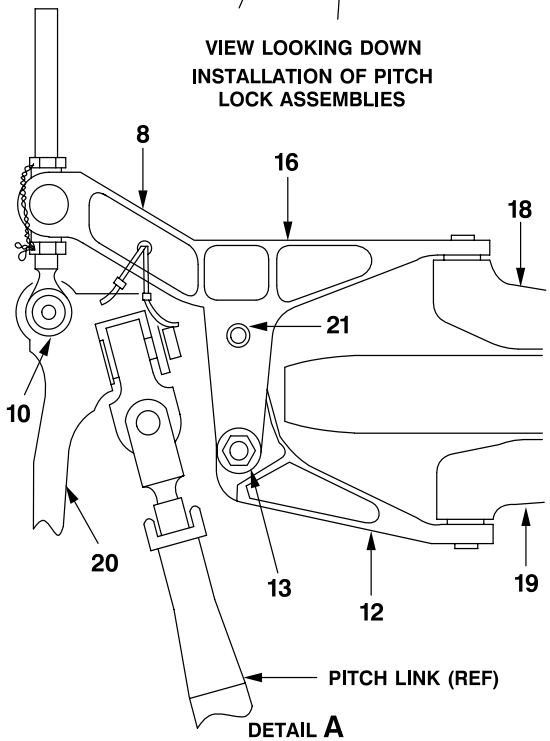
CAUTION

To prevent excessive loading of blade grips and pitch horns during folding process, blades shall not be allowed to fall or rise above blade track height during blade folding.

20. Using wand assembly, move blade aft. Stow and secure blade in the uppermost rack on the right side. Expandable bolt that was removed will be stowed in the blade hole of the No. 1 blade.



VIEW LOOKING DOWN
INSTALLATION OF PITCH
LOCK ASSEMBLIES



INSTALLATION OF PITCH
LOCK ASSEMBLIES

406010-519
J2317

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NOTE

As each blade is positioned to the aft position and stowed in the blade rack, it should be secured in the rack. This will keep the rotor from rotating during folding of remaining blades.

21. Remove expandable bolt (25) on blade No. 3.

22. Rotate blade aft, stow and secure in the upper rack on the left side. Stow expandable bolt (25) in blade hole of blade No. 3.

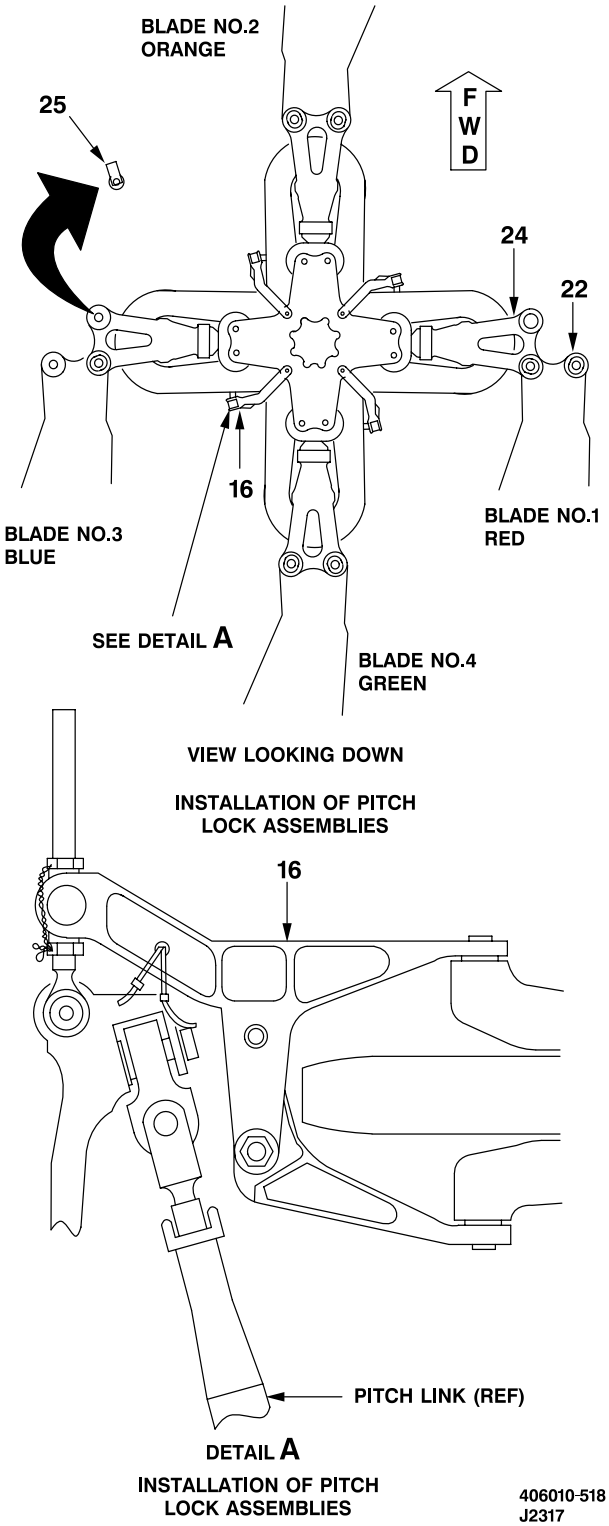
23. Ensure both blades are secured to blade folding rack and main rotor blade expandable bolts are secured in blade holes.

UNFOLD BLADES

24. Maintain pitch locks (16) in the installed position.

25. Remove expandable bolts (22 and 25) from blades.

26. Remove blade No. 1 from blade folding rack and rotate and install in grip (24) with proper color-coded expandable bolt (22).



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27. Unfold blade No. 3 and install in grip (24) with proper color-coded expandable bolt (25).

28. Remove pitch lock assemblies (16) and stow.

CAUTION

To prevent damage to tailboom while blade folding rack (4) is being removed, blade folding rack shall be supported while removing screws (2).

29. Remove quick-disconnect pins (5) securing blade folding rack (4).

30. Remove blade folding rack (4) from blade folding mounting brackets (3).

31. Remove blade folding mounting brackets (3) from tailboom.

32. Remove screws (2) stowed in rivnuts (6) on blade folding rack (4).

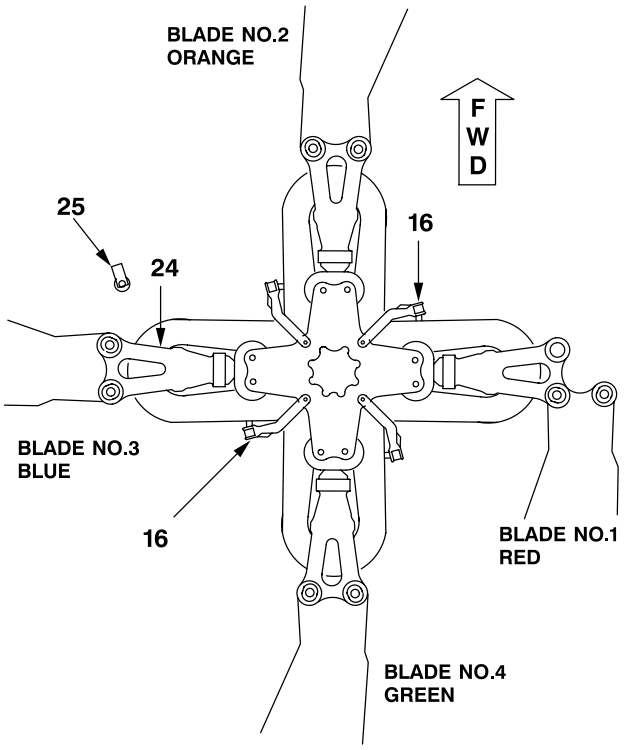
33. Install six screws (2) in tailboom.

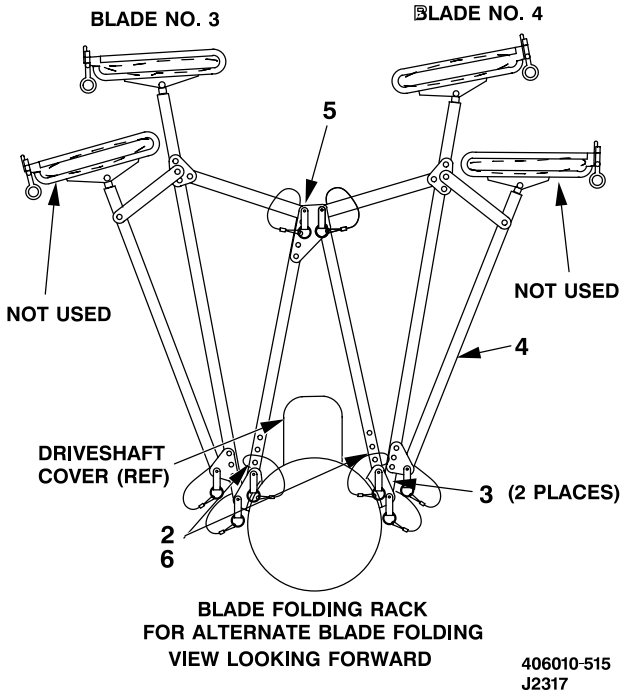
INSPECT

29. Inspect main rotor for removal of main rotor pitch locks.

30. Remove maintenance stands from around helicopter.

31. Inspect tailboom for proper installation of removed screws.





END OF TASK

1-7-7. HORIZONTAL STABILIZER — FOLDING/UNFOLDING

This task covers: Folding and Unfolding for Rapid Deployment (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

FOLD

1. Release pins (1 and 2) on lower side of fittings (3).

2. Remove pins (1 and 2) from fittings (3).

NOTE

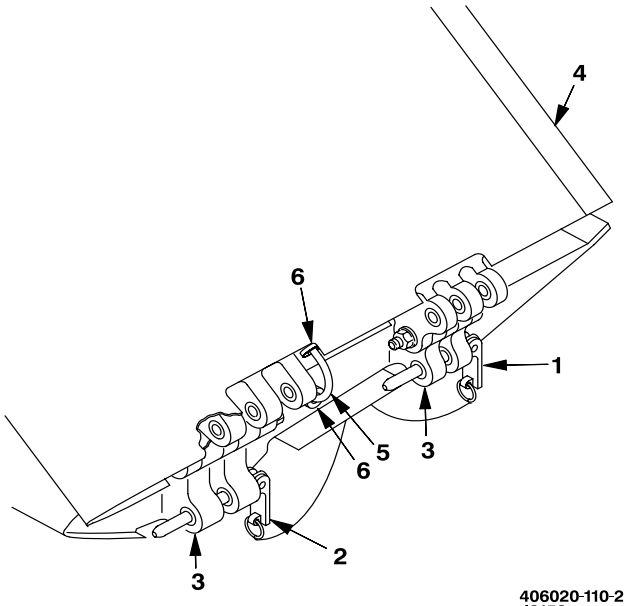
When raising outboard portion of stabilizer (4), observation shall be made for strain on electrical wire (5) passing through grommets (6) in stabilizer.

3. Raise outboard portion of stabilizer (4).

4. Repeat steps 1. through 3. for stabilizer on opposite side of tailboom.

5. Pad and secure outboard portions of stabilizer (4) in raised position.

6. Insert pins (1 and 2) in fittings (3) for storage.



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UNFOLD

7. Remove pins (1 and 2) from fittings (3).

8. Remove pad and lower outboard portions of stabilizer (4).

9. Align pin holes in fittings (3) and insert pins (1 and 2).

10. Close latch on pins (1 and 2) to secure in place.

INSPECT

END OF TASK

1-7-8. FIN — STOWING/UNSTOWING

This task covers: Stowing and Unstowing Fin for Deployment (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Bolt NAS6604-28 (Loose Equipment)
Washer 140-007-17-17C3 (Loose Equipment)
Torque Wrench (B237)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

FOLD

WARNING

To prevent injury to personnel, fin shall be supported during stowing/unstowing operations.

CAUTION

- To prevent damage to blades and/or fin, main rotor blades shall not be rotated while fin is in stowed position.
- To prevent damage to antenna leads, antenna leads (ref) from fin connectors shall be disconnected prior to rotating fin to stowed position.

1. Disconnect antenna leads (ref) from fin connectors.

NOTE

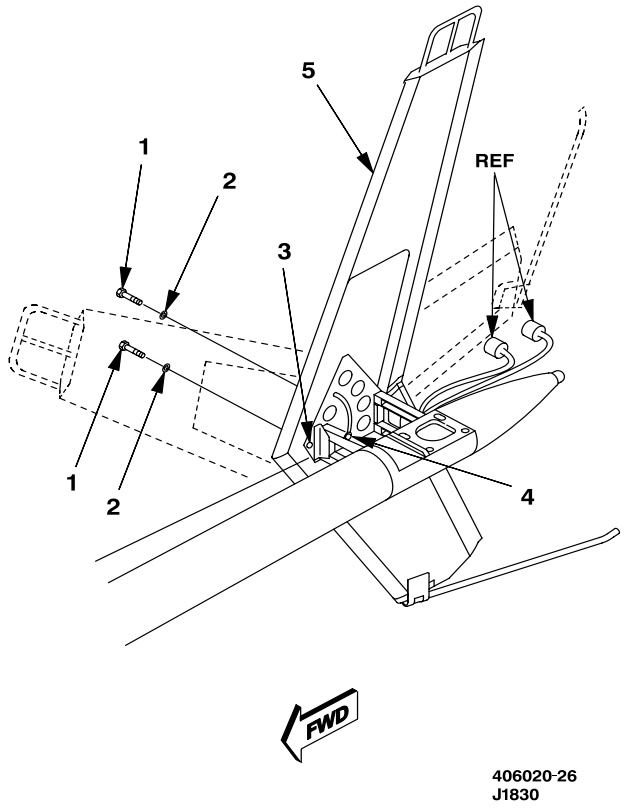
Bolts (1) and washers (2) removed during stowing procedures should be retained to complete fin installation prior to flight.

2. Remove four bolts (1) with washers (2)

NOTE

Loosening pivot bolt (3) and travel stop bolt (4) is not required for fin rotation.

3. Rotate fin (5) forward to maximum position and align stowage hole in fin (5) with aft mount bolt hole.



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1-7-8. FIN — STOWING/UNSTOWING (CONT)

NOTE

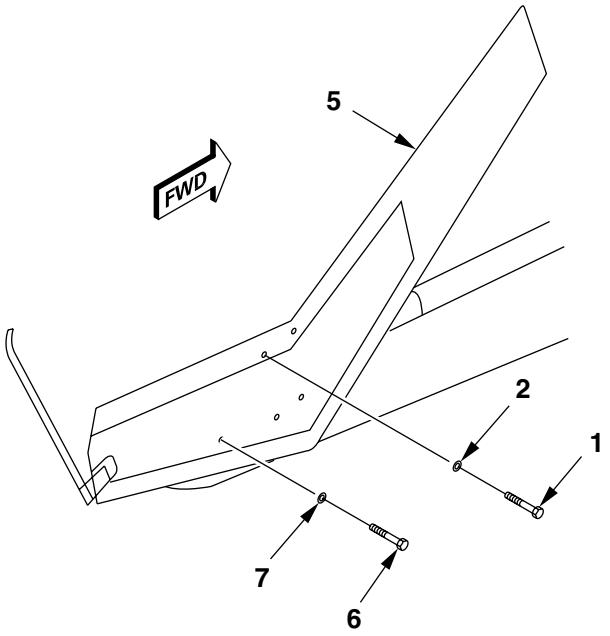
Bolt (6) (NAS6604-28) and washer (7) (140-007-17-17C3) used to secure fin in folded position are loose equipment items. If bolt (6) and washer (7) are not available, bolt (1) and washer (2) may be used.

4. Install bolts (1 and 6) with washers (2 and 7).

UNFOLD

5. Remove bolt (6) with washer (7).

6. Remove bolt (1) with washer (2) from stowed fin (5).



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NOTE

Loosening pivot bolt (3) and travel stop bolt (4) is not required for fin (5) rotation.

7. Rotate fin (5) to aft maximum position.

NOTE

Bolts (1) and washers (2) that were retained during stowing procedures are required to complete fin installation prior to flight.

8. Install four bolts (1) with washers (2) to secure fin (5) to support assembly. Torque bolts (1) **60 TO 80 INCH-POUNDS**.

NOTE

Antenna leads to fin (5) connectors shall be reconnected after rotating fin to flight position or antenna will be inoperative.

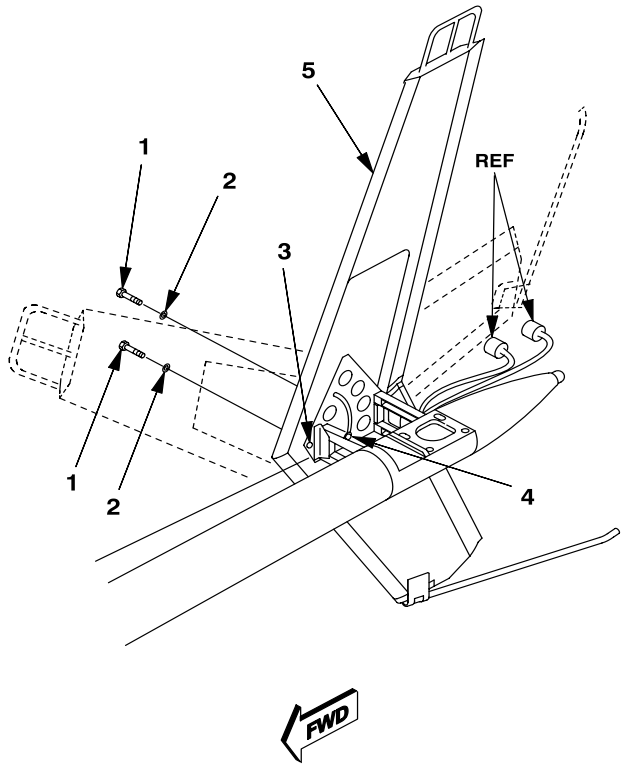
9. Reconnect antenna leads to fin (5) connectors.

NOTE

Conditions which may affect resistance of electrical bond are dirt, grease, paint, and corrosion.

10. Inspect mating surfaces between fin (5) and support assembly for conditions which may affect Class S electrical bond joint.

11. Repair any damage and prepare mating surfaces for Class S electrical bond per Appendix M.



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INSPECT

FOLLOW-ON MAINTENANCE

MOC Radios (TM 11-1520-248-23).

Store bolt (6) and washer (7) with loose equipment.

END OF TASK

Section VIII. HOISTING AND SLING LOADING

1-52. HOISTING AND SLING LOADING

1-53. INTRODUCTION

This section contains maintenance procedures for hoisting and sling loading the helicopter. Standard torques are provided in Appendix P and TM 1-1500-204-23.

1-54. TASK LIST

The task list contains those tasks required to support unit and intermediate level maintenance.

CAUTION

To prevent airframe structural damage when jacking or hoisting helicopter, ensure all stress panels are installed prior to start of operation.

LIST OF TASKS

1-8-1. HOISTING HELICOPTER — MAST REMOVED

This task covers: Hoisting

INITIAL SETUP

Applicable Configurations:
All

Tools:
Torque Wrench (B240)
Suitable Hoist (B69)
Lift Plate (B104)
Rope (B118)
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer (3)

References:
TM 9-1240-778-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Electrical Power Removed (Tasks 1-6-5 and 1-6-6)
Mast Mounted Sight Removed (TM 9-1240-778-23)
Main Rotor Hub and Blade Assembly Removed (Task 5-1-1)
Main Rotor Mast Assembly Removed (Task 6-4-15)

GO TO NEXT PAGE

1-8-1. HOISTING HELICOPTER — MAST REMOVED (CONT)

1. Install lift plate (1) on transmission using 12 mast mounting nuts (2).

2. Torque nuts (1) **100 TO 140 INCH-POUNDS**.

3. Connect hoisting shackle or cable (3) to eye of lift plate (1) and take up slack.

NOTE

If lifting beyond reach from ground, a steadying rope shall be tied around tailboom.

4. Station person at tail skid to steady helicopter when hoisted.

WARNING

To prevent injury to personnel or damage to equipment, hoist and cable shall be capable of handling the weight of the helicopter.

5. Using suitable hoist (B69) hoist helicopter slowly with steady lifting force.

6. Lower helicopter and remove lift plate (1).

NOTE

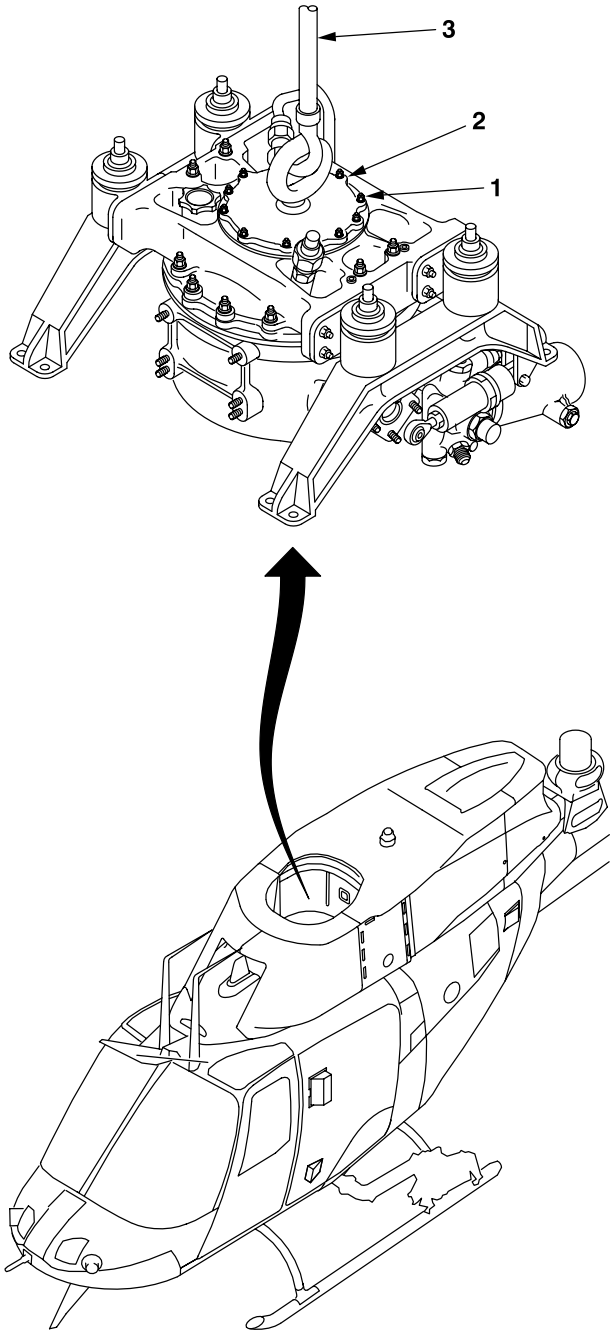
If mast assembly is not to be installed in transmission immediately, a protective cover shall be installed to prevent entry of foreign matter.

FOLLOW-ON MAINTENANCE

Install main rotor mast assembly (Task 6-4-20).

Install main rotor hub and blade assembly (Task 5-1-2).

Install mast mounted sight (TM 9-1240-778-23).



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END OF TASK

1-8-2. HOISTING HELICOPTER — MAIN ROTOR INSTALLED (MMS INSTALLED OR REMOVED)

This task covers: Hoisting

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Helicopter Hoisting Sling Assembly (B149)
Suitable Hoist (B69)
Rope (B118)

Personnel Required:
67S Scout Helicopter Repairer (3).

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Electrical Power Removed (Tasks 1-6-5 and 1-6-6)

GO TO NEXT PAGE

1-8-2. HOISTING HELICOPTER — MAIN ROTOR INSTALLED (MMS INSTALLED OR REMOVED) (CONT)

1. Attach sling assembly (B149) (1) to suitable hoist (B69).

CAUTION

To prevent damage to helicopter, hoisting tool shall not be allowed to strike mast mounted sight.

2. Lower sling assembly (B149) (1) over helicopter centered over mast mounted sight.

3. Lower sling assembly (B149) (1) until straps (2) can be looped under hub upper plate and back up to hooks (3).

4. Attach straps (2) to hooks (3).

5. Add ballast weight as needed.

6. Station person at tail skid to steady helicopter while hoisting.

WARNING

To prevent injury to personnel, hoist and cable shall be capable of handling the weight of the helicopter.

NOTE

If lifting beyond reach from ground, a steadying rope shall be tied around tailboom.

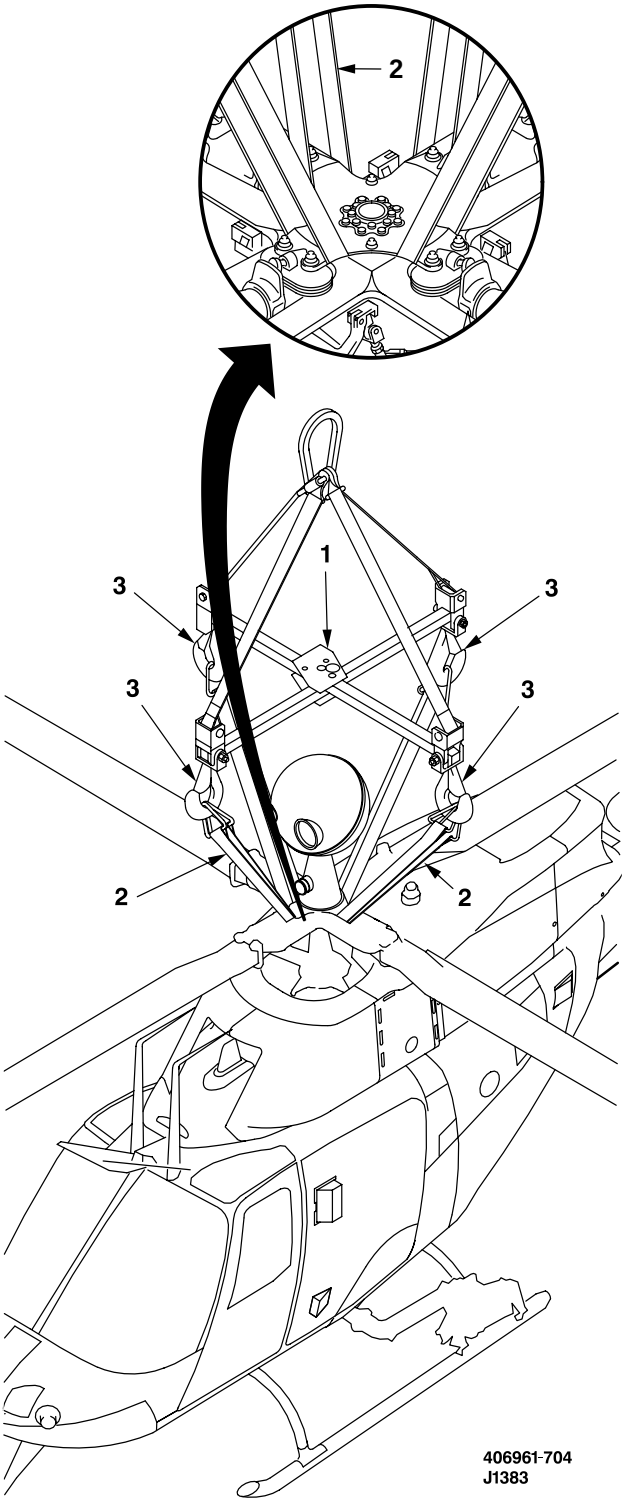
7. Using suitable hoist (B69) slowly take up slack and hoist helicopter slowly and steadily.

8. Slowly lower helicopter to surface and release tension.

9. Remove straps (2) from hooks (3).

10. Remove sling assembly (B149) (1).

11. Remove ballast weight.



END OF TASK

1-8-3. HOISTING HELICOPTER — MAIN ROTOR HUB AND BLADES REMOVED

This task covers: Hoisting

INITIAL SETUP

Applicable Configurations:
All

Tools:
Lifting Eye Clevis (B19)
Mast Lifting Clevis (B20)
Suitable Hoist (B69)
Rope (B118)
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer (3)

References:
TM 9-1240-778-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Electrical Power Removed (Tasks 1-6-5 and 1-6-6)
Mast Mounted Sight Removed (TM 9-1240-778-23)
Main Rotor Hub and Blade Assembly Removed (Task 5-1-1)

1. Slide holder (1) over splines of mast (2).

2. Place cone set (3) inside holder (1) and align with area normally occupied by split cone set.

3. Set upper bracket (4) in holder (1) and tighten assembly (B20) using spanner wrench.

4. Position lifting eye clevis (5) (B19) on upper bracket (4). Install pin (6).

5. Install safety pin (7) into end of pin (6).

6. Attach hoist cable (8) to lifting eye clevis (5).

7. Station person at tail skid to steady helicopter while hoisting.

WARNING

To prevent injury to personnel, hoist and cable shall be capable of handling the weight of the helicopter.

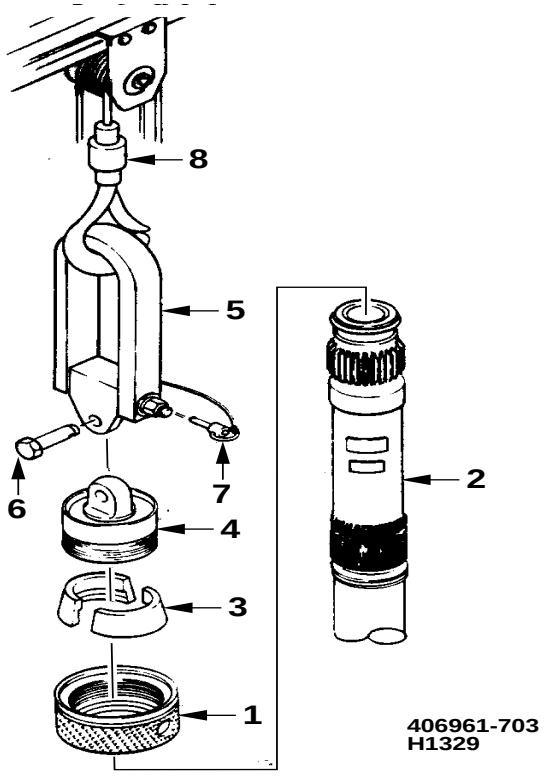
NOTE

If lifting beyond reach from ground, a steadying rope shall be tied around tailboom.

8. Using suitable hoist (B69) slowly take up slack and raise helicopter slowly and steadily.

9. Slowly lower helicopter back to surface and release tension.

10. Remove lifting eye assembly (B19) and mast lifting clevis (B20).



FOLLOW-ON MAINTENANCE

Install main rotor hub and blade assembly (Task 5-1-2).

Install mast mounted sight (TM 9-1240-778-23).

END OF TASK

1-8-4. SLING LOADING HELICOPTER

This task covers: Sling Loading

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Helicopter Hoisting Sling Assembly (B149)
Cargo Sling (B150)
Shackle (B137)
Static Discharge Hook (B70)

Material:
Rubber Gloves (D111)
Tape (D216)

Personnel Required:
67S Scout Helicopter Repairer (4)

References:
FM 1-513

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Electrical Power Removed (Tasks 1-6-5 and 1-6-6)
Main Rotor Blades Removed (Task 5-1-5)

GO TO NEXT PAGE

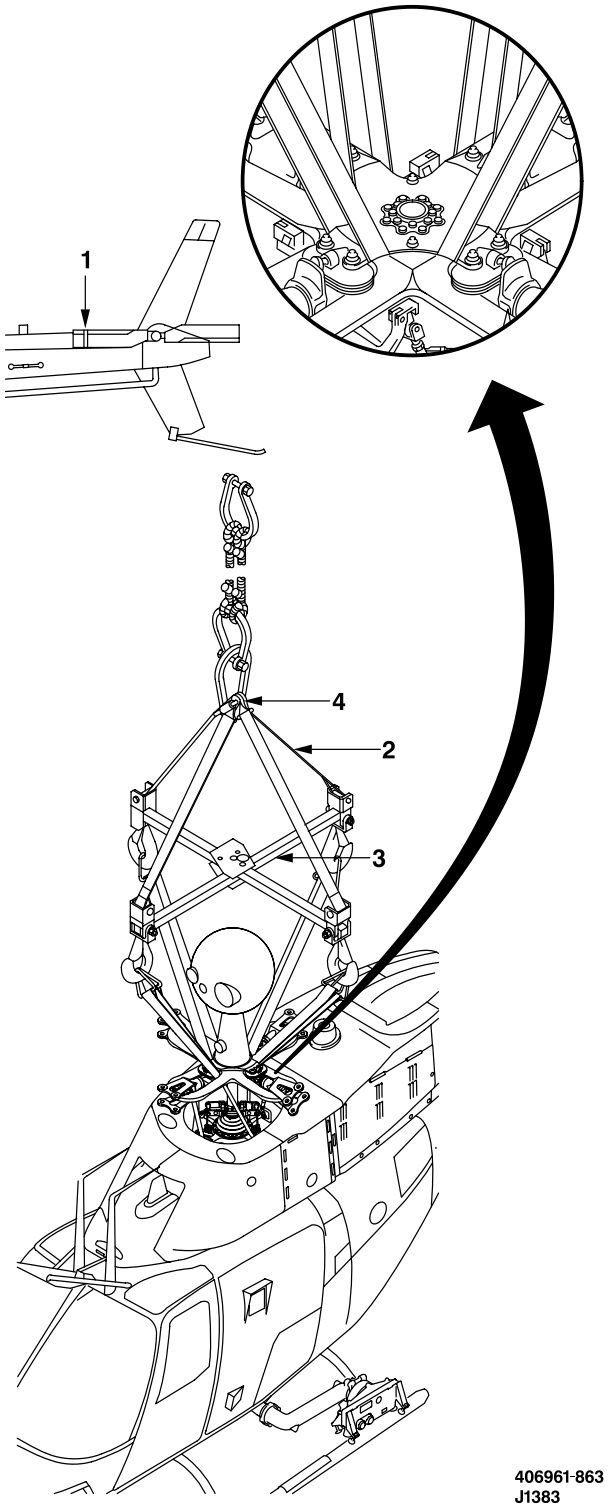
1-8-4. SLING LOADING HELICOPTER (CONT)

1. Secure tail rotor to tailboom using nylon rope or tubular nylon (1). Refer to FM 1-513.

2. Add weight to helicopter as required for ballast to compensate for crew or any missing equipment.

3. Tape upper sling straps (2) to crosstube assembly (3) in 2 places by folding straps at **12 inch** increments. Tape every 2 folds of strap (2) to crosstube assembly (3) using one wrap of tape (D216), continue until only **2 feet** of strap remains.

4. Hold all four upper sling straps (2) together with snap hooks (4) in same direction. Tape straps together, **2 inches** and **16 inches** below snap hooks (4).



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1-8-4. SLING LOADING HELICOPTER (CONT)

5. Loop lower sling straps (5) under upper plate assembly (6) of main rotor hub, position sleeves to prevent chafing.

6. Rest crosstube assembly (3) on mast mounted sight (7) attach lower sling strap rings (8) to snap hooks (9) on crosstube assembly (3).

7. Using two 12-foot cargo slings (B150) (10) with shackle assembly (B137) (11) at top and shackle assembly (B137) (12) with sling link (13) at bottom, attach top shackle (11) to lift helicopter.

8. Retrieve sling link (13) from hovering helicopter using rubber gloves (D111) and static discharge hook (B70).

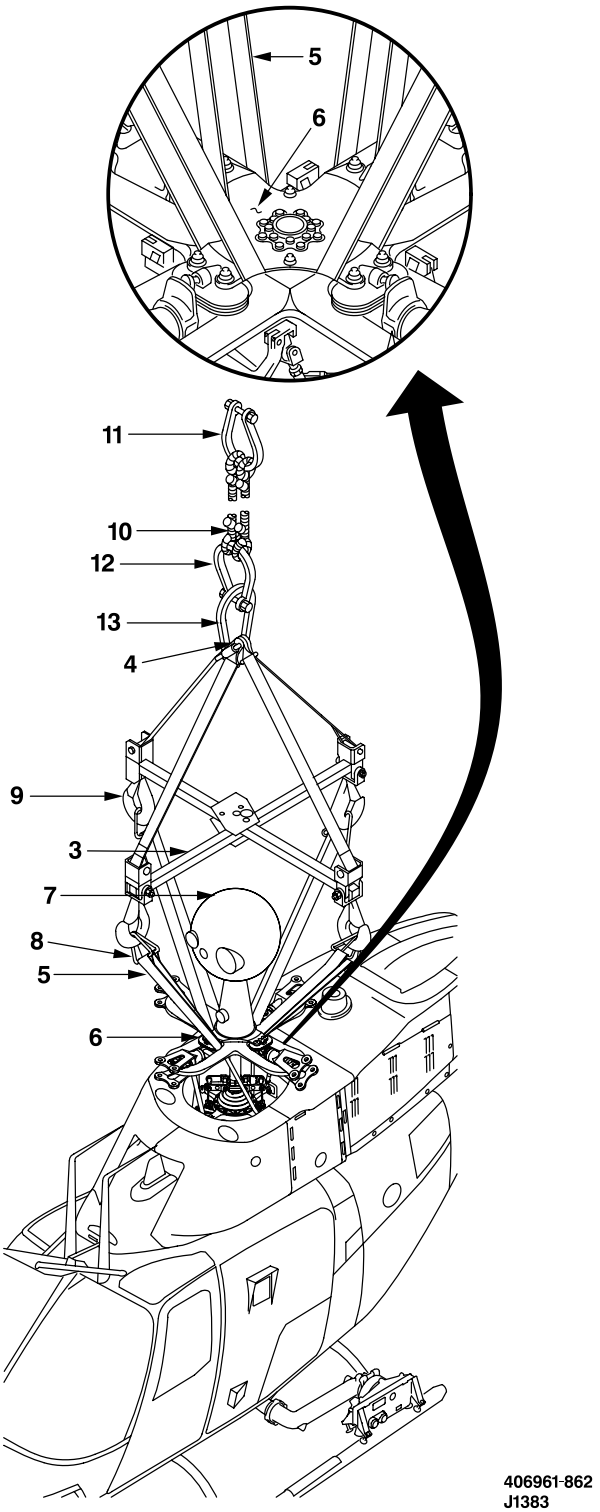
9. Attach all four upper sling strap snap hooks (4) to sling link (13).

10. Hold crosstube assembly (3) until tape (D216) on upper sling straps has broken.

11. After helicopter has reached its destination, remove sling assembly (B149) from main rotor hub.

FOLLLOW-ON MAINTENANCE

Install main rotor blades (Task 5-1-5).



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END OF TASK

Section IX. PREVENTIVE MAINTENANCE INSPECTIONS

1-55. GENERAL INFORMATION

This section contains requirements for special inspections and standards of serviceability applicable to the helicopter. The inspections prescribed in this section shall be accomplished at specified periods by aviation unit maintenance activities with the assistance of intermediate maintenance activities, when required. Complete progressive phase maintenance inspections are contained in TM 1-1520-248-PPM. The OH-58D/ OH-58D(R) helicopters are exempt from the Army Oil Analysis Program (AOAP). See figure Inspection Areas — Description for illustration of inspection area locations.

1-56. STANDARDS OF SERVICEABILITY

Standards of serviceability to be utilized in the day-to-day inspection and maintenance of the helicopters can be found as fits, tolerances, wear limits, and specifications in the specific task within this manual. Standards of serviceability for transfer of helicopters are contained in TM 1-1500-328-23.

1-57. SPECIAL INSPECTIONS

This section supplements the scheduled inspections as outlined in the applicable helicopter inspection checklists. This section also includes inspection of items which are required to be inspected at intervals not compatible with airframe operating time or airframe inspection intervals. Refer to DA PAM 738-751 for applicable forms, records, and worksheets required for these inspection intervals. Special inspections are categorized as follows:

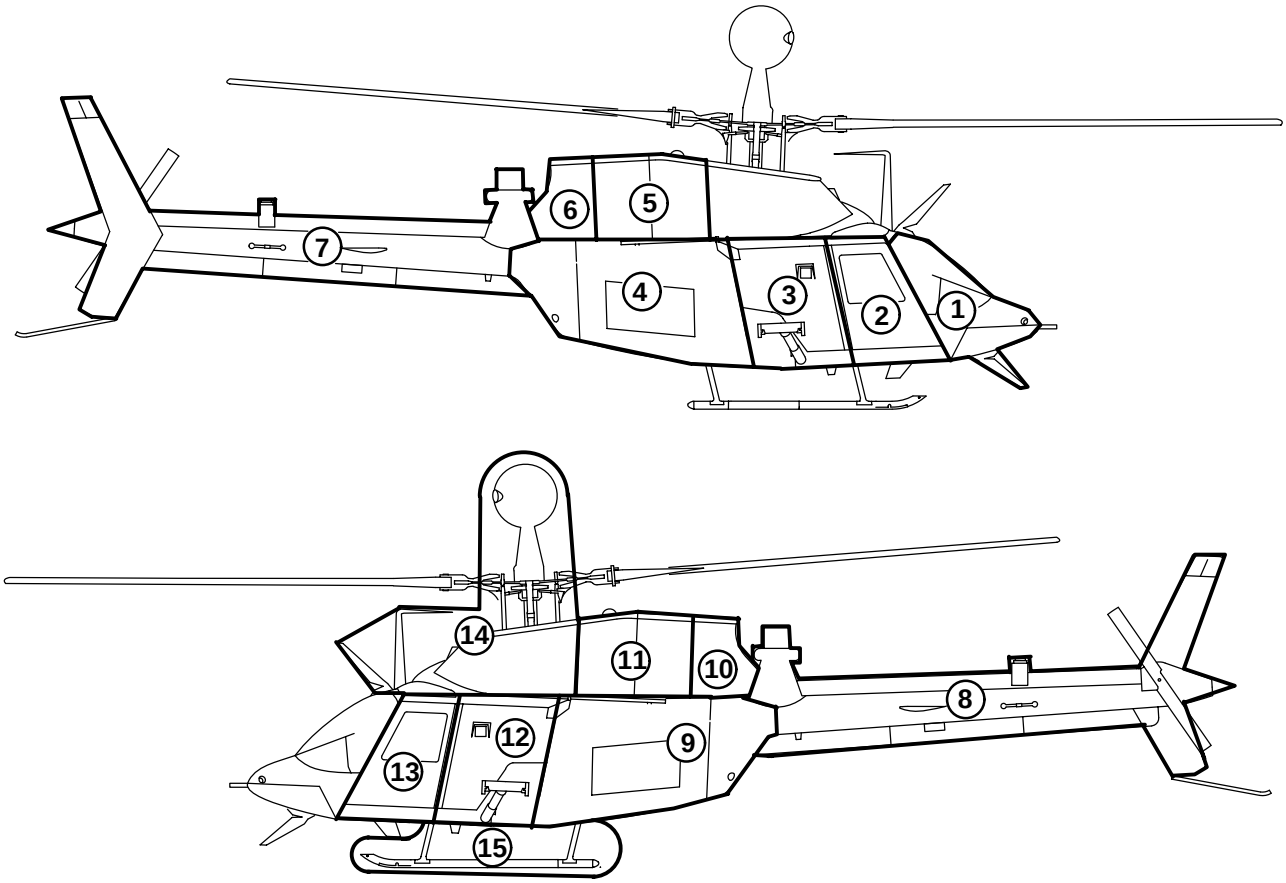
a. Scheduled Inspections. Inspections which must be performed at intervals of airframe operating time, calendar months, or a combination of both. The list of scheduled inspections contained in this Section does not include those listed in other technical manuals specifically applicable to the OH-58D/OH-58D(R) or lubrication requirements prescribed in Chapter 1, Section V.

b. Maintenance Inspections. Maintenance actions that are required due to the completion of other specific maintenance actions, such as retorques after the installation of major components.

c. On Condition Inspections. Specific conditions or incidents that arise which require immediate inspection to ensure safe flight. Typical of these conditions are hard landings, overspeed, and sudden stoppage.

1-58. CORROSION INSPECTIONS

Inspection procedures for corrosion prone areas of this helicopter have been developed as a 14-day interval inspection and are found in TM 1-1520-248-PPM, Progressive Phased Maintenance. Appendix Q, entitled Corrosion Control, has been added to this manual. Appendix Q supports the corrosion inspections called out in TM 1-1520-248-PPM and includes illustrations detailing corrosion prone areas of the helicopter. Charts are used to give corrosion damage limits, repair, and corrosion treatment materials and processes with respect to corrosion prone areas.



Area No. 1 Nose Area

All surfaces, components, and equipment in nose compartment and on exterior ahead of crew doors. Includes lower wire strike protector.

Area No. 2 Crew Door and Cabin, Right Side

All surfaces, components, and equipment inside cabin, and on cabin exterior between forward and aft edges of crew door.

Area No. 3 Access Door and Avionics Area, Right Side

All surfaces, components, and equipment inside cabin, and on cabin exterior between forward and aft edges of access door. Includes avionics equipment and fuel cell.

Area No. 4 Avionics and Aft Fuselage Area, Right Side

All surfaces, components, and equipment on aft fuselage exterior between aft edge of access door and forward end of tailboom. Includes fuel filler cap, drain lines, and receptacles.

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Inspection Areas — Description (Sheet 1 of 2)

Area NO. 5 Engine Area, Right Side

All surfaces, components, and equipment associated with engine installation, located above engine work deck and within engine cowling and tailpipe fairing. Includes fuel control and starter-generator.

Area No. 6 Oil System Area, RIght Side

All surfaces, components, and equipment with transmission and engine oil system. Includes aft fairing assembly.

Area No. 7 Tailboom, Right Side

All surfaces, components, and equipment located in or on the tailboom. Includes antennas, horizontal stabilizer, forward tail rotor driveshaft cover, all supports, bearings and shafting mounted on tailboom and fin assembly.

Area No. 8 Tailboom, Left Side

All surfaces, components, and equipment located in or on the tailboom. Includes horizontal stabilizer, tail rotor gearbox, tail rotor, aft tail rotor driveshaft cover, all supports, bearings and shafting mounted on tailboom, and directional control linkages.

Area No. 9 Avionics and Aft Fuselage Area, Left Side

All surfaces, components, and equipment on aft fuselage exterior between aft edge of access door and forward end of tailboom. Includes flight controls, electrical equipment, battery and aft electrical compartment door.

Area No. 10 Oil System, Left Side

All surfaces, compartments, and equipment associated with transmission and engine oil system. Includes sight gage; also, flexible coupling and first bearing of tail rotor driveshaft.

Area No. 11 Engine Area, Left Side

All surfaces, components, and engine associated with engine installation, located above engine work deck and within engine cowling and tailpipe fairing. Includes alternator, freewheeling assembly, and particle separator.

Area No. 12 Access Door and Avionics Area, Left Side

All surfaces, components, and equipment inside cabin and on cabin exterior between forward and aft edges of left access door. Includes bleed air heater, computer components, and fuel tank probe.

Area No. 13 Crew Door and Cabin, Left Side

All surfaces, components, and equipment inside cabin and on cabin exterior between forward and aft edges of crew door.

Area No. 14 Pylon Area

All surfaces, components, and equipment associated with main rotor and controls, mast mounted sight, transmission, hydraulic system, antennas, and upper wire strike protector.

Area No. 15 Alighting Gear

All surfaces, components, and equipment associated with skid gear.

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J2105

Inspection Areas — Description (Sheet 2 of 2)

Table 1-6. TABLE OF CONTENTS FOR SCHEDULED INSPECTIONS — AIRCRAFT INSPECTION CHECKSHEET

Table 1-7. TABLE OF CONTENTS FOR MAINTENANCE INSPECTIONS — AIRCRAFT INSPECTION CHECKSHEET

Table 1-8. TABLE OF CONTENTS FOR ON CONDITION INSPECTIONS — AIRCRAFT INSPECTION CHECKSHEET

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) SCHEDULED INSPECTIONS	PAGE NO. 1	NO. OF PAGES 3
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
14		60 MONTHS OR 1200 FLIGHT HOURS		
		Inspect inside diameter of main rotor mast for corrosion (Task 6-4-17).		
15		36 MONTHS SERVICE LIFE.		
		Replace cargo hook (Task 13-1-1).		
2,13		24 MONTHS OR WHENEVER MARKED INSTALL DATE REACHES 24 MONTH SERVICE LIFE		
		Replace Raschel seat covers (Task 2-2-24).		
		12 MONTHS		
1		a. Inspect and test OAT/FAT gauge (TM 1-1500-204-23).		
1,8		b. Check standby magnetic compass. Compensate when necessary (TM 1-1500-204-23).		
All Areas		c. Check and account for all inventoriable property (not required while helicopter is in storage) (TM 1-1500-204-23).		
2		12 MONTHS OR EXPIRATION OF ANY ITEM		
		Inspect first aid kit (TM 1-1500-204-23).		
		6 MONTHS		
4		a. Inspect grounding receptacle and fueling receiver grounding strap for corrosion, damage, security, and proper ground (TM 1-1500-204-23).		
13		b. Inspect fire extinguisher (TM 1-1500-204-23).		
12		90 DAYS		
		Clean underwater acoustic beacon (NAVAIR 16-45-2453).		
All Areas		14 DAYS		
		Ground run helicopter (TM 1-1520-248-10/CL).		

(TABLE I.D. 922567)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) SCHEDULED INSPECTIONS	PAGE NO. 2	NO. OF PAGES 3
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
5,11		300 FLIGHT HOURS Clean and inspect particle separator. May be accomplished with the nearest 100 hour engine inspection.		
8,11, 14		160 FLIGHT HOURS OR 12 MONTHS Perform tail rotor gearbox, transmission and freewheeling unit chip detector test (TM 1-1520-248-T).		
8		160 HOURS Perform fluorescent penetrant inspection of the tail rotor gearbox support area for tailboom part numbers (**0.063 inch** skin) 406-961-024-149, 406-961-024-151, 206-032-004-177, 406-530-200-107, and 406-530-200-109 (Task 2-3-1).		
9		100 FLIGHT HOURS OR 180 DAYS Perform NiCad battery PMCS (AVIM) (TM 11-6140-203-23).		
5,11, 15		100 FLIGHT HOURS a. Perform engine chip detector test (TM 1-1520-248-T). b. Visually inspect alternate skid shoes for cracks at forward end.		
7,8		80 FLIGHT HOURS a. Remove AN/ALQ-144A(V)1 IR Jammer/Transmitter (TM 11-5865-200-12). b. Internally clean AN/ALQ-144A(V)1 IR Jammer/Transmitter (AVIM) (TM 11-5865-200-34).		

(TABLE I.D. 922567)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) SCHEDULED INSPECTIONS	PAGE NO. 3	NO. OF PAGES 3
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
2,13	80 FLIGHT HOURS			
		Visually inspect the crew seats and back cushions for tears, punctures, and frayed stitching.		
		Inspect the crew seat back structures adjacent to wire roller fittings for cracks and distortion.		
		Inspect crew seat lower portion for cracks and distortion.		
9	50 FLIGHT HOURS OR 30 DAYS			
		Perform NiCad battery PMCS (TM 11-6140-203-23).		
8	40 FLIGHT HOURS			
		Perform fluorescent penetrant inspection of the tail rotor gearbox support area for tailboom part numbers (**0.040 inch** skin) 406-961-024-111, 406-961-024-147, 206-032-004-157, 206-032-004-169, and 206-032-004-171 (Task 2-3-1).		
		Perform visual inspection of the tail rotor gearbox support area for the tailboom part numbers (**0.063 inch** skin) 406-961-024-149, 406-961-024-151, 206-032-004-177, 406-530-200-107, and 406-530-200-109 (Task 2-3-1).		
1	20 FLIGHT HOURS OR 14 DAYS			
		Inspect the nose weight installation for security and damage to helicopter.		
9	10 HOURS			
		Perform visual inspection of the tail rotor gearbox support area for tailboom part numbers (**0.040 inch** skin) 406-961-024-111, 406-961-024-147, 206-032-004-157, 206-032-004-169, and 206-032-004-171 (Task 2-3-1).		

(TABLE I.D. 922567)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) MAINTENANCE INSPECTIONS	PAGE NO. 1	NO. OF PAGES 3
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
5		AFTER INSTALLATION OF ENGINE Power Assurance Check Required. Refer to TM 1-1520-248-MTF.		
5,11		5 FLIGHT HOURS AFTER ENGINE INSTALLATION Retorque bolts attaching engine mount legs to airframe (Task 4-7-1).		
5		REMOVAL/REPLACEMENT, REPAIR, ADJUSTMENT OF FUEL CONTROL, ESC, COMPRESSOR. Power Assurance Check Required. Refer to TM 1-1520-248-MTF. NOTE Fuel control air lines are the air lines between the fuel control and the governor, i.e., Pr, Pg, Py, and Pc from the tee fitting to the fuel control.		
5		ANY TIME A FUEL CONTROL AIR LINE IS LOOSENED OR REPLACED, EXCEPT WHEN ENGINE COMPRESSOR IS CLEANED. Power Assurance Check Required. Refer to TM 1-1520-248-MTF.		
5		REPLACEMENT OF TGT INDICATING SYSTEM. Power Assurance Check Required. Refer to TM 1-1520-248-MTF.		
5		REPLACEMENT OF AIR DATA SENSOR FOR ERROR. Power Assurance Check Required. Refer to TM 1-1520-248-MTF.		
11		AFTER INSTALLING A REPAIRED FREEWHEELING ASSEMBLY a. Ground run helicopter for 15 minutes. Obtain as high a power level as possible without lift-off and decelerate rapidly at least two times. b. Fly helicopter in the vicinity of a safe landing area for 15 minutes and perform recovery autorotation. c. Remove freewheeling chip detector and drain oil into a clean container. d. Check chip detector and oil for metal chips.		

(TABLE I.D. 922562)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) MAINTENANCE INSPECTIONS	PAGE NO. 2	NO. OF PAGES 3
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
14		ANY TIME THE TRANSMISSION IS REMOVED Remove and inspect the pylon support beams and the elastomeric bearings.		
14		ANY TIME MAIN ROTOR MAST ASSEMBLY IS TRANSFERRED TO ANOTHER AIRCRAFT Inspect inside diameter of main rotor mast for corrosion (AVIM).		
8		ANY TIME TAIL ROTOR GEARBOX IS REPLACED Completely clean and inspect tail rotor pitch change mechanism.		
8		ANY TIME TAIL ROTOR GEARBOX IS INSTALLED OR ATTACHMENT HARDWARE IS ADJUSTED Check tail rotor gearbox retaining nuts for proper torque after initial ground runup and again after 100 ±10 hours of operation.		
14		25 FLIGHT HOURS AFTER INSTALLATION OF MAIN ROTOR DAMPER Retorque 16 nuts attaching dampers to upper and lower plates.		
14		AFTER INSTALLATION OF MAIN ROTOR HUB NOTE Torque shall be applied at end of each mission day that aircraft flies or has a ground run. Apply lower cone torques until the bolts do not move with application of the specified torques. When bolts no longer move on daily inspection, recheck after additional 50 — 70 flight hours. If no adjustment is needed at next 50 — 70 flight hours, torque check process is complete; otherwise, begin torque check process over again.		
All Areas		WHEN OVERHAULS, MAJOR MODIFICATIONS OR MAJOR AIRFRAME REPAIRS ARE ACCOMPLISHED, ANY SPECIAL EQUIPMENT HAS BEEN ADDED TO OR REMOVED FROM THE BASIC AIRFRAME, OR WHEN WEIGHT AND BALANCE DATA ARE SUSPECTED TO BE IN ERROR.		

(TABLE I.D. 922562)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) MAINTENANCE INSPECTIONS	PAGE NO. 3	NO. OF PAGES 3
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		a. Weigh helicopter and perform weight and balance records check (Appendix G). Refer to AR 95-3 for calendar inspection requirements.		
		b. Check standby magnetic compass for accuracy. Compensate when necessary (TM 1-1500-204-23).		
All Areas		AFTER EACH ELECTRICAL EQUIPMENT CHANGE OR MAJOR STRUCTURAL CHANGE LIKELY TO AFFECT THE COMPASS		
		Check standby magnetic compass for accuracy. Compensate when necessary (TM 1-1500-204-23).		
8		5 TO 10 FLIGHT HOURS AFTER TAIL ROTOR HUB INSTALLATION		
		Retorque tail rotor hub retaining nut.		
7,8		AFTER MAINTENANCE TEST FLIGHT AS A RESULT OF TAILBOOM INSTALLATION		
		Retorque tailboom attachment bolts (Task 2-3-8).		
7,8		100 ± 10 FLIGHT HOURS AFTER INSTALLATION OF TAILBOOM		
		Retorque tailboom attachment bolts (Task 2-3-8).		
4,14		100 ± 10 FLIGHT HOURS AFTER COLLECTIVE SERVOACTUATOR INSTALLATION		
		Retorque collective trunnion plates.		

(TABLE I.D. 922562)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 1	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
All Areas		AFTER A HARD LANDING Definition: Hard landing is defined as any accident or incident in which ground impact of the helicopter causes severe pitching of the main rotor or results in noticeable yielding or cracking of fuselage pylon support structure or landing gear. This definition is confined only to those accidents not involving sudden stoppage of main rotor or tail rotor. Inspections: When a probable hard landing incident has occurred, proceed as follows: a. Inspect main rotor blades for contact with tailboom. If damage is found, refer to AFTER SUDDEN STOPPAGE — MAIN ROTOR. b. Inspect tail rotor blades for damage. If damage is found, refer to AFTER SUDDEN STOPPAGE — TAIL ROTOR. c. Check all cowlings and doors for proper fit and alignment. Misaligned cowlings may indicate a distorted fuselage resulting from major stresses and damage. Remove center post cover assembly and inspect all caps and angles for buckling and bending. d. Remove cowlings as necessary to perform a complete visual inspection. e. Inspect landing gear skid tubes and crosstubes for damage and deflection. Inspect crosstube attachment points for damage or distortion. f. Inspect upper longerons and adjacent skin near the aft engine firewall for loose rivets, cracks, or all distortion. g. Inspect tail skid tube and mounting for damage. Inspect tailboom internally and externally for cracks, distortion, and loose rivets. Inspect the tailboom attachment points for elongated bolt holes, crushed washers, and damaged structure. Inspect external skin of tailboom for cracks in area of attachment to the horizontal stabilizer. h. Inspect tail rotor flight control access covers and adjacent structure for damage.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 2	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		i. Inspect tail rotor control rods for cracks and rod ends for damage. j. Completely inspect the flight control system for bent or damaged tubes, bellcranks and supports, and for damaged bearings. Particular attention should be given to the pitch links and collective sleeve assembly. k. Check for leaks in the hydraulic system and interference or binding and for satisfactory operation. l. Inspect the transmission assembly as follows: (1) Inspect structure around the transmission mounting points (four elastomeric mounts at the corners of the top case and two spring assembly mounts at the bottom of the main case, one on each side) with a 10-power glass for cracks, deformation, or slippage of the attachment fittings. (2) Check torque on hardware retaining pylon mounts to transmission at locations noted in (1) above. (3) Visually inspect for any evidence of hard contact between the transmission and the surrounding structure. (4) Inspect the transmission supporting structure on the cabin roof for cracks, deformation, or loss of attachment hardware torque. Inspect surrounding airframe structure for cracks, deformation, or loose or missing rivets. If structural damage to the transmission or supporting structure is visible, or if attachment hardware is found loose in steps (2) or (4) above, return both the transmission and the input driveshaft to depot for overhaul. (5) Check the standpipe backlash adapter for evidence of oil leakage. m. Inspect the main rotor mast assembly as follows: (1) Inspect the mast for obvious distortion. If obvious distortion is found, scrap the mast assembly locally. Otherwise proceed to step (2).		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 3	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(2) Remove the mast assembly and inspect (Tasks 6-4-15, 6-4-16, 6-4-17 and 6-4-20). n. Inspect fuel and oil systems for damage. Before flight, check fuel and oil systems for leaks. Inspect the crashworthy fuel system for the following: (1) Sump retainer and surrounding airframe for cracks and distortion. (2) Sump area for leaks. (3) Sump drain valve for proper operation. (4) Fuel boost pump wiring for broken leads. (5) Retainer at filler cap and adapter for cracks and/or sheared rivets. (6) Relation of fuel cell fitting with airframe fuel opening. (7) Cover assembly to ensure no pullout or deformation has occurred at screws attaching cover assembly. (8) Fuel feed valve at top right side of fuel tank for cracks. (9) Boost pump pressure available to engine and that no leakage occurs. (10) Manual shutoff valve for binding. (11) Fuel quantity indicator for proper operation and probe leads for broken wires. (12) Hoses for chafing and broken or distorted clamps. o. Inspect engine mount legs and trunnions, and fuselage attachment points for cracks and damage. p. Perform engine-to-transmission alignment (Task 4-7-4). q. Perform tail rotor driveshaft alignment (Task 6-6-18). r. Check power and accessory gearbox for cracked flanges.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 4	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		s. Inspect magnetic chip detectors for metal accumulation. t. Check engine mounting pads for cracks. u. Check air, oil, and fuel hose connections for tightness. v. Check engine accessories for cracked flanges, loose bolts, or nuts, connections, and general condition. w. Perform engine hard landing inspection (TM 55-2840-256-23/TM 1-2840-263-23). x. If damage or misalignment to fuselage structure, landing gear, or tailboom is such that a major repair, replacement, or alignment is necessary, refer to TB 43-0002-3 and proceed as follows: (1) Remove and inspect any of the following components not already removed as directed above and make disposition as indicated: (a) Transmission Assembly. Send to depot for overhaul. (b) Mast Assembly (AVIM). Refer to (Tasks 6-4-15, 6-4-16, 6-4-17 and 6-4-20). (c) Engine-to-Transmission Driveshaft Assembly (Tasks 6-2-1 and 6-2-2). (d) Tail Rotor Driveshafts. Refer to Removal and Inspection tasks in Chapter 6, Section VI. (2) If a thorough visual inspection does not reveal any discrepancies or obvious damage to components listed below, they may be retained in service for continued usage. (a) Main Rotor Hub and Blades (b) Main Rotor Controls (c) Swashplate and Support Assembly (d) Control Rods and Bolts		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 5	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(e) Tail Rotor Gearbox Assembly (f) Tail Rotor Hub and Blades (g) Elastomeric Bearings (Main Transmission). y. If damage is found in rotating controls, accomplish the following steps: (1) Replace control rods and bolts above the hydraulic actuators (that is, from the boost cylinders to the hub). (2) Remove and inspect the following components and make disposition as indicated: (a) Main Rotor Hub Assembly (Depot) (Task 5-1-1). (b) Swashplate and Support Assembly (AVIM) (Tasks 5-2-32, 5-2-33, and 5-2-34). z. Inspect Wire Strike Protection System (WSPS) as follows: (1) Lower Assembly (a) Inspect for obvious damage to WSPS. (b) Inspect attachment area for damage. (2) Windshield Deflector and Upper WSPS Assembly. (a) Inspect for obvious damage to WSPS. (b) Inspect attachment area for damage. aa. Inspect universal weapons pylon mounting areas for damage, distortion, and sheared or missing fasteners.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 6	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
6,8, 14		SUDDEN STOPPAGE — MAIN ROTOR Sudden stoppage is defined as an abnormal deceleration of the drive system caused by internal seizure of the transmission or by the main rotor or tail rotor blades striking something which causes rapid deceleration. Sudden stoppage could be further defined as an instantaneous shock load applied to the drive train and rotor system. Shock loads result from blades striking an object. Visible damage to the blades is evidence that a shock load could have been applied to the system. In each case the pilot and maintenance personnel will need to evaluate what occurred and determine if the sudden stoppage inspection is required. NOTE Components removed from the helicopter following a sudden stoppage — main rotor shall be evaluated as an interrelated group. Removal records accompanying each component shall cross reference part numbers and serial numbers of the other drive system components removed for evaluation. a. After sudden stoppage of the main rotor with no visible damage, inspect the following: NOTE A rattle-type noise may be observed in the blade tip area when installed blades are rapped or shaken. This noise is normal and should not be cause for concern. The noise originates from movement of the product balance weights installed in the leading and trailing edge weight pockets. These weights are loose-fit over three internal bosses on the pocket covers. The weights are held in place by centrifugal force and cannot rattle during rotor operation.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 7	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(1) Exterior of main rotor blades for security of all bonds and for visible damage. If any damage is found, return blades to depot for overhaul. (2) Remove tip cover plate from main rotor blades. If any movement of tip weights has occurred, the blade shall be scrapped. b. Remove the following components if visible damage to the main rotor blade(s) is evident. NOTE If a visual inspection of the components removed shows no evidence of yielding, deformation, cracks, or other obvious damage that would render them nonrepairable, components shall be forwarded to appropriate higher level maintenance for determination of airworthiness. (1) Main Rotor Blades: any impact damage to the leading edge or lower skin or buckling and skin tears requires removal and scrapping of all bonded tail rotor driveshafts. (2) Main Rotor Hub Assembly: (3) Mast Assembly: a structural failure of the mast assembly, out of roundness or bowing, requires removal and scrapping of all bonded tail rotor driveshafts. NOTE If mast shows evidence of torsional yielding, the mast assembly, transmission, main driveshaft, and freewheeling installation (inner race and outer race) shall be considered unserviceable and scrapped. Major damage to the mast assembly other than torsional yielding requires replacement of the transmission top case.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 8	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIRE-MENT EVERY	ITEM	STA-TUS	RECORDED ON WORKSHEET
		NOTE Cadmium plating on the outside diameter of the mast is **0.0003 to 0.00049 inch** thick per surface. When measuring mast O.D. at six places for out-of-roundness, ensure that the **0.0003 to 0.00049 inch** thickness is considered when measuring plated surfaces or when plating may have been removed. Inspect for torsional yielding as follows: Using a micrometer, check the mast O.D. for out-of-roundness at three places by taking two measurements at right angles to each other at each place: one place between the swashplate and drive hub set, one place midway between the drive hub set and the lower hub cone contact area, and one place approximately **2 inches** below the lower hub cone contact area. If any pair of measurements vary in excess of **0.002 inch,** a runout check must be performed. (4) Transmission Assembly. (5) Swashplate Assembly. (6) Control tubes from the hydraulic actuators to hub. (7) Freewheeling Installation. (8) Main Driveshaft Assembly. c. Inspect transmission pylon stop fitting at fuselage attachment points for cracks. d. Inspect engine mount legs and trunnions and fuselage attachment points for cracks and damage. e. Perform sudden stoppage inspection on engine (TM 55-2840-256-23/TM 1-2840-263-23). f. When sudden stoppage of the main rotor results in severe damage to or distortion of the main rotor blades, hub or mast, it shall be assumed that a tail rotor sudden stoppage has also occurred. Comply with requirements of SUDDEN STOPPAGE — TAIL ROTOR section in addition to the requirements specified above.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 9	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
6,8, 14		SUDDEN STOPPAGE — TAIL ROTOR Sudden stoppage is defined as any rapid deceleration of the torsional drive system whether caused by seizure within the helicopter drive system itself or by contact of the tail rotor blade(s) with the ground, water, or a foreign object of sufficient inertia to cause rapid deceleration. Damage to the tail rotor hub and blade could be present although it may not be readily detected by standard visual, dimensional, and magnetic particle or fluorescent penetrant methods of inspection. NOTE When components are removed from an aircraft for evaluation following a sudden stoppage, tail rotor shall be evaluated as an interrelated group. Removal records accompanying each component shall cross reference part numbers and serial numbers of the other drive system components removed for evaluation. a. Remove and replace tail rotor hub and blade assembly. Scrap removed parts. b. Remove the following tail rotor drive system components and route to depot for overhaul: (1) 406-040-400 tail rotor gearbox assembly. c. Remove and scrap the following tail rotor system components if during a sudden stoppage inspection any of the following conditions which are attributable to sudden stoppage are noted: (1) 406-040-340 disk pack coupling (8): Deformation of any disk pack which results in gaps between laminations that are greater than **0.015 inch.** (2) 406-040-330 shaft assembly, tail rotor driveshaft (bonded) segment (4): a structural failure of any driveshaft or out of roundness or bowing which exceeds limits specified. (3) Disk pack coupling bolts: a structural failure of any bolt.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 10	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(4) 406-040-320 fan shaft assembly: a structural failure or distortion or an out of roundness or bowing of any component which exceeds limits specified. (5) 406-040-316 adapter (2). (6) 406-040-315 shaft assembly, forward. (7) 406-040-325 shaft assembly, aft short. d. Inspect tail rotor pitch change shaft and replace bearings. e. Inspect tail rotor directional control system starting at the directional control actuator and continuing aft up to and including the tail rotor crosshead. f. Inspect tailboom in area of tail rotor gearbox mounting studs and dowel pins for cracks using fluorescent penetrant inspection. Visually inspect for elongation of gearbox mounting holes in tailboom structure. g. Inspect four tailboom attachment points for cracks, distortion, damage, and security. Check torque on tailboom attachment hardware. h. Inspect tailboom internally and externally for cracks, distortion, and loose or missing rivets, paying particular attention to area of horizontal stabilizer and tail rotor gearbox attachment. i. Inspect horizontal stabilizer for security and overall condition. j. Inspect vertical fin for security and overall condition. k. Check tail skid for condition and security. l. Remove and inspect freewheeling assembly (AVIM). m. Remove freewheeling shaft and forward to appropriate higher level of maintenance for determination of airworthiness. n. Perform sudden stoppage inspection on engine (TM 55-2840-256-23/TM 1-2840-263-23).		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 11	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
14		ANY TIME MAIN ROTOR BLADE IS DROPPED DURING FOLDING/ UNFOLDING PROCESS WITHOUT PITCH LOCK ASSEMBLIES INSTALLED. a. Inspect pitch horn and rotating controls between pitch horn and hydraulic actuators for any deformation or other damage. b. Inspect main rotor blade for contact damage. NOTE A rattle-type noise may be observed in the blade tip area when installed blades are rapped or shaken. This noise is normal and should not be cause for concern. The noise originates from movement of the product balance weights installed in the leading and trailing edge weight pockets. These weights are loose-fit over three internal bosses on the pocket covers. The weights are held in place by centrifugal force and cannot rattle during rotor operation. (1) Exterior of main rotor blades for security of all bonds and visible damage. If any damage is found, forward blades to appropriate higher level of maintenance for determination of airworthiness. (2) Remove tip cover plate from main rotor blades. If any movement of tip weights has occurred, forward blades to appropriate higher level of maintenance for determination of airworthiness. c. Inspect area of blade contact for damage. d. If a thorough visual inspection does not reveal any discrepancies or obvious damage to the components listed above, they may be retained in service.		
1		AFTER WIRE STRIKE a. Lower WSPS assembly.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 12	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(1) Inspect for obvious damage to WSPS. (2) Inspect attachment area for damage. b. Windshield deflector and upper WSPS assembly. (1) Inspect for obvious damage to WSPS. (2) Inspect attachment area for damage.		
1		AFTER LOWER WSPS GROUND CONTACT a. Inspect for obvious damage. b. Inspect attachment area for damage. c. Remove panel and inspect structure and directional control tubes and bellcranks for damage. NOTE Loss of Breakaway Tip or damage not affecting structural integrity of installation is not cause for grounding of helicopter. However, replacement of tip and damage repair shall be accomplished as soon as practical.		
14		AFTER MAIN ROTOR OVERSPEED If main rotor overspeeds in excess of 125%: a. Main rotor hub and blades. Return to depot for evaluation. (1) If bond separation is evident anywhere on a blade, it shall be scrapped. (2) If any movement of balance weights has occurred, the blade shall be scrapped. (3) If retention bushings show evidence of looseness, the blade shall be scrapped. (4) If any retention bolt is yielded, it shall be scrapped. (5) If any grip shows deformation, it shall be scrapped.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 13	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(6) If the yoke exhibits any delamination, it shall be scrapped. (7) If the main rotor components pass the above inspection requirements and no other discrepancies exist, they are acceptable for service. b. Tail rotor blades. (1) If one of the blades of a pair has been damaged badly enough that it fails inspection in Chapter 6, return both blades to overhaul. c. Drive system. (1) Remove and inspect chip detectors in main transmission, freewheeling, and tail rotor gearbox. (2) Visually inspect engine-to-transmission driveshaft, tail rotor driveshafts, and tail rotor driveshaft disk pack couplings for damage. (3) Using a flashlight and an inspection mirror as required, visually inspect oil cooler blower impeller on tail rotor driveshaft number two for distortion or damaged vanes. (4) Drain transmission oil and filter through a clean strainer. Visually inspect strainer for evidence of foreign material. Evaluate any material found. Remove transmission oil filter housing and inspect filter and inside of housing for foreign material. Clean housing and install new 3-micron filter. (5) Ground run ship for one hour. (6) Reinspect drive system chip detectors and oil filter and housing. If no significant material is found in steps (1) and (4) and again in step (6), the drive system may be returned to service. If any material is found which indicates component damage, remove the transmission and return to depot for overhaul. d. Engine. Inspect for overspeed limits and inspection criteria (TM 55-2840-256-23/TM 1-2840-263-23).		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 14	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
7,8, 11,14		AFTER MAIN ROTOR OVERTORQUE NOTE Before returning items to Depot for overhaul, identify all components as having been removed due to main rotor overtorque. a. For main rotor overtorques of 100 to 103% up to 120 seconds continuous or up to 240 seconds accumulative per hour. (1) Remove and visually inspect all drive system chip detectors. (2) Remove and visually inspect transmission oil filter for metal contaminants. b. For main rotor overtorques of 100 to 103% exceeding 120 seconds continuous or 240 seconds accumulative per hour: (1) Remove and send to depot: (a) Mast Assembly (b) Transmission Assembly (c) Main Driveshaft (d) Freewheeling Shaft Assembly (e) All Tail Rotor Driveshaft Components (f) Tail Rotor Gearbox (2) Identify all components as having been removed due to main rotor overtorque. c. For main rotor overtorques of 100 to 116% for 10 seconds or less per hour accumulated duration, no maintenance action is required. d. For main rotor overtorques of 100 to 116% for more than 10 seconds but less than 60 seconds continuously, or more than 10 seconds but less than 120 seconds accumulative per hour. (1) Remove and visually inspect all drive system chip detectors.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 15	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(2) Remove and visually inspect main transmission oil filter for metal contamination. e. For main rotor overtorques of 100 to 116% for more than 60 seconds continuously or more than 120 seconds accumulative per hour. (1) Remove and send to depot: (a) Mast Assembly (b) Transmission Assembly (c) Main Driveshaft (d) Freewheeling Shaft Assembly (e) All Tail Rotor Driveshaft Components (f) Tail Rotor Gearbox (2) Identify all components as having been removed due to main rotor overtorque. f. For main rotor overtorques of 117 to 125% for 2 seconds or less: Visually inspect main transmission and tail rotor gearbox for cracks and excessive oil leakage. g. For main rotor overtorques of 117 to 125% for more than 2 seconds: (1) Remove and send to depot: (a) Mast Assembly (b) Transmission Assembly (c) Main Driveshaft (d) Freewheeling Shaft Assembly (e) All Tail Rotor Driveshaft Components (f) Tail Rotor Gearbox		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 16	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(2) Identify all components as having been removed due to main rotor overtorque. h. For main rotor overtorques of 126 to 150% for 2 seconds or less: (1) Visually inspect main transmission and tail rotor gearbox for cracks and excessive oil leakage. (2) Visually inspect tail rotor driveshafts, couplings, and hanger bearing assemblies for cracks and deformation. (3) Record overtorque on 2408-13-1/2408-13-1-E and on transmission 2408-16/2408-16-E. After four occurrences, send mast and transmission assembly to depot. (4) Annotate records that an overtorque has occurred and that mast and transmission gear shaft support case requires scrapping. i. For main rotor overtorques of 126 to 150% for more than 2 seconds: (1) Remove and send to depot: (a) Mast Assembly (b) Transmission Assembly (c) Main Driveshaft (d) Freewheeling Shaft Assembly (e) All Tail Rotor Driveshaft Components (f) Tail Rotor Gearbox (2) Annotate records that an overtorque has occurred and that mast and transmission gear shaft support case requires scrapping. j. Check engine overtorque limits and inspection criteria (TM 55-2840-256-23/TM 1-2840-263-23).		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 17	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
5		AFTER OVERTEMPERATURE OPERATION Refer to TM 55-2840-256-23/TM 1-2840-263-23 for overtemperature operation.		
5		ANY TIME POOR PERFORMANCE IS NOTED. Power Assurance Check Required. Refer to TM 1-1520-248-MTF.		
5		IF ENGINE OIL TEMPERATURE EXCEEDS 107 °C WITHOUT ANY CHANGE IN NORMAL OIL PRESSURE Refer to TM 55-2840-256-23/TM 1-2840-263-23.		
5		IF ENGINE OIL TEMPERATURE EXCEEDS 107 °C WITH A CHANGE IN NORMAL OIL PRESSURE Refer to TM 55-2840-256-23/TM 1-2840-263-23.		
14		WHEN OPERATING IN AN EXTREMELY COLD WEATHER ENVIRONMENT Inspect main rotor blades for icing condition. De-ice when necessary (Task 1-4-12).		
14		ANY TIME TRANSMISSION IS OPERATED WITHOUT OIL Complete disassembly inspection of main rotor mast assembly is required (AVIM). Complete disassembly inspection of freewheeling assembly is required (AVIM). Remove transmission and freewheeling shaft assembly; route to depot for overhaul.		
6		ANY TIME TRANSMISSION OR TAIL ROTOR GEARBOX IS OPERATED WITH MIXED OILS IN EXCESS OF FIVE HOURS Drain, flush, and perform serviceability inspection.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 18	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
10		ANY TIME ENGINE SCAVENGE OIL FILTER INDICATOR PIN HAS BEEN ACTUATED (POPPED) a. If the indicator pin has been actuated (popped), the following actions shall be taken: NOTE A **"**popped**"** pin is not reason to ground helicopter. (1) Manually reset the pin to clear the visual indication. (2) If 5 or more actuations occur during the next 5 flight hours, the element shall be replaced within 20 hours of flight.		
5, 11		ANY TIME ENGINE INTERNAL OIL FILTER BYPASS INDICATOR POPPED Remove/clean/install oil filter (TM 55-2840-256-23/TM 1-2840-263-23).		
14		TRANSMISSION OIL FILTER IMPENDING BYPASS INDICATOR POPPED. Remove/clean/install transmission oil filter (Task 6-8-3).		
5,6		ANY TIME FUEL FILTER CAUTION MESSAGE IS DISPLAYED OR FUEL FILTER BYPASS INDICATOR IS POPPED a. Remove and replace fuel filter (TM 55-2840-256-23/TM 1-2840-263-23). b. Inspect the fuel system for possible contamination. c. Remove and replace gas producer fuel control filter assembly (TM 55-2840-256-23/TM 1-2840-263-23).		
14		ANY TIME HYDRAULIC FILTER BYPASS INDICATOR HAS POPPED Remove/clean/install hydraulic filter (Task 7-3-2).		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 19	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
5,8, 14		WHEN CHIP CAUTION MESSAGE IS CONTINUOUSLY DISPLAYED a. Serviceability check of main transmission (Task 6-1-1). b. Serviceability check of freewheeling unit (Task 6-1-2). c. Serviceability check of tail rotor gearbox (Task 6-1-3). d. Serviceability check of engine (TM 55-2840-256-23/TM 1-2840-263-23).		
5		ANY TIME ENGINE ASSEMBLY IS REPLACED DUE TO METAL CONTAMINATION a. Clean and inspect oil pressure transducer assembly (TM 55-2840-256-23/TM 1-2840-263-23). b. Flush oil lines and tank. c. Replace oil cooler (Tasks 6-8-24, 6-8-25, and 6-8-26).		
14		ANY TIME TRANSMISSION IS REMOVED AS A RESULT OF METAL PARTICLES a. If primary filter element trapped most of the metal particles, and secondary filter element is either clean or has less than 25% area covered by particles, accomplish the following: (1) Inspect freewheeling assembly chip detector. (2) Inspect P/N 50-075-1 filter in line between transmission and freewheeling assembly. b. If both filter elements have heavy accumulation of metal, accomplish the following: (1) Remove and replace oil cooler. (2) Remove and flush all external oil lines. (3) Clean and inspect P/N 50-075-1 oil filter in line between transmission and freewheeling assembly.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 20	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(4) Clean and inspect lube restrictors (two) in oil lines to freewheeling assembly.		
		(5) If lube blockage is found in step b. (3) or b. (4), remove freewheeling assembly and route to depot for overhaul.		
		(6) Inspect mast assembly roller bearing integral inner race (bottom end of mast) for damage from metal contamination.		
5		SUSPECTED FOREIGN OBJECT DAMAGE Refer to TM 55-2840-256-23/TM 1-2840-263-23 for damage inspection.		
5		AFTER SUSPECTED HOT START a. Inspect engine (TM 55-2840-256-23/TM 1-2840-263-23). b. Battery Inspection (TM 11-6140-203-23).		
5		AFTER POWER LOSS, NP DROOP, OR FLAMEOUT After a power loss, Np droop, or flameout occurs, check/inspect in accordance with the troubleshooting charts (TM 55-2840-256-23/TM 1-2840-263-23).		
All Areas		AFTER THE HELICOPTER HAS BEEN SUBJECTED TO SALT WATER OR SALT WATER SPRAY Wash entire helicopter with fresh water, particularly inside of engine compartment doors. Wash all components which were exposed to salt water and make a detailed check of all surfaces for corrosion. Apply corrosion preventive compound to exposed nonpainted, anodized, or cadmium plated assemblies (TM 1-1500-344-23). WHEN OPERATING FROM A BASE WITHIN 10 MILES OF SALT WATER OR WHEN HELICOPTER IS FLOWN BELOW 500 FEET OVER SALT WATER Rinse engine compressor after the last flight of each day (TM 55-2840-256-23/TM 1-2840-263-23).		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 21	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		AFTER WASHING HELICOPTER OR FLIGHT IN HEAVY RAIN a. Check pitot-static system for moisture. b. Check fuselage and tailboom attachment fittings for accumulation of water. c. Remove lower IFF antenna and check for water. d. Check main transmission and hydraulic reservoir for accumulation of water. Water and sludge accumulation must not exceed 10% of total amount drained. e. Check upper IFF antenna connector and cabin roof disconnect for corrosion. f. Fuel sample required. g. Lubricate MMS support bearing as required.		
14		WHENEVER HELICOPTER IS PARKED OUTSIDE IN HEAVY DEW ENVIRONMENT Lubricate MMS support bearing every 7 days.		
All Areas		LIGHTNING STRIKE INSPECTION a. General requirement whenever the helicopter is struck by lightning: (1) Inspect fuselage interior and exterior, landing gear, rotor systems and static ground wire for burn marks, cracks, pitting or other signs of high temperature stress to determine the lightning entry and exit points. (2) Trace the path of the lightning strike to the extent possible using a magnetometer. (3) Check the standby magnetic compass for accuracy (the degree of inaccuracy may serve as an indicator of the severity of the strike). (4) Inspect wiring in tunnel areas and exposed areas for burns. (5) Inspect antennas for burns and pitting.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 22	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIRE-MENT EVERY	ITEM	STA-TUS	RECORDED ON WORKSHEET
		(6) Inspect all electrically operated components and lighting systems for damage. (7) Inspect communications and navigation equipment for damage. (8) If the preceding steps (1) through (7) reveal major damage has occurred, proceed as follows: (9) Bench test all avionics and electrical systems and components. (10) Perform a continuity check on all wiring and cables. (11) Perform a Voltage Standing Wave Ratio (VSWR) check on all antennas, antenna cables, and connectors. Refer to individual -12 or -13 component manual. (12) Perform specific inspections/replacements as required. (13) Perform a ground run operational check on the helicopter. Functionally check the flight control system and all avionics, electrical, lighting, communication, and navigation systems. (14) Repair any damage and replace damaged components as required using standard maintenance practices. b. Specific requirements whenever lightning strike is evident on main rotor system: (1) Evaluate and repair blades as necessary. Forward blades to next level of maintenance if not repairable at this level. (2) Replace all bearings (or next higher assembly if required) in the fixed and rotating control system located above the servo cylinders. (3) Remove swashplate assembly, torquemeter support assembly, mast assembly and transmission assembly and return for overhaul. (4) Check driveshafts for residual magnetism. If magnetized or damaged, replace driveshafts and remove engine and return for overhaul.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 23	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIRE-MENT EVERY	ITEM	STA-TUS	RECORDED ON WORKSHEET
		c. Specific requirements whenever lightning strike is evident on tail rotor system: (1) Evaluate and repair blades as necessary. Forward blades to next level of maintenance if not repairable at this level. (2) Tail rotor hub: Scrap locally. (3) Remove and condemn pitch change links and crosshead assembly. (4) Inspect crosshead and control rod for any indications of arcing. Replace as necessary. (5) Remove tail rotor gearbox and return for overhaul. (6) Replace any magnetized tail rotor driveshaft hanger bearings. (7) Check disc packs, blower assembly, splined adapter, freewheeling assembly, main driveshaft and tail rotor driveshaft for residual magnetism. Replace as necessary. (8) Inspect oil cooler and scavenge engine oil filter assembly for damage. Replace as necessary. (9) If previous drive train items show magnetism, remove transmission and return for overhaul. (10) If freewheeling assembly shows magnetism, remove engine assembly and return for overhaul. (11) Inspect engine mount legs and trunnions and fuselage attachment points for cracks and damage. (12) Inspect mast mounted sight for external damage. Operationally check sight for evidence of damage. If operation is impaired, remove from helicopter and return for overhaul.		

(TABLE I.D. 922568)

AIRCRAFT INSPECTION CHECKSHEET	TABLE OF INSP. (Daily, Intermediate, etc.) ON CONDITION INSPECTIONS	PAGE NO. 24	NO. OF PAGES 24
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
All Areas		AFTER PROBABLE EXPOSURE TO NBC CONTAMINATION Accomplish the following: a. Survey helicopter for level of contamination. b. Decontaminate helicopter as required (FM 3-5 and DA PAM 738-751).		
		AFTER HELICOPTER HAS REMAINED INACTIVE FOR FOURTEEN (14) CONSECUTIVE DAYS Process the helicopter into the appropriate storage category (Appendix E).		
All Areas		WHENEVER HELICOPTER IS TRANSFERRED, RECEIVED, PLACED IN STORAGE, OR REMOVED FROM STORAGE. Check and account for all inventoriable property (not required while helicopter is in storage) (TM 1-1500-204-23).		
2, 13		ANY TIME ENERGY ATTENUATING SEATS ARE ACTUATED. Inspect all components of energy attenuating seats (Tasks 2-2-19, 2-2-23, 2-2-28, 2-2-30, 2-2-32, 2-2-35, 2-2-37, 2-2-39, 2-2-43).		

(TABLE I.D. 922568)

Section X. OVERHAUL AND RETIREMENT SCHEDULE

1-59. OVERHAUL AND RETIREMENT SCHEDULE

This section lists units of operating equipment that are to be overhauled or retired at the period specified. Removal of equipment for overhaul may be accomplished at the inspection nearest the time when overhaul is due unless otherwise specified in TM 1-1500-328-23.

a. Overhaul Interval. The maximum authorized operating time or calendar interval of parts prior to removal for overhaul at category of maintenance authorized in accordance with the Maintenance Allocation Chart.
b. Retirement Schedule. The operating time or calendar interval specified for removal, condemnation, and disposal of parts in accordance with applicable directives.

Table 1-9. Overhaul and Retirement Schedule

PART NUMBER AND ITEM		OVERHAUL INTERVAL (HOURS)	RETIREMENT INTERVAL (HOURS)
MAIN ROTOR			
406-010-100-121	Main rotor hub assembly	2400	-
406-010-101-109	Main rotor yoke	-	4800
406-010-108-115	Main rotor grip	-	3600
406-010-111-105	Main rotor pitch horn	-	4800
406-010-115-109	Main rotor upper plate	-	2400
406-010-117-109	Main rotor lower plate	-	2400
406-015-101-103	Main rotor blade	-	On condition
406-310-101-103	Shear bearing assembly	-	4800
406-010-126-101	Drive ring set	-	2400
MAIN ROTOR CONTROLS			
206-076-031-005	Collective actuator	-	On condition
-007,-011,-015		-	-
-105		-	-
406-010-401-103,-111	Swashplate and support assembly	2400	-
406-010-411-105,-113	Swashplate outer ring	-	4800
406-010-410-109,-115	Swashplate inner ring	-	4800
406-010-417-105	Swashplate bearing and liner	-	4800
406-010-425-105	Swashplate drive lever	-	4800
406-010-426-105	Swashplate drive link	-	4800
406-010-427-107	Swashplate gimbal ring	-	4800
406-010-428-107	Swashplate drive hub set	-	4800
406-010-431-105	Antidrive lever	-	4800
406-010-432-105	Antidrive link	-	4800
406-076-101-105	Cyclic servoactuator	2400	-
TAIL ROTOR CONTROLS			
406-016-100-109,-115	Tail rotor blade	-	9600
406-076-102-103	Actuator	2400	-
DRIVE SYSTEM			
406-040-006-107,-111	Main transmission	2400	-
406-040-007-103	Main transmission	2400	-
406-340-100-101	Oil pump	2400	-

Table 1-9. Overhaul and Retirement Schedule (Cont)

PART NUMBER AND ITEM		OVERHAUL INTERVAL (HOURS)	RETIREMENT INTERVAL (HOURS)
406-040-500-103,-111	Freewheeling shaft assembly	2400	-
406-040-516-101	Clutch input shaft	-	4800
406-040-517-101	Clutch output shaft		4800
406-040-400-107,-113	Tail rotor gearbox	2400	-
406-040-011-105,-107	Mast assembly	2400	-
406-040-040-109	Main rotor mast	-	4800
406-040-300-105	Input driveshaft	2400	4800
406-040-747-101	Standpipe	-	△1 9600
PYLON SUPPORT COMPONENTS			
406-010-201-105	Left side beam	-	△2 3600
406-010-202-105	Right side beam	-	△2 3600
406-010-203-101	Fwd transverse beam	-	△2 3600
406-010-204-101	Aft transverse beam	-	△2 3600
406-010-206-107	Restraint spring assy	-	△3 4800
406-010-217-101	Corner mount	-	△4 4800
406-010-232-105	Restraint spring fitting	-	3600
406-010-232-106	Restraint spring fitting		3600
406-040-052-101	Transmission top case	-	4800
ARMAMENT			
1377-MD66	Impulse cartridges	△5	36 Months
CARGO HOOK			
406-706-001-101	Cargo hook	-	36 Months

NOTES:

△1 406-075-149-103, -107 standpipe assembly will be removed and disposed of when the 406-040-747-101 standpipe reaches retirement interval.

△2 Replace at adjusted component hours equal to 3600 or adjusted component landings equal to 6500, whichever occurs first. An adjustment of 3.6 hours and 6.5 landings is required for each autorotation.

△3 Replace at 4800 hours or 9900 landings, whichever occurs first.

△4 Replace at 4800 hours or 20,000 landings, whichever occurs first.

△5 Not to exceed shelf life specified in TB 9-1300-385, or 36 months from the date of opening the sealed cartridge container (installed life). Explosive life is not additive and therefore cartridge replacement is required whenever any of the conditions are reached.

Section XI. FLIGHT SAFETY PARTS

1-60. FLIGHT SAFETY PARTS

This manual contains procedures identifying critical characteristics of flight safety parts installed on the helicopter. Critical characteristics may be identified as dimensions, tolerances, finishes, materials, assembly, or inspection procedures. Flight safety parts identified as having a maximum allowable limit shall not be used when limits have been exceeded. These parts must be replaced.

1-61. FLIGHT SAFETY PARTS PROGRAM

Parts, assemblies, or installations identified under the flight safety parts program require special handling during maintenance. Throughout the maintenance procedures, warnings appear emphasizing critical instructions to be followed. These warnings are identified as "Flight Safety Critical Aircraft Parts" (FSCAP) and are inserted as required.

a. A flight safety part is defined as a part, assembly, or installation procedure with one or more critical characteristics that, if not conforming to the design data or quality requirements, could result in the loss or serious damage to the helicopter and/or serious injury or death of crew members.
b. A critical characteristic is any dimension, tolerance, finish, material, manufacturing, assembly or inspection process, or other feature which, if nonconforming or missing, could cause failure or malfunction of the critical item.
c. Table 1-10 is a list of the existing components of the flight safety critical aircraft parts program. Included are the assembly and component part numbers for easy identification. This list is subject to change and will require updating.

Table 1-10. Flight Safety Parts

PART NUMBER	NOMENCLATURE
206-052-103-103	Forward Crosstube (Part of 206-052-103-101)
206-064-111-101	Engine Mount Trunnion
206-076-031-105	Collective Servo Actuator
406-001-020-105	Tube (Part of 406-001-020-109)
406-001-020-109	Tube Assembly
406-001-021-105	Tube (Part of 406-001-021-111, -113)
406-001-021-111	LH Connecting Link
406-001-021-113	RH Connecting Link
406-001-022-103	Adjustable Tube Assembly (Part of 406-001-022-101)
406-001-022-105	Tube (Part of 406-001-022-103)
406-001-023-115	Adjustable Tube Assembly (Part of 406-001-023-113)
406-001-023-117	Tube (Part of 406-001-023-115)
406-001-024-107	Fixed Tube Assembly
406-001-024-109	Tube (Part of 406-001-024-107)
406-001-024-111	Tube (Part of 406-001-024-107)
406-001-025-101	Connecting Link
406-001-025-103	Tube (Part of 406-001-025-101)
406-001-027-103	Tube Assembly (Part of 406-001-027-101)
406-001-027-105	Tube (Part of 406-001-027-103)
406-001-336-105	Bellcrank Assembly
406-001-352-105	Stud Assembly
406-001-500-101	Actuator Support Assembly
406-001-500-103	Support (Part of 406-001-500-101)
406-001-504-105	Bellcrank
406-001-504-107	Bellcrank (Part of 406-001-504-105)
406-001-505-105	LH Bellcrank Assembly
406-001-505-106	RH Bellcrank Assembly

Table 1-10. Flight Safety Parts (Cont)

PART NUMBER	NOMENCLATURE
406-001-505-107	Bellcrank (Part of 406-001-505-105)
406-001-505-108	Bellcrank (Part of 406-001-505-106)
406-001-506-101	Support Assembly
406-001-506-103	Support (Part of 406-001-506-101)
406-001-507-101	Connecting Link
406-001-800-103	Actuator and Support Assembly
406-001-702-101	Idler Assembly
406-001-704-101	Bellcrank
406-010-100-121	Main Rotor Hub Assembly
406-010-101-109	Main Rotor Yoke Assembly
406-010-108-107	Main Rotor Grip (Part of 406-010-108-115)
406-010-111-107	Pitch Horn (Part of 406-010-111-105)
406-010-115-107	Plate (Part of 406-010-115-109)
406-010-117-107	Plate (Part of 406-010-117-109)
406-010-120-103	Bolt (Part of 406-010-120-101)
406-010-126-103	Ring Half (Part of 406-010-126-101)
406-010-126-105	Ring Half (Part of 406-010-126-101)
406-010-137-103	Main Rotor Lower Cone Seat
406-010-143-101	Yoke (Part of 406-010-101-111)
406-010-201-107	Beam (Part of 406-010-201-105)
406-010-202-107	Beam (Part of 406-010-202-105)
406-010-203-101	Forward Beam
406-010-204-101	Aft Beam
406-010-210-101	Pylon Mount Bolt
406-010-214-101	Self-Locking Nut
406-010-217-101	Corner Pylon Mount
406-010-218-109	Pitch Restraint Spring
406-010-220-101	Restraint Cap Assembly
406-010-232-103	Fitting (Part of 406-010-232-101)
406-010-232-104	Fitting (Part of 406-010-232-102)
406-010-232-107	Fitting (Part of 406-010-232-105)
406-010-232-108	Fitting (Part of 406-010-232-106)
406-010-401-103	Swashplate and Support Assembly
406-010-401-111	Swashplate and Support Assembly
406-010-406-107	Support (Part of 406-010-406-109)
406-010-409-103	Sleeve (Part of 406-010-409-105)
406-010-410-107	Ring (Part of 406-010-410-109)
406-010-410-117	Ring (Part of 406-010-410-115)
406-010-411-107	Ring (Part of 406-010-410-105)
406-010-411-115	Ring (Part of 406-010-411-103)
406-010-413-105	Tube (Part of 406-010-413, -115)
406-010-417-105	Swashplate Bearing and Liner
406-010-425-105	Swashplate Drive Lever
406-010-426-105	Swashplate Drive Link
406-010-427-107	Swashplate Gimbal Ring
406-010-428-107	Swashplate Drive Hub Set
406-012-102-103	Yoke (Part of 406-012-102-105)
406-012-102-105	Tail Rotor Yoke Assembly
406-012-104-105	Tail Rotor Control Rod Driver Plate
406-012-108-103	Pitch Horn (Part of 406-012-108-105)
406-012-115-103	Tail Rotor Crosshead

Table 1-10. Flight Safety Parts (Cont)

PART NUMBER	NOMENCLATURE
406-012-118-103	Tail Rotor Pitch Control Tube Assembly (Part of 406-102-118-101)
406-015-101-113	Main Rotor Blade Assembly
406-016-100-109	Tail Rotor Blade Assembly
406-016-100-115	Tail Rotor Blade Assembly
406-040-006-107	Transmission Assembly
406-040-006-113	Transmission Assembly
406-040-007-103	Transmission Assembly
406-040-011-105	Mast Assembly
406-040-011-107	Mast Assembly
406-040-029-101	Planetary Sun Gear
406-040-040-105	Mast Assembly
406-040-040-107	Mast (Part of 406-040-040-105)
406-040-040-109	Mast Assembly
406-040-040-111	Mast (Part of 406-040-040-109)
406-040-095-101	Planetary Gear Pinion
406-040-300-105	Input Driveshaft Assembly
406-040-314-101	Forward Driveshaft Flanged Adapter (Part of 406-040-315-105)
406-040-315-105	Forward Tail Rotor Driveshaft Assembly
406-040-315-107	Tube (Part of 406-040-315-105)
406-040-316-101	Tail Rotor Drive Splined Adapter
406-040-317-101	Forward Hanger Bearing
406-040-320-101	Tail Rotor Fan Shaft
406-040-321-101	Aft Bearing Hanger Bracket
406-040-322-101	Tail Rotor Drive Hanger
406-040-322-103	Tail Rotor Drive Bearing Hanger
406-040-323-101	Tail Rotor Driveshaft Forward Support Bracket
406-040-324-101	Tail Rotor Gearbox Flanged Adapter
406-040-325-105	Aft Tail Rotor Driveshaft Assembly
406-040-325-107	Tube (Part of 406-040-325-105)
406-040-328-103	Tail Rotor Drive Coupling Adapter
406-040-329-101	Bonded - Splined Tail Rotor Drive Adapter
406-040-330-105	Segmented Tail Rotor Driveshaft Assembly
406-040-330-107	Tube (Part of 406-040-330-105)
406-040-340-101	Tail Rotor Drive Coupling Disc-Pack
406-040-400-107	Tail Rotor Gearbox Assembly
406-040-400-113	Tail Rotor Gearbox Assembly
406-040-408-101	Tail Rotor Gearbox Cap Assembly
406-040-408-103	Cap (Part of 406-040-408-101)
406-040-440-101	Tail Rotor Input Adapter
406-040-500-103	Freewheeling Shaft Assembly (Part of 406-040-500-101)
406-040-500-111	Freewheeling Shaft Assembly (Part of 406-040-500-109)
406-040-516-101	Clutch Input Shaft (Part of 406-040-500-109)
406-040-517-101	Clutch Output Shaft (Part of 406-040-500-109)
406-040-542-101	Freewheeling Clutch Assembly Transmission Drive Adapter
406-040-542-103	Freewheeling Clutch Assembly Transmission Drive Adapter
406-040-550-101	Freewheeling Clutch Assembly Output Adapter
406-040-580-103	Freewheeling Clutch Sprag and Retainer Assembly
406-052-006-103	Aft Crosstube (Part of 406-052-006-101)
406-076-101-105	Cyclic Servo Actuator
407-076-102-103	Directional Control Servo Actuator
406-310-100-105	Main Rotor Hub Damper

Table 1-10. Flight Safety Parts (Cont)

PART NUMBER	NOMENCLATURE
406-310-101-103	Shear Bearing
406-310-103-101	Main Rotor Blade Expandable Bolt
406-310-107-103	Lead-Lag Bearing
406-310-200-101	Pylon Spring Rod-End Assembly
406-310-405-101	Airframe Roller Bearing
406-312-101-101	Flapping Bearing
406-312-103-101	Tail Rotor Pitch Link

CHAPTER 2

AIRFRAME

2-1. AIRFRAME

Repair at AVUM is limited to minor repair of sheet metal cracks, scratches, corrosion, and loose or missing hardware. The repair can be accomplished using the airframe repairer tool kit and portable hand tools. If any extensive damage occurs or major repair is required, repair shall be accomplished by AVIM. Repair at AVIM is limited to repair of sheet metal cracks, scratches, corrosion, holes, and loose or missing hardware. If major damage occurs requiring jigs and fixtures, repair shall be accomplished by next higher maintenance level.

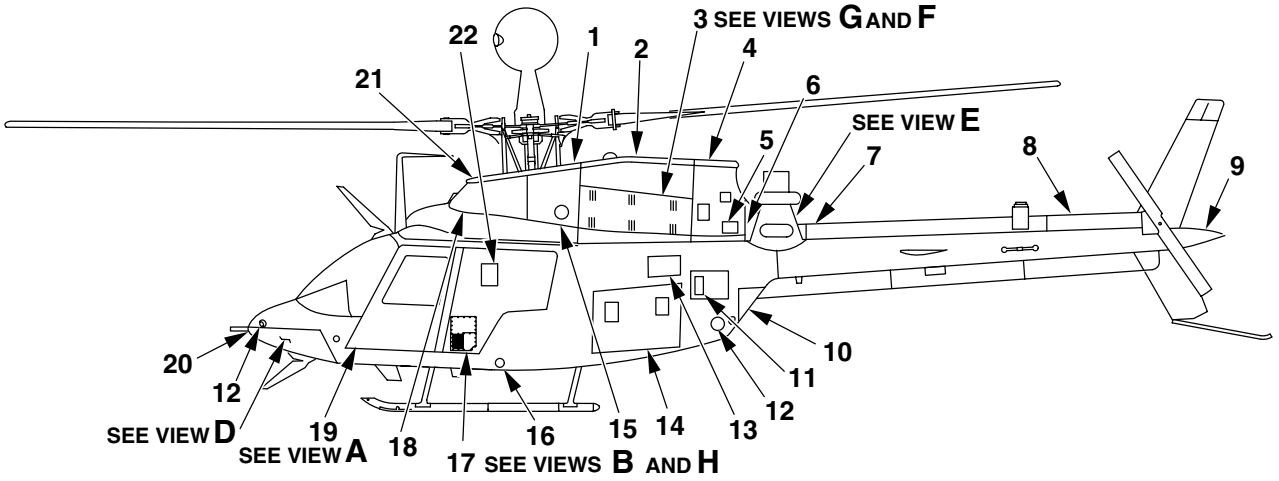
Structural repairs described in this chapter are intended for use in conjunction with TM 1-1500-204-23 General Aircraft Maintenance Manual. The damage limits provided in this chapter on bonded panels are not intended to ground the helicopter. The limits are to provide guidance for scheduling repair or replacement at the next scheduled maintenance interval. When damage limits, particularly bond voids in bonded panels, are exceeded, the responsible maintenance authority will establish a recurring special inspection on the damaged area until the damage to the structure is corrected. If the damage is in an area that requires engineering authority to repair, engineering should be contacted in writing with a description of damage. If Depot assistance will be required, unit should contact AMSAM-MMC-LS-DP with your requirement.

Section I. COWLINGS, FAIRINGS, ACCESS PANELS, AND DOORS

2-2. COWLINGS, FAIRINGS, ACCESS PANELS, AND DOORS

2-3. INTRODUCTION

This section contains illustrations that list and describe the helicopter cowlings, fairings, access panels, and doors. The illustrations also list the major components or airframe features that are located inside the cowlings, fairings, access panels, and doors.



Index No.	Description	Access
1	Work platform cowling	Particle separator
2	Cowl duct assembly	Engine, engine exhaust system and navigation light connector
3	Engine cowling left door	Engine, oil hoses, engine mounts and AC generator
4	Aft fairing assembly	Oil tank, filter, blower, cooler, bypass relay, solenoid bypass valve, T/R bearing, support and driveshaft
5	Oil tank drain access door	Oil tank drain valve
6	Aft fairing extension	Forward tail rotor driveshaft
7	Forward tail rotor driveshaft cover	Tail rotor driveshaft and electrical cable
8	Aft tail rotor driveshaft cover	Tail rotor driveshaft, bearing and bearing support
9	Taillight support	Electrical wires and position light
10	Antenna access panel	Antenna mount support
11	Cover	Laser sensor unit (AVR-2A) (GFE)
12	Cover	APR-39A antenna (GFE), see view D
13	Access panel	Antitorque control cylinder, electrical wires, transmission (press) oil line and SCAS actuator
14	Aft electrical compartment door	Aft electrical compartment
15	Left induction access door	Pylon mounts, pitch restraint link, transmission oil filter and main driveshaft (fwd end)
16	Cover	Universal weapons pylon attach point (UWP is GFE installed)
17	Access door	FWD electrical compartment and fuel quantity probe
18	Access door	Hydraulic reservoir
19	Crew door	CPG crewstation, static pressure lines and static port
20	Access door	DC external power connection, see view D
21	FWD fairing assembly	Hydraulic control cylinders, reservoir, hydraulic cart connections, pump, hoses, pressure switch, pylon mounts, damper, filters, flight controls, M/R hub, and swashplate
22	Cover	Laser sensor unit (AVR-2A) (GFE)

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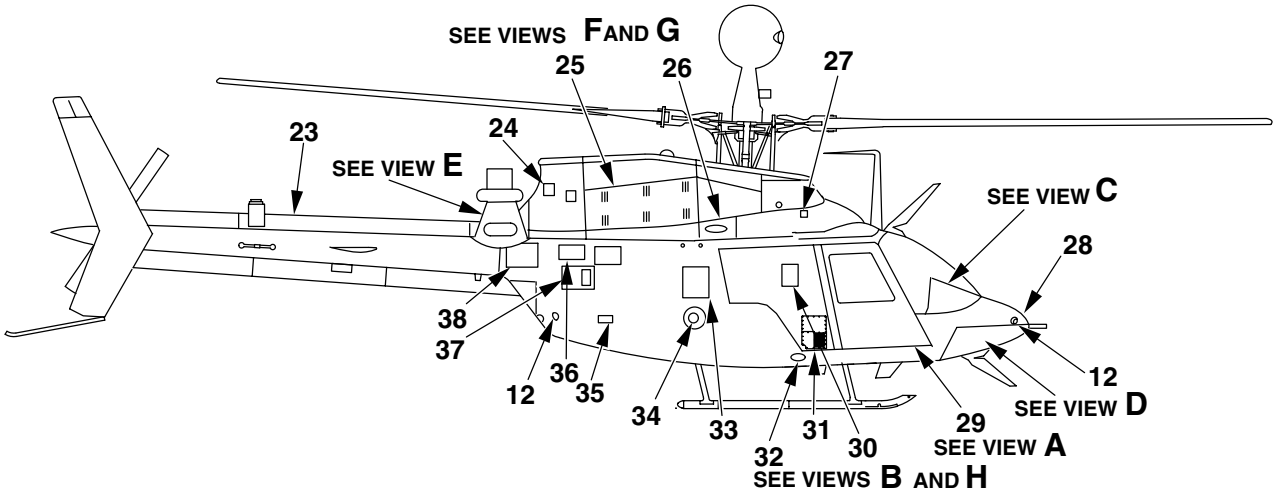
Cowlings, Fairings, Access Panels, and Doors (Sheet 1 of 7)



Index No.	Description	Access
12	Cover	APR-39A antenna (GFE), see view D
23	Fwd tail rotor driveshaft cover assembly	Tail rotor driveshafts, bearings, bearing supports, and EGI electrical cable
24	Access door	Oil filler cap
25	Engine cowling right door	Engine, oil hoses, engine mounts, starter/DC generator and ignitor
26	Right induction access door	Pylon mounts, pitch restraint link, oil level sight, and main driveshaft (fwd end)
27	Inspection door	Hydraulic filters, transmission
28	Nose door	Battery, relay/ICS switch (2301J1), fuel control circuit breaker, battery vent, and drain hose
29	Crew door	Pilot crewstation, antitorque pedals, instrument panel, consoles and static pressure lines and port
30	Cover	Laser sensor unit (AVR-2A) (GFE)
31	Access door	Fwd electrical compartment
32	Cover	Universal weapons pylon attach point (GFE)
33	Access panel	Fuel system components
34	Cap	Fuel filler
35	Access door	AC external power connection
36	Access cover	Antitorque servoactuator, force gradient, mag brake
12	Cover	APR-39A antenna (GFE)
37	Cover	Laser sensor unit (AVR-2A) (GFE)
38	Tailboom access panel	Antitorque control tubes, lever and stops

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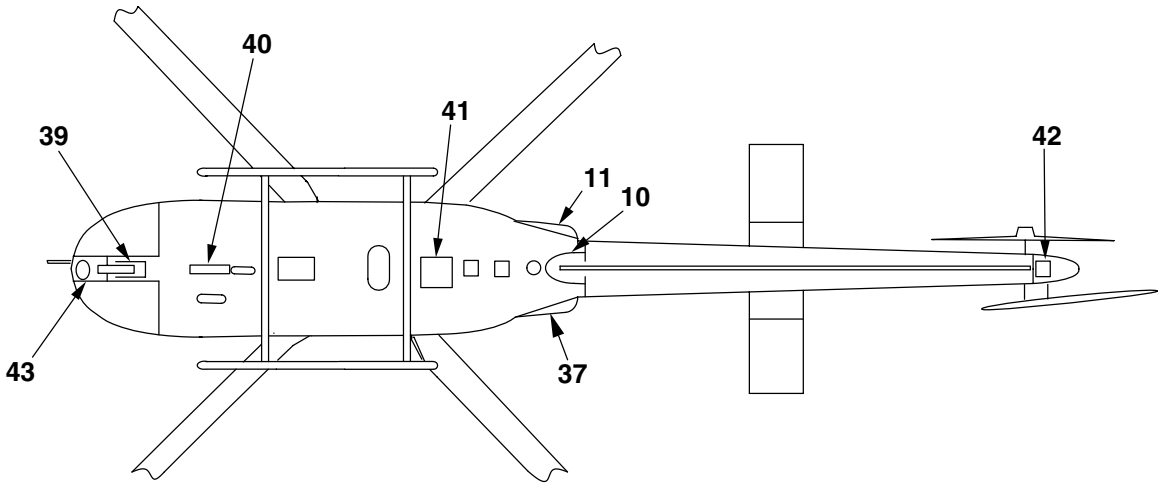
Cowlings, Fairings, Access Panels, and Doors (Sheet 2 of 7)



Index No.	Descriptlon	Access
10	Antenna access panel	Antenna mount support
11	Cover	Laser sensor unit (AVR-2A) (GFE)
37	Cover	Laser sensor unit (AVR-2A) (GFE)
39	Tail rotor control bellcrank access panel	Antltorque control tubes, tall rotor control bellcrank and support, see vlew D
40	Access cover (antenna plate)	Antenna connector
41	Amblent temperature access panel	Electrical wiring, OAT bulb (18RT1) connector
42	Tail rotor gearbox access panel	Antitorque pltch change tube, bellcrank, and navlgatlon light wlrlng
43	Access opening	Landing/searchlight, battery drain hose and tube, battery TB, and electrical wiring (with light fully extended)

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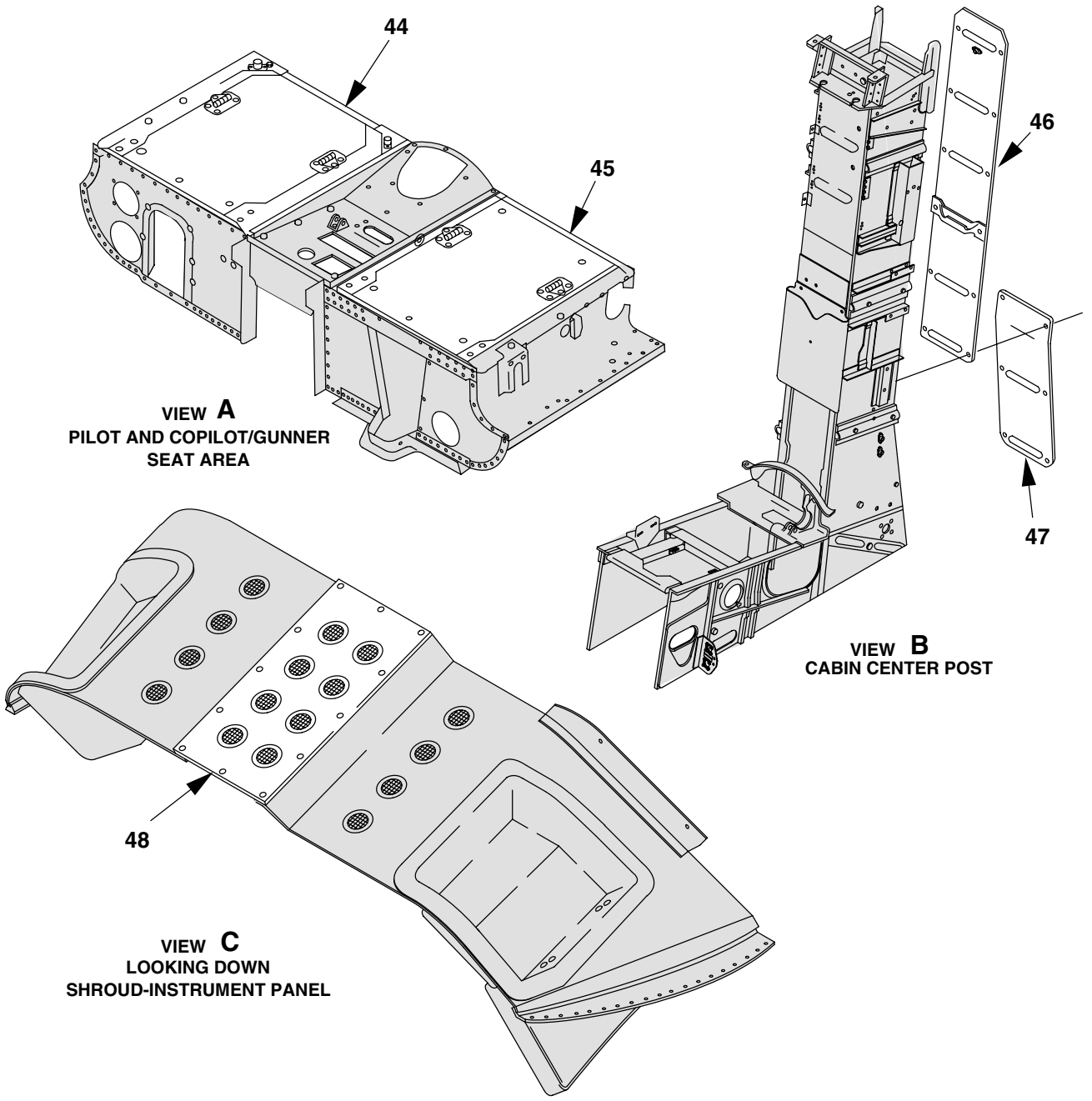
J2142

Cowlings, Fairings, Access Panels, and Doors (Sheet 3 of 7)



Index No.	Description	Access
44	Access panel	Cyclic/collective controls, see view A
45	Access panel	Cyclic/collective controls and potentiometers, see view A
46	Access cover	Flight control tubes and upper bellcrank, see view B
47	Access cover	Flight control tubes and lower bellcrank, see view B
48	Access cover	Remote frequency display (RFD), torque/turbine gas indicator, dual tachometer, and electrical connectors, see view C

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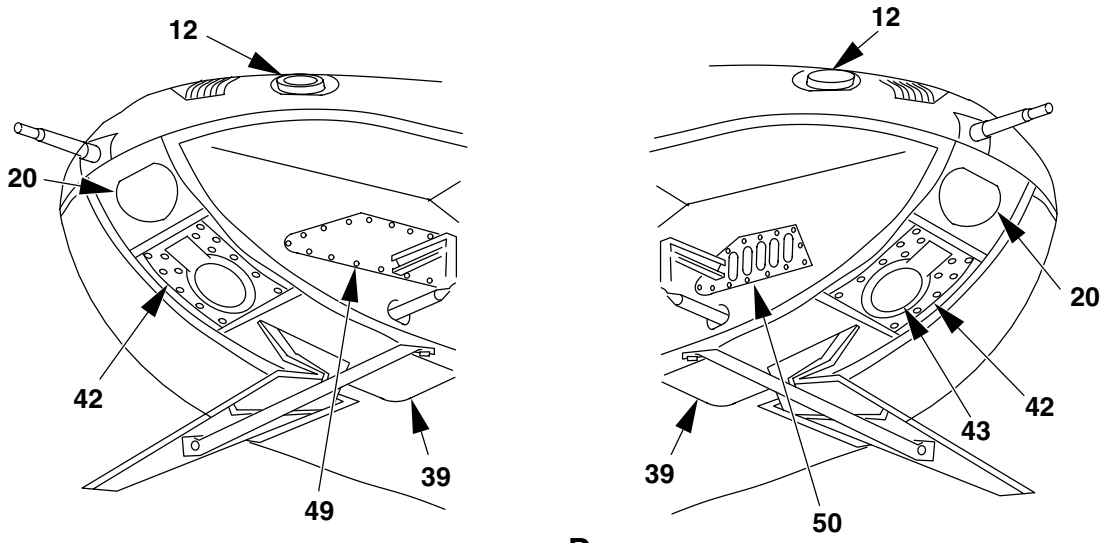
J1999

Cowlings, Fairings, Access Panels, and Doors (Sheet 4 of 7)



VIEW **D**
LOOKING UP AT NOSE

Index No.	Description	Access
12	Cover	APR-39A antenna (GFE), see view D
20	Access door	DC external power connection, see view D
39	Tail rotor control bellcrank access panel	Antitorque control tubes, tail rotor control bellcrank and support, see view D
42	Searchlight mounting panel	Navigation light wiring, see view D
43	Access opening	Landing/searchlight, battery drain hose and tube, battery TB, and electrical wiring (with light fully extended)
49	Access panel	Deleted
50	Access panel	Deleted

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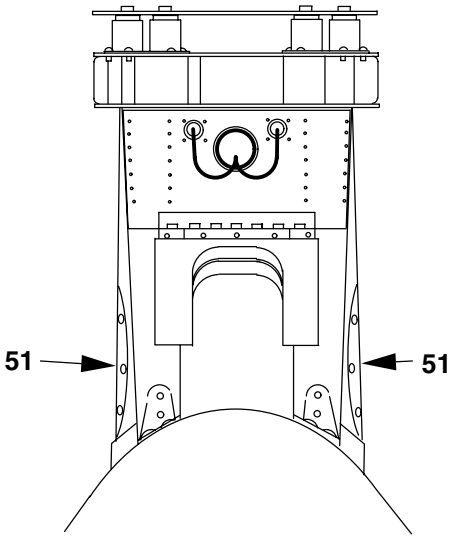
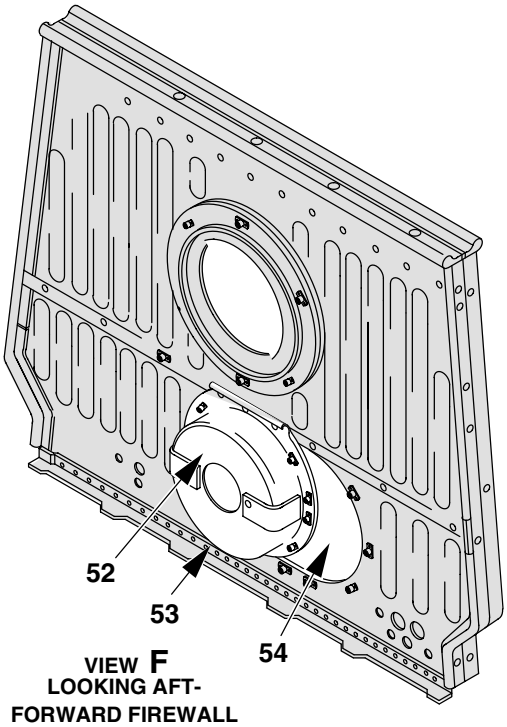
J2142

Cowlings, Fairings, Access Panels, and Doors (Sheet 5 of 7)



VIEW **E**
LOOKING FORWARD
AT FUSELAGE AND TAILBOOM



VIEW **F**
LOOKING AFT-
FORWARD FIREWALL

Index No.	Description	Access
51	Access cover	Forward tail rotor driveshaft, electrical wiring, see view E
52	Firewall cover assembly (upper)	Main driveshaft, see view F
53	Firewall cover assembly (lower)	Main driveshaft, see view F
54	Access coverplate	Main driveshaft, see view F

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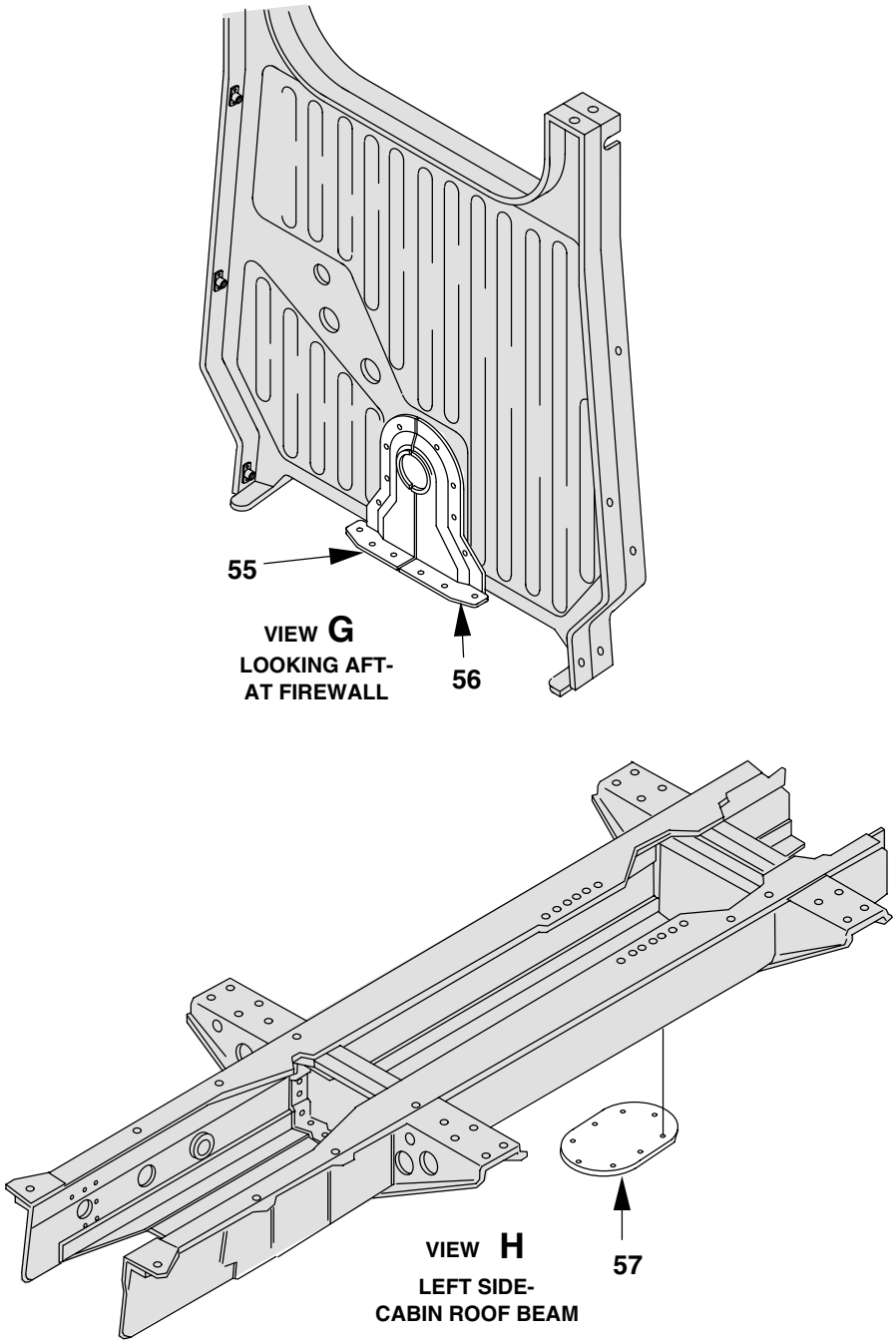
J1999

Cowlings, Fairings, Access Panels, and Doors (Sheet 6 of 7)



Index No.	Description	Access
55	Aft firewall pan, right	Fan shaft, see view G
56	Aft firewall pan, left	Fan shaft, see view G
57	Access panel	Transverse beam, see view H

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J1999

Cowlings, Fairings, Access Panels, and Doors (Sheet 7 of 7)

Section II. FUSELAGE (COWLINGS, FAIRINGS, ACCESS PANELS, AND DOORS)

2-4. FUSELAGE

2-5. INTRODUCTION

This section contains: maintenance procedures for cleaning, inspection, repair, and replacement of access doors, seats, forward fairing, engine cowling, aft fairing, wire cutters, center post duct, protective coatings, bonding, chemical coating, and flame spray coatings. Standard torques are provided in Appendix P and TM 1-1500-204-23.

2-6. TASK LIST

The task list consists of tasks required to support unit and intermediate level maintenance.

LIST OF TASKS

LIST OF TASKS (CONT)

LIST OF TASKS (CONT)

2-2-1. ACCESS DOOR — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 1-1500-344-23

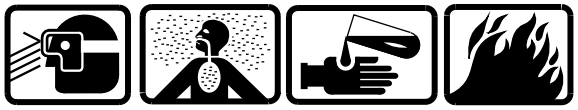
Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-1. ACCESS DOOR — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

1. Clean access door (1) (Task 1-4-11).



Drycleaning Solvent

2. Use drycleaning solvent (D199) and wiping rags (D164) to remove oil and grease for purpose of inspection.

3. Use wiping rags (D164) to dry access door (1).

INSPECT

4. Inspect door panel (2) to determine if negligible or reparable damage exists.

a. Negligible damage:

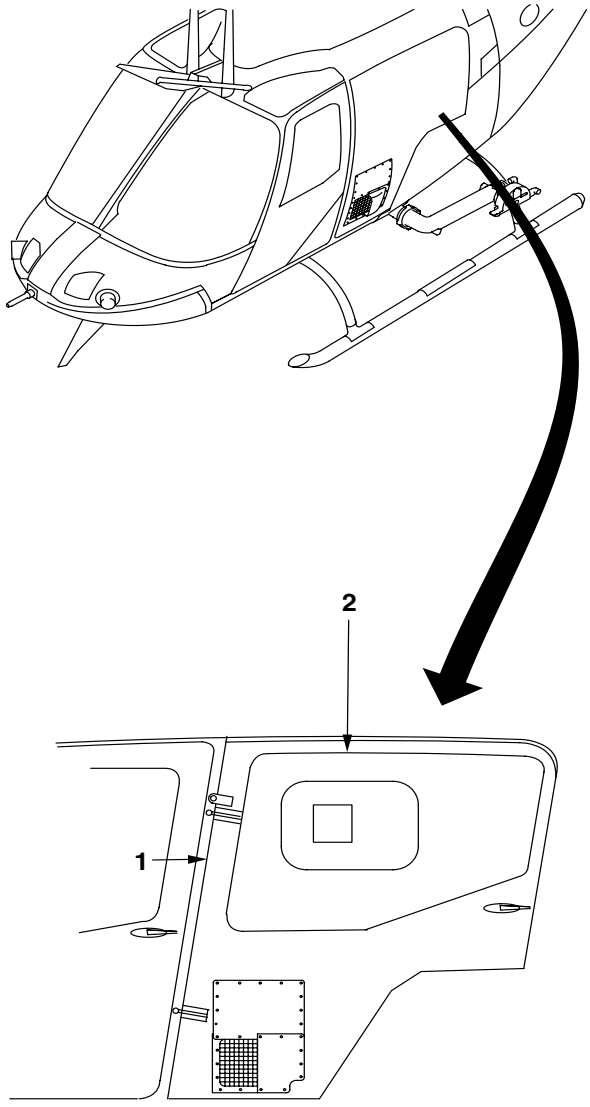
(1) Nicks and Scratches — Away from radius areas, less than **2.00 inches** long and less than 10 percent of material thickness in depth after cleanup.

(2) Smooth Contoured Dents — Free of cracks or nicks. A minimum of **1.00 inch** undamaged material must exist between dents and supporting structure or edges. Dent limits are as follows:

DIAMETER (INCH)	DEPTH (INCH)
1.00	0.015
2.00	0.046
3.00	0.062

(3) Corrosion Damage — Less than 10 percent of material thickness in depth and covering less than 10 percent of panel area after cleanup and treatment (TM 1-1500-344-23).

b. Reparable damage (exceeding negligible damage) are repairs limited to skin damage of areas smaller than 20 percent of skin panel area, and replacement of any loose or missing rivets.



(TYPICAL)

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GO TO NEXT PAGE

2-2-1. ACCESS DOOR — CLEANING/INSPECTION/REPAIR (CONT)

5. Inspect latch parts (3) (Task 2-2-3).

6. Inspect hinge halves (4 and 5) (Task 2-2-4).

7. Inspect quick-disconnect hinge pins (6) (Task 2-2-4).

8. Inspect lanyards (7) (Task 2-2-4).

9. Inspect chafing strips (8 and 9) (Task 2-2-5).

10. Inspect door seals for the following damage:

a. Cracks

b. Cuts

c. Worn areas

d. Deterioration.

REPAIR

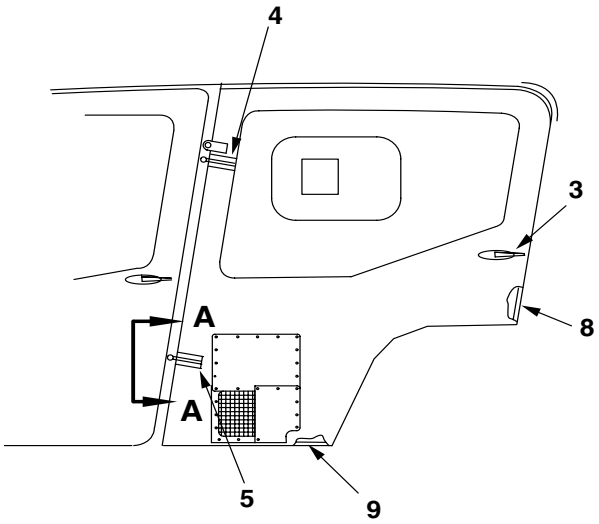
11. Repair damage which exceeds negligible damage limits.

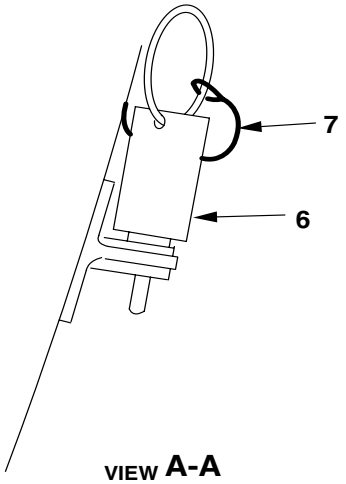
12. Replace access door if damage exceeds 20 percent of door skin area.

13. Replace access door if damage inhibits normal usage of door.

14. Repair cracks, cuts, and punctures (TM 1-1500-204-23).

15. Replace missing hardware, damaged fasteners, and loose and missing rivets using accepted sheet metal practices in accordance with TM 1-1500-204-23.





VIEW **A-A**
LOOKING AFT
LEFT SIDE

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J2142

END OF TASK

2-2-2. AIR INLET IN ACCESS DOOR — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Personnel Required:
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

REMOVE

NOTE

- Procedure for replacing air inlet for access door on right side is the same as the procedure shown for left side.

1. Remove rivet (1) in accordance with TM 1-1500-204-23.

2. Remove washer (2) and spacer (3).

3. Remove 14 screws (4) and washers (5).

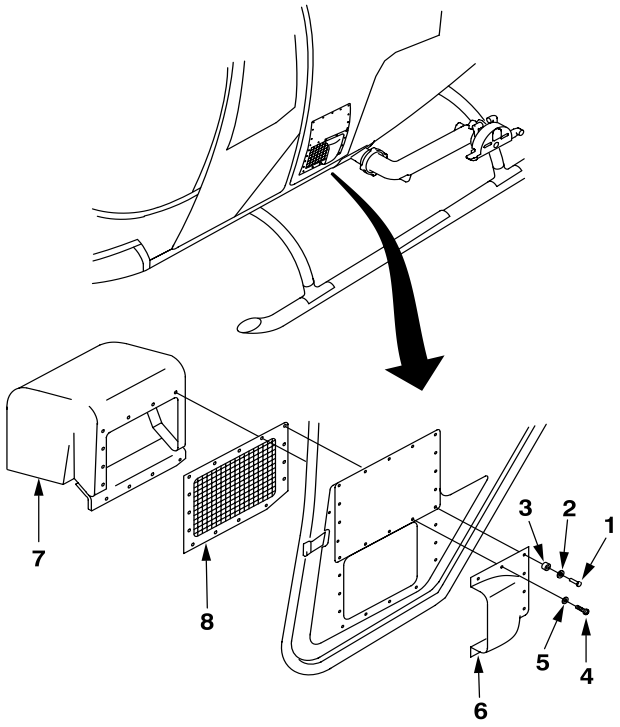
4. Pull air inlet (6), duct assembly (7), and screen (8) from door.

INSTALL

5. Install screen (8), duct assembly (7), and air inlet (6) with spacer (3), washer (2), and rivet (1), as shown in illustration, in accordance with TM 1-1500-204-23

6. Slide screen (8) to the correct position.

7. Install 14 washers (5) and screws (4).



END OF TASK

2-2-3. ACCESS DOOR LATCH ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Low-Lint Cleaning Cloth (D67)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-344-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

CLEAN

Drycleaning Solvent

NOTE

- Procedure for cleaning, inspecting, and repairing latch assembly for right access door is similar to procedure shown for left access door.
- Disassembly shall be done only to the extent necessary for cleaning, inspection, and repair.

1. During disassembly use drycleaning solvent (D199) and low-lint cleaning cloths (D67) to clean parts as required for inspection.

2. Use low-lint cleaning cloths (D67) to dry parts.

GO TO NEXT PAGE

2-2-3. ACCESS DOOR LATCH ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

DISASSEMBLE

3. Open left or right access door (1).

NOTE

- Door assembly 406-961-027-109 has handle assembly AR133 with handle guard 206-032-526-2. Door assembly 406-961-027-107 has handle assembly shown in illustration Access Door Latch Assembly. Removal of handle assembly AR133 is the same as handle in step 6.
- Step 4. applies to door assembly P/N 406-961-027-107 only.

4. Remove roll pin (2) and handle (3). Remove two screws (4) and escutcheon (5). Remove washer (6) and spacer (7).

NOTE

Step 5. applies to door assembly P/N 406-961-027-109 only.

5. Remove screw (8), handle (9), two screws (10), escutcheon (11), and handle guard (12).

6. Remove two screws (13), two washers (14), escutcheon (15), and handle (16).

7. Remove spindle (17) and screw (18) from handle (16).

8. Remove retaining ring (19) and remove handle (16) from escutcheon (15).

9. Remove seven screws (20) and seven washers (21) from support (22).

10. Pull support (22) clear of door.

11. Remove cotter pin (23) and discard. Remove pin (24) from rod (25).

12. Remove cotter pin (26) and discard. Remove washer (27) from pin (28) and remove link (29) from lever (30).

13. Remove spring (31) and remove rod (25).

14. Knock out pin (32) and pull out spindle (33) from bellcrank (34).

15. Remove cotter pin (35) and discard. Remove pin (36). Remove bellcrank (34) and receptacle (37) from inside door.

16. Remove pin (38) and remove roller assembly (39).

17. Remove cotter pin (40) and discard. Remove pin (41) and rod (42).

18. Move lever (30) free of support (22).

INSPECT

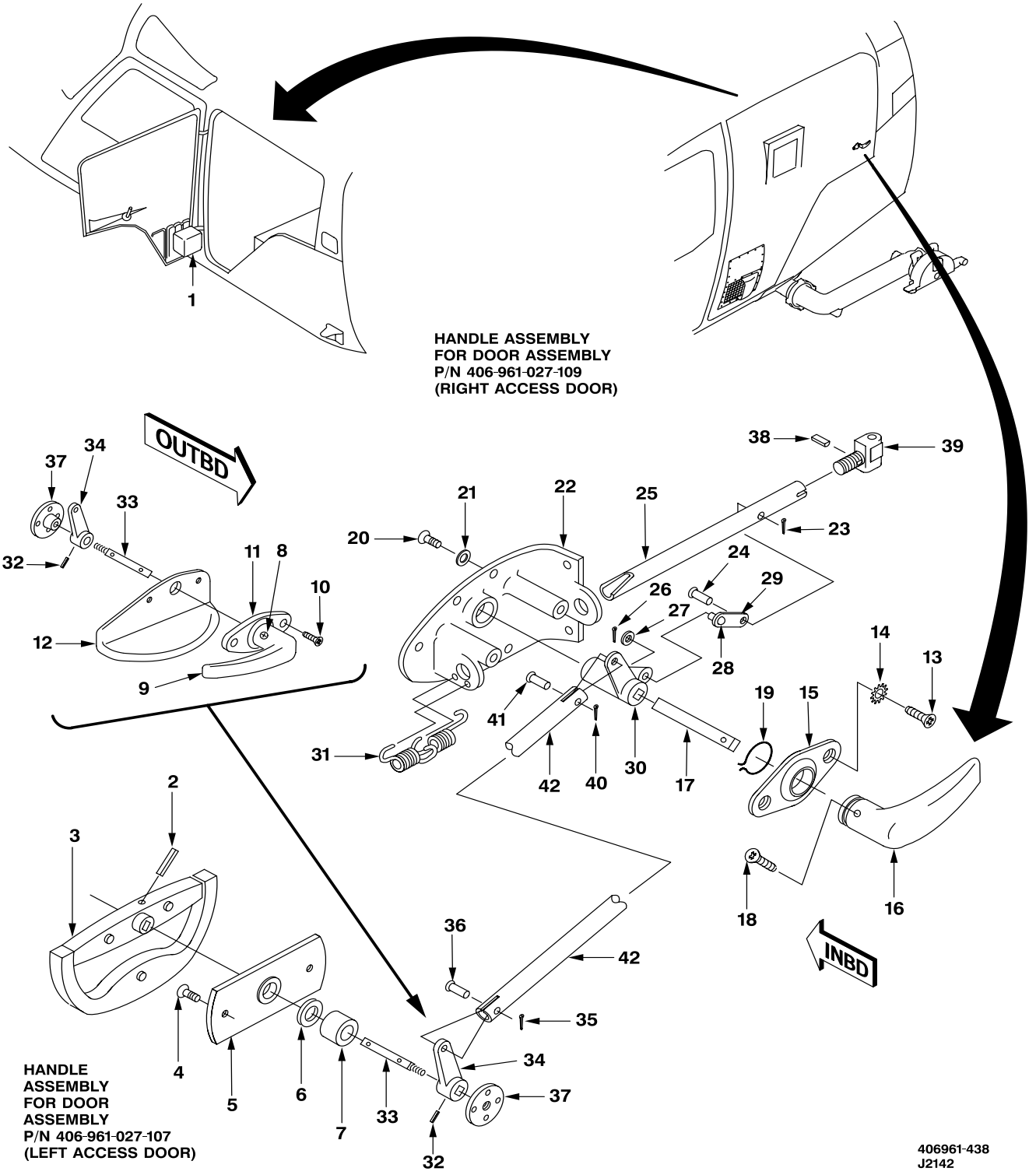
19. During disassembly, inspect parts for cracks, corrosion, and other damage (TM 1-1500-344-23).

REPAIR

20. Replace all parts that are damaged or corroded.

GO TO NEXT PAGE

2-2-3. ACCESS DOOR LATCH ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)



Access Door Latch Assembly (Sheet 1 of 2)

GO TO NEXT PAGE

ASSEMBLE

NOTE

Steps 21. through 26. are for door assembly P/N 406-961-027-107.

21. Install receptacle (37).

22. Align hole in bellcrank (34) with hole in forward end of rod (42). Install pin (36) and cotter pin (35) through pin (36).

23. Insert spindle (33) into bellcrank (34) and install pin (32).

24. Install spacer (7) and washer (6).

25. Install escutcheon (5) with two screws (4).

26. Align hole in handle (3) with hole in spindle (33) and install roll pin (2).

NOTE

Steps 27. through 31. are for door assembly P/N 406-961-027-109.

27. Install receptacle (37).

28. Align hole in bellcrank (34) with hole in forward end of rod (42). Install pin (36) and cotter pin (35) through pin (36).

29. Install spindle (33) in bellcrank (34) and install pin (32).

30. Install handle guard (12) on spindle (33).

31. Align hole in escutcheon (11) with hole in handle guard (12) and install two screws (10). Secure handle (9) to spindle (33) with screw (8).

32. Place end of lever (30) in hole in support (22).

33. Press pin (28) on link (29) into inside arm in lever (30). Lock in place with washer (27) and cotter pin (26) through pin (28).

34. Insert rod (25) through holes in support (22) and attach springs (31). Align hole in rod (25) with link (29) and insert pin (24). Install cotter pin (23) through pin (24).

35. Position end of roller assembly (39) into rod (25) and secure with pin (38).

36. Attach rod (42) to outside arm of lever (30) with pin (41) and install cotter pin (40) through pin (41).

37. Guide support (22) into place in door and attach with seven screws (20) and washers (21).

38. Install handle (16) in escutcheon (15) and secure with retaining ring (19). Secure spindle (17) to handle (16) with screw (18).

39. Guide spindle (17) into lever (30) ensuring outside arm on lever (30) is up and install escutcheon (15) with two screws (13) and two washers (14).

40. Close left or right access door (1).

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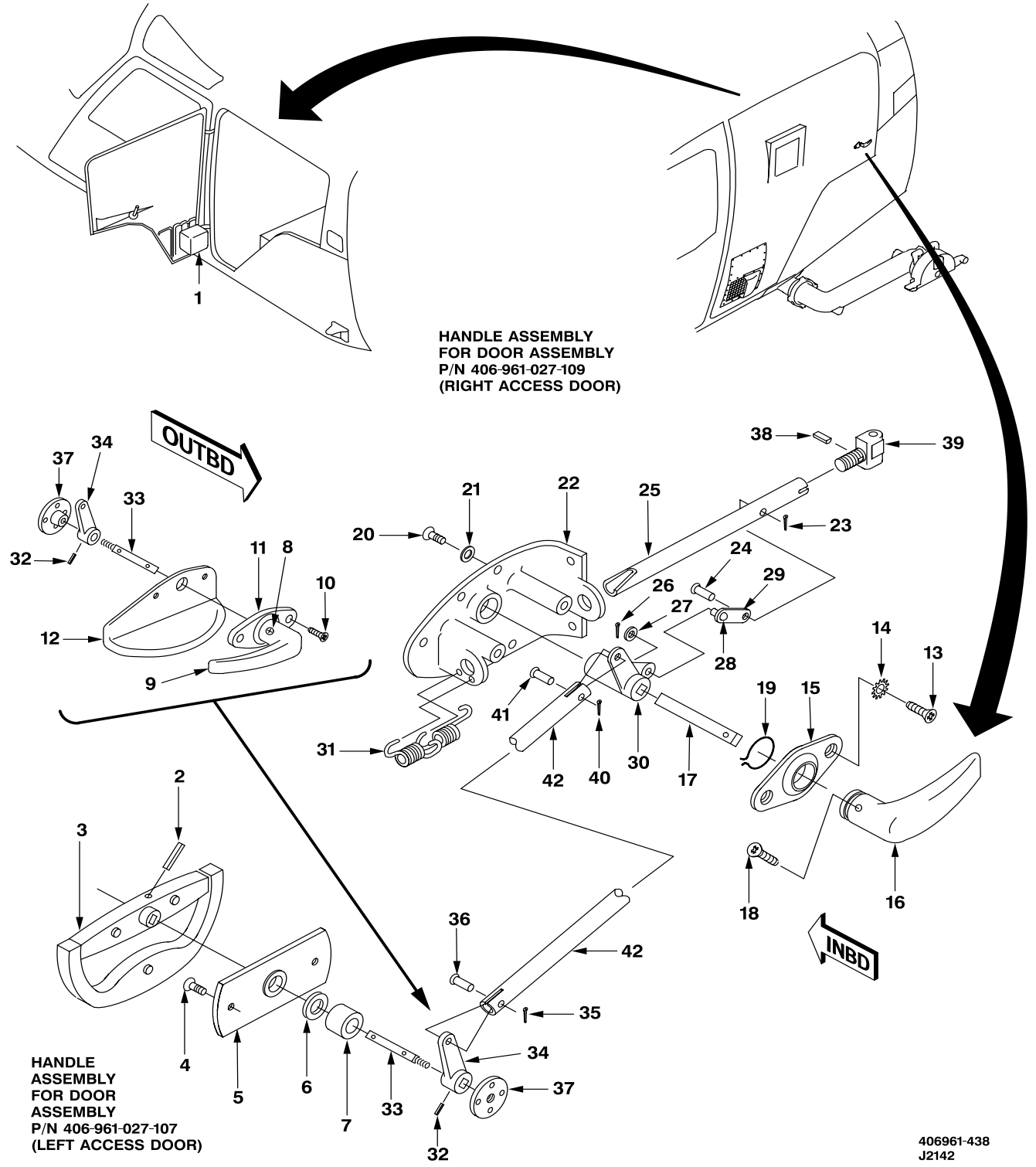


Access Door Latch Assembly (Sheet 2 of 2)

GO TO NEXT PAGE

2-2-3. ACCESS DOOR LATCH ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

ADJUST

WARNING

To prevent access door opening in flight, latch assembly shall be properly adjusted. An access door open in flight can cause instability, difficulty in maintaining control, loss of access door, and possible loss of personnel.

41. Open left or right access door (1).

42. Remove pin (38).

43. Turn roller assembly (39) clockwise for looser fit or turn counterclockwise for tighter fit.

44. Align hole in roller assembly (39) with slot in rod (25) and insert pin (38).

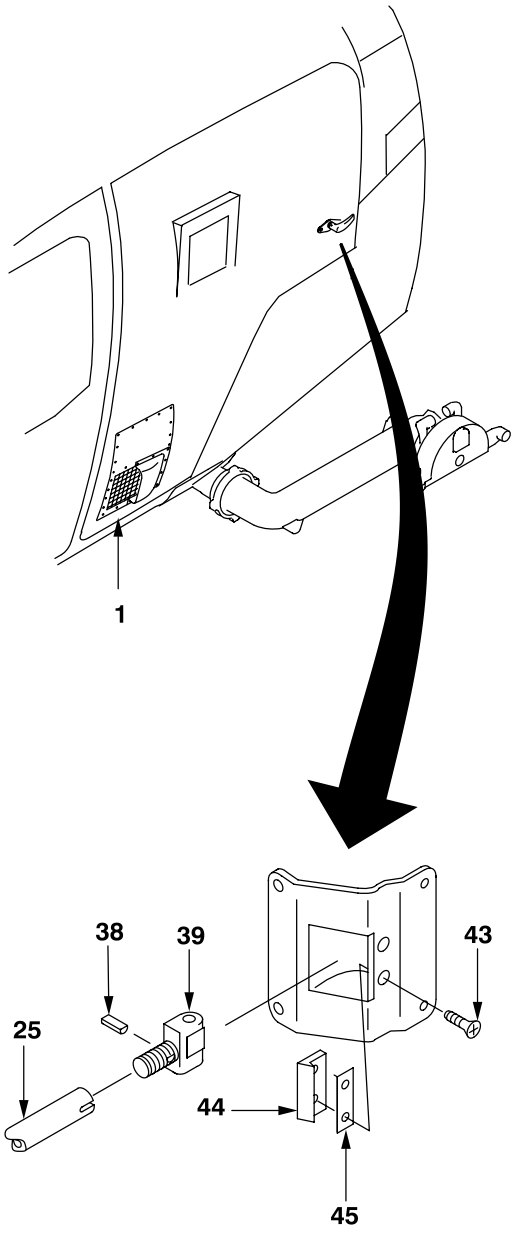
45. Remove two screws (43) striker (44), and shim (45).

46. Change thickness of shim (45) as required for smooth operation of the latch with as little door panel deflection as possible and with no door rattle.

47. Install shim (45) and striker (44) with two screws (43).

INSPECT

48. Close access door (1).



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END OF TASK

2-2-4. ACCESS DOOR HINGE HALVES/QUICK-DISCONNECT PIN/LANYARD — CLEANING/ INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 1-1500-344-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-4. ACCESS DOOR HINGE HALVES/QUICK-DISCONNECT PIN/LANYARD — CLEANING/ INSPECTION/REPAIR (CONT)

CLEAN

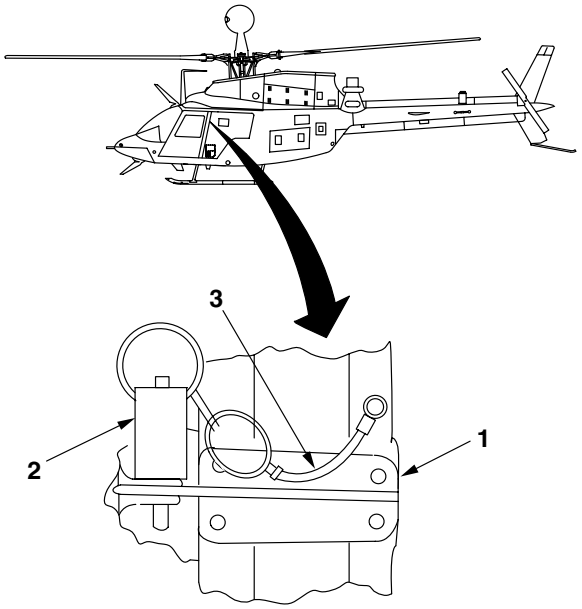
Drycleaning Solvent

NOTE

- Procedure for cleaning, inspecting, and repairing hinge halves, quick-disconnect pins, and lanyards is similar for both access doors.
- Disassembly shall be done only to the extent necessary for cleaning, inspection, and repair.

1. Use drycleaning solvent (D199) and wiping rags (D164) to clean hinge halves (1) and quick-disconnect pin (2) for inspection.

2. Use wiping rags (D164) to dry hinge halves (1) and quick-disconnect pin (2).



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INSPECT

3. Inspect hinge half (1) for the following damage. If any of the following damage is evident, replace hinge half or missing/damaged rivets.

a. Wear

b. Cracks

c. Breakage

d. Corrosion (TM 1-1500-344-23)

e. Loose or missing rivets

f. Other damage.

4. Inspect quick-disconnect pin (2) for the following damage. If any of the following damage is evident, replace quick-disconnect pin (2).

a. Wear

b. Cracks

c. Breakage

d. Corrosion (TM 1-1500-344-23).

5. Inspect lanyard (3) for the following damage:

a. Presence

b. Fraying

c. Breakage

d. Loose or missing sleeve or loop

e. Loose or missing terminal

f. Other damage.

GO TO NEXT PAGE

2-2-4. ACCESS DOOR HINGE HALVES/QUICK-DISCONNECT PIN/LANYARD — CLEANING/ INSPECTION/REPAIR (CONT)

REPAIR

6. Accomplish repair by replacing damaged components.

7. Remove two quick-disconnect pins (2) from hinges (1).

8. Remove access door (4) and place on work table.

9. Remove four rivets (5) from each hinge half (1) in accordance with TM 1-1500-204-23.

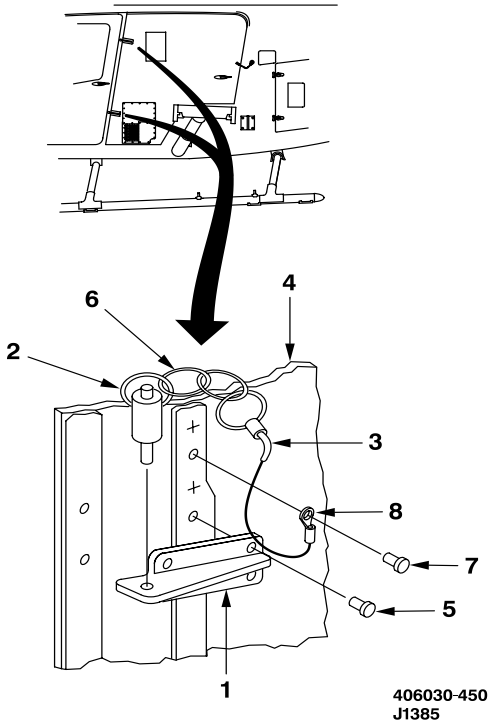
10. Remove two hinge halves (1).

11. Release retaining ring (6) from each lanyard (3), freeing quick-disconnect pins (2).

12. Remove rivet (7), if required, in accordance with TM 1-1500-204-23.

13. Remove lanyard (3).

14. Place terminal (8) of each lanyard (3) in position on access door (4).



NOTE

If quick-disconnect pin (2) cannot be installed through pin hole in hinge half (1), pin hole shall be enlarged using No. 11 drill bit.

15. Install rivet (7) in accordance with TM 1-1500-204-23.

16. Attach retaining ring (6) for each lanyard (3) to a quick-disconnect pin (2).

17. Before installing hinge half (1), remove protective finish to ensure electrical bonding. Refer to Appendix M for bonding instructions.

18. Place hinge half (1) in position on access door (4).

NOTE

Upper and lower hinge halves are not interchangeable.

19. Install four rivets (5) in each hinge half (1) in accordance with TM 1-1500-204-23.

20. Place access door (4) in position on helicopter.

21. Insert a quick-disconnect pin (2) into each hinge.

INSPECT

END OF TASK

2-2-5. ACCESS DOOR CHAFING STRIP — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Plastic Scraper (B123)

Material:
Acetone (D2)
Aliphatic Naphtha (D141)
Epoxy Primer Coating (D98)
Cheesecloth (D56)
Wiping Rags (D164)
Rubber Gloves (D111)
Adhesive (D31)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-5. ACCESS DOOR CHAFING STRIP — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

NOTE

Procedure for cleaning, inspecting, and replacing chafing strip for right access door is similar to left access door.

1. Open access door (1).

Naphtha/Naphthalene, TT-N-97

2. Use aliphatic naphtha (D141) and cheesecloth (D56) to clean chafing strips (2 and 3) for inspection.

3. Use wiping rags (D164) to dry chafing strips (2 and 3).

INSPECT

4. Inspect chafing strips (2 and 3) for the following damage:

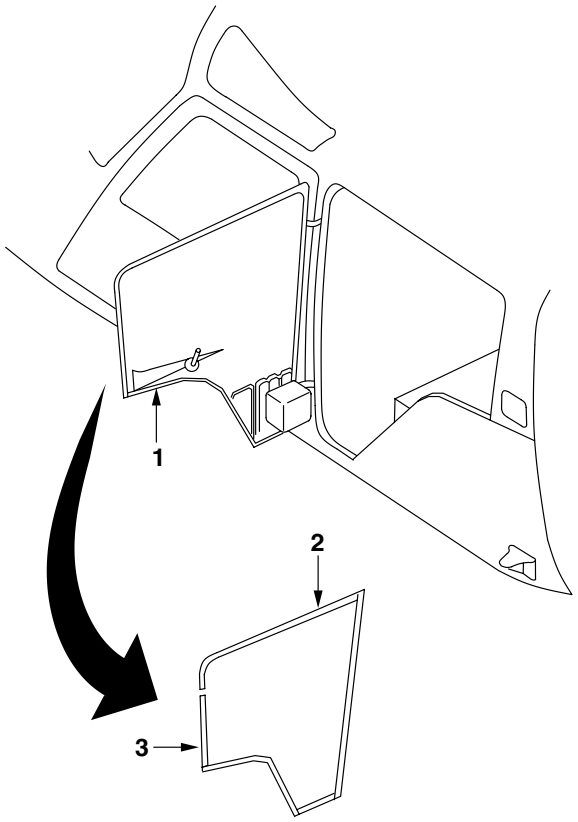
   a. Presence

   b. Cuts

   c. Looseness

   d. Wear

   e. Other damage.



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2-2-5. ACCESS DOOR CHAFING STRIP — CLEANING/INSPECTION/REPAIR (CONT)

REPAIR

5. Replace chafing strip(s) (2 and/or 3) if missing, cut, loose, worn, or otherwise damaged.

6. Use plastic scraper (B123) to remove chafing strip(s) (2 and/or 3).

Acetone

7. Use acetone (D2) and wiping rags (D164) to remove any residue from access door (1).

8. Use wiping rags (D164) to dry access door (1).

9. Apply epoxy primer coating (D98) to touch up area of bare metal in accordance with TM 55-1500-345-23.

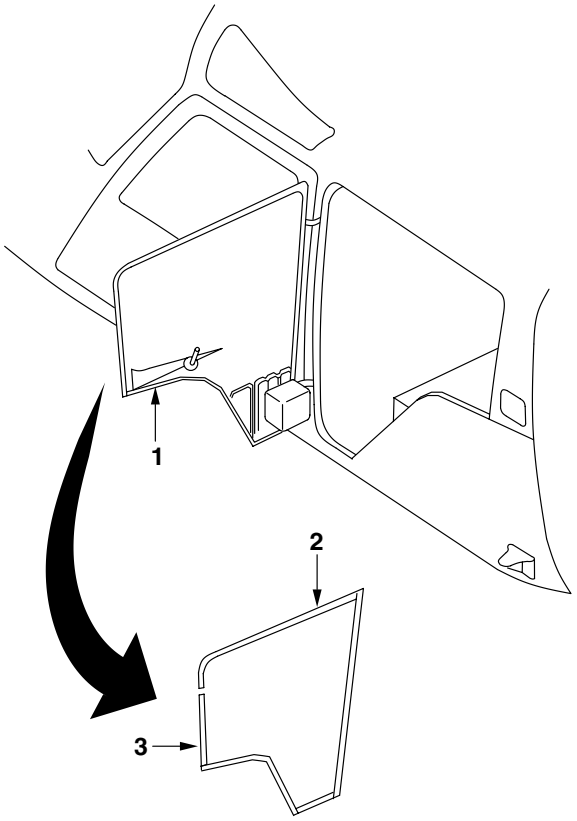
10. Make chafing strip(s) (2 and/or 3).

NOTE

Chafing strips have self-adhesive backing, but will require additional adhesive (D31) for durability. Manufacturers instructions for use must be followed.

11. Replace chafing strip(s) (2 and/or 3).

12. Close access door (1).



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END OF TASK

2-2-6. ACCESS DOORS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

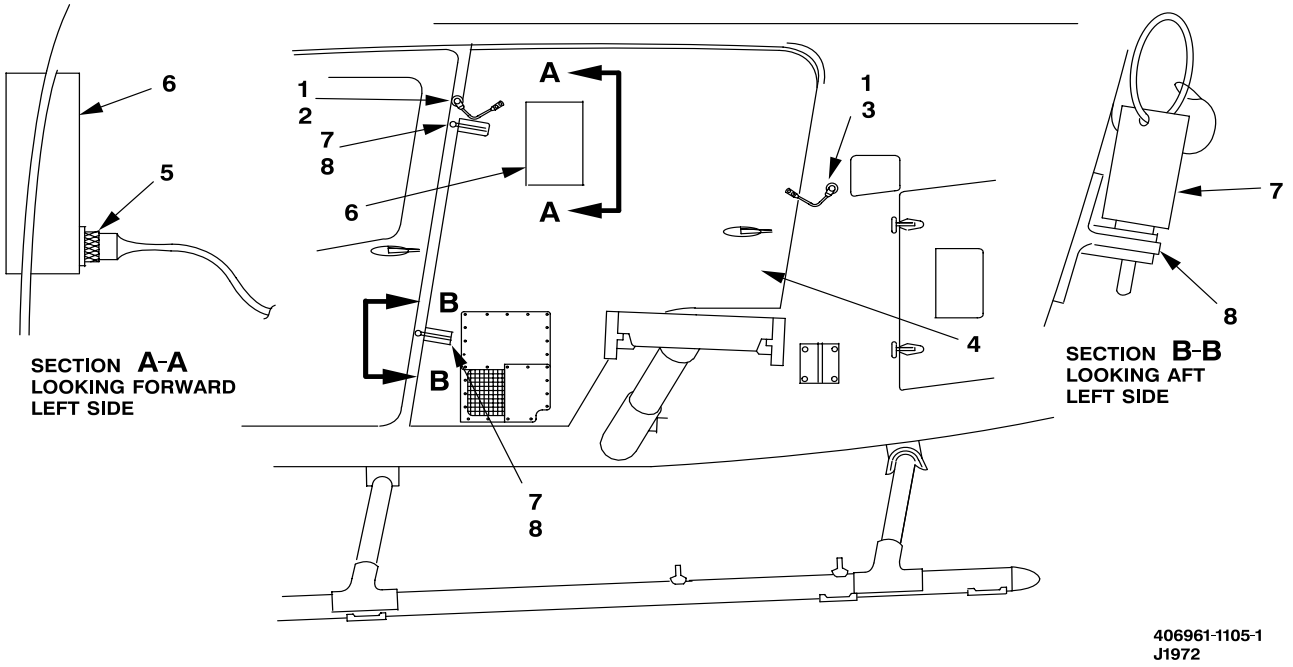
Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-6. ACCESS DOORS — REMOVAL/INSTALLATION (CONT)



Access Doors

REMOVE

1. Gain access to connector (5) through crew compartment.

2. Disconnect connector (5) from laser detector (6).

3. Loosen fasteners (1) on bonding jumpers (2 and 3).

4. Open access door (4).

CAUTION

To prevent damage to laser detector window, access door shall not be dropped or bumped.

5. Support access door (4) and remove two quick-release pins (7) from hinges (8).

6. Remove access door (4).

7. Stencil helicopter serial number on inside of access door if doors are to be reinstalled.

INSTALL

NOTE

Doors are not interchangeable from one helicopter to another without adjustment.

8. Position access door (4) by aligning hinges (8).

9. Insert two quick-release pins (7) into hinges (8).

10. Close access door (4).

11. Fasten fasteners (1) on bonding jumpers (2 and 3).

12. Gain access to connector (5) through the crew compartment.

13. Connect connector (5) to laser detector (6).

END OF TASK

2-2-7. ACCESS DOOR BONDING JUMPER (TYPICAL) — INSPECTION/REPAIR/REPLACEMENT

This task covers: Inspection, Repair, and Replacement (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

INSPECT

1. Check for damage to bonding jumper (3).

2. Check for Class R-1 bond between bonding jumper (3) and helicopter structure (Appendix M).

REPAIR

3. Repair consists of replacement of bonding jumper (3).

REPLACE

4. Remove rivets (1 and 2) securing bonding jumper (3) (TM 1-1500-204-23).

5. Discard bonding jumper (3).

6. Prepare mating surfaces for Class R-1 electrical bond (Appendix M).

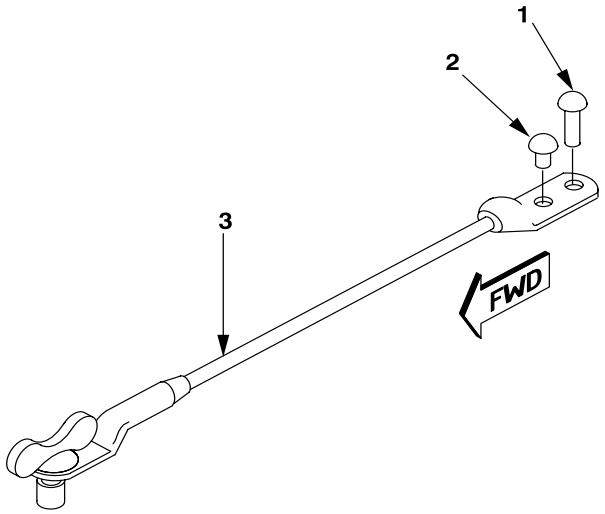
7. Install bonding jumper (3), securing in place with long rivet (1) in aft hole of strap and short rivet (2) in forward hole of strap (TM 1-1500-204-23).

INSPECT

8. Check for Class R-1 bond between bonding jumper (3) and helicopter structure (Appendix M).

9. Touch up and seal in accordance with Appendix M.

INSPECT



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END OF TASK

2-2-8. ACCESS DOOR TURNLOCK RECEPTACLES — INSPECTION/REPAIR/REPLACEMENT

This task covers: Inspection, Repair, and Replacement at left and right side forward access door and/or left side aft access door (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Access Door Removed, as applicable (Task 2-2-6)

INSPECT

Forward left and right side access door turnlock receptacle.

1. Inspect turnlock receptacle mounting rivets (4) for looseness and condition. See figure Access Door Turnlock Receptacles.

2. Visually inspect interior of turnlock receptacle (5) for any deformation that would prevent positive bonding of jumper.

3. Ensure that proper latching action occurs between bonding jumper and turnlock receptacle (5).

REPAIR

4. Repair consists of replacement of the turnlock receptacle and mounting hardware.

REPLACE

5. On inboard side of right door post, cut lockwire at access panel (3). See figure Access Door Turnlock Receptacles.

6. Remove four screws (1) and washers (2).

7. Remove access panel (3).

Drilling Operations

8. Drill out two rivets (4) that secure turnlock receptacle (5).

9. Remove turnlock receptacle (5) through access panel opening.

10. Discard unserviceable turnlock receptacle (5).

11. Prepare mating surface for Class R-1 electrical bond (Appendix M).

12. Position turnlock receptacle (5) through inboard right side door post, ensuring proper hole alignment.

13. Secure turnlock receptacle (5) in place with two rivets (4) (TM 1-1500-204-23).

14. Install access panel (3) with four washers (2) and screws (1).

15. Install lockwire (D132).

INSPECT

16. Check for Class R-1 bond between turnlock receptacle (5) and helicopter structure (Appendix M). See figure Access Door Turnlock Receptacles.

INSPECT

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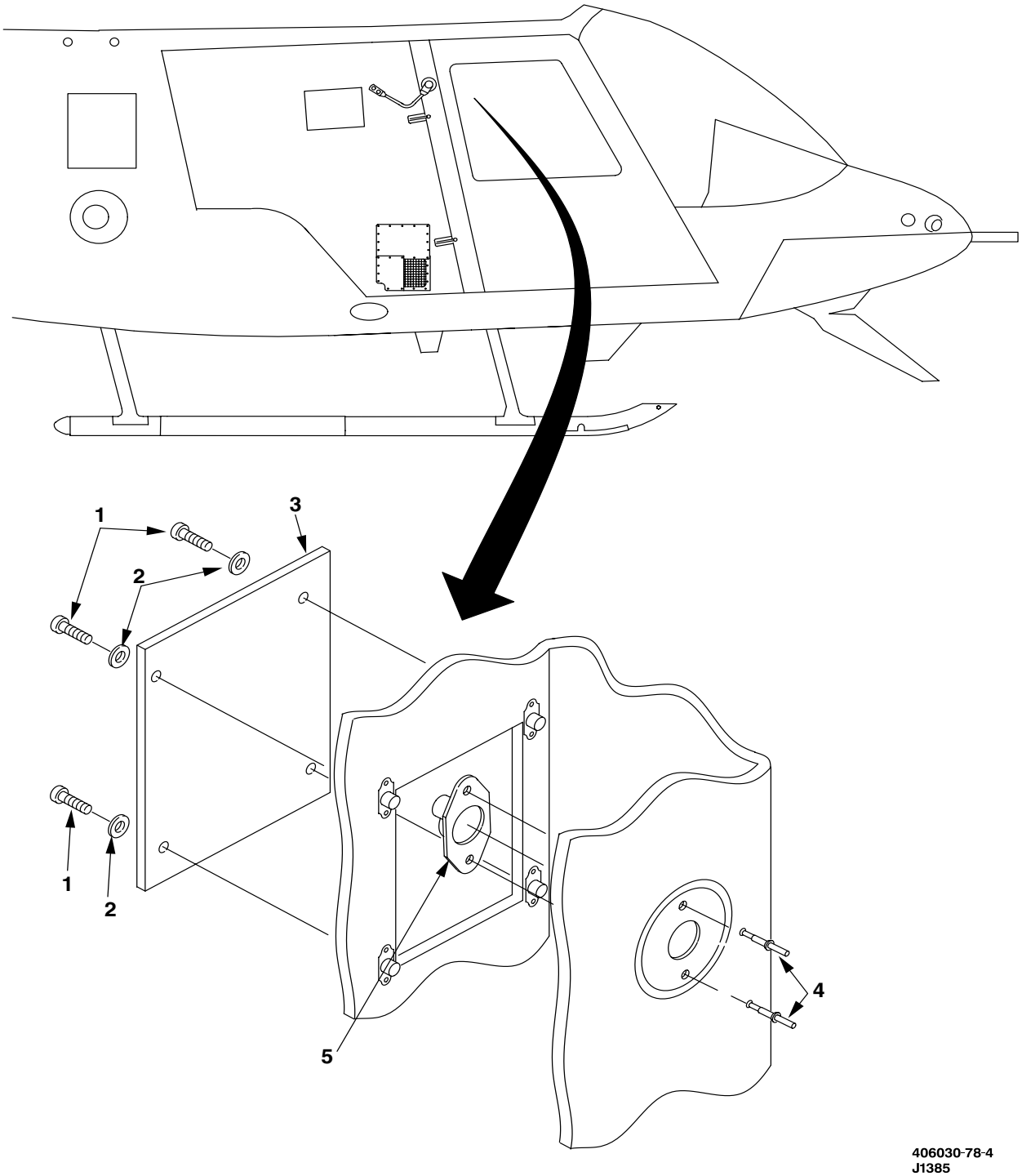
2-2-8. ACCESS DOOR TURNLOCK RECEPTACLES — INSPECTION/REPAIR/REPLACEMENT (CONT)



Access Door Turnlock Receptacles

GO TO NEXT PAGE

2-2-8. ACCESS DOOR TURNLOCK RECEPTACLES — INSPECTION/REPAIR/REPLACEMENT (CONT)

INSPECT

Aft left side access door turnlock receptacle.

17. Inspect turnlock receptacle mounting rivets (6) for looseness and condition. See figure Access Door Turnlock Receptacles.

18. Visually inspect interior of turnlock receptacle (7) for any deformation that would prevent positive bonding of jumper.

19. Ensure that proper latching action occurs between bonding jumper and turnlock receptacle (7).

REPAIR

20. Repair consists of replacement of the turnlock receptacle and attaching hardware.

REPLACE

Drilling Operations

21. Drill out two rivets (6). See figure Access Door Turnlock Receptacles.

22. Remove turnlock receptacle (7) through step door opening.

23. Discard unserviceable turnlock receptacle (7).

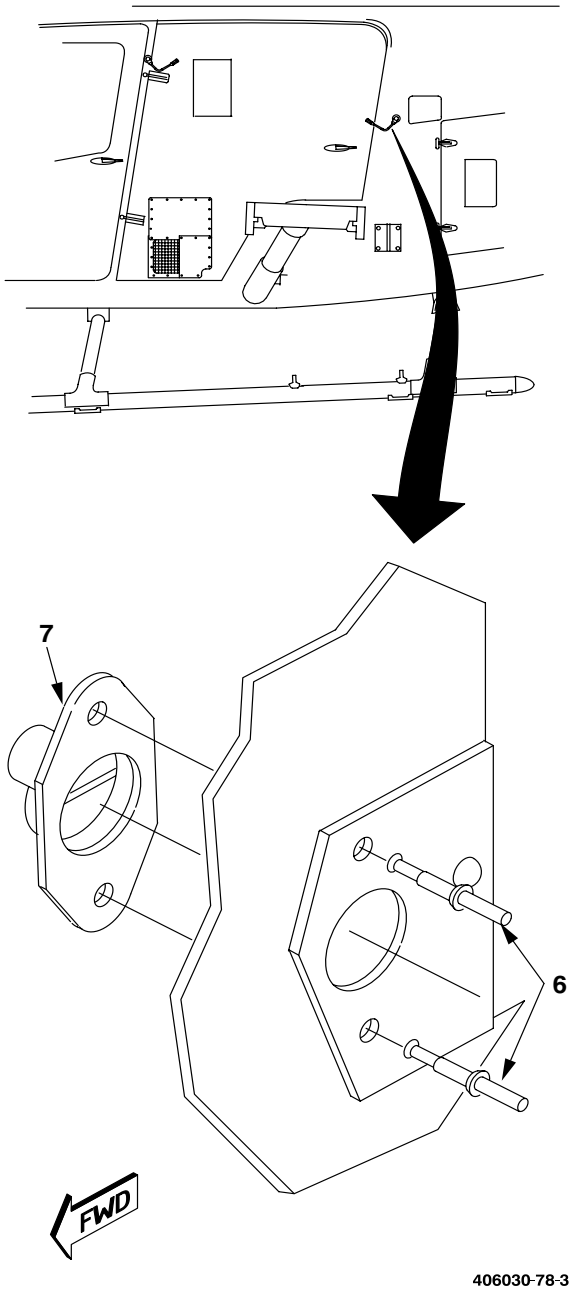
24. Prepare mating surface for Class R-1 electrical bond (Appendix M).

25. Position turnlock receptacle (7), ensuring proper hole alignment.

26. Secure turnlock receptacle (7) in place with two rivets (6) (TM 1-1500-204-23).

INSPECT

27. Check for Class R-1 bond between turnlock receptacle (7) and helicopter structure (Appendix M). See figure Access Door Turnlock Receptacles.



INSPECT

FOLLOW-ON MAINTENANCE

Install access door (Task 2-2-6) as applicable.

END OF TASK

2-2-9. CREW DOOR WINDOW SNAP VENT — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-9. CREW DOOR WINDOW SNAP VENT — REMOVAL/INSTALLATION (CONT)

REMOVE

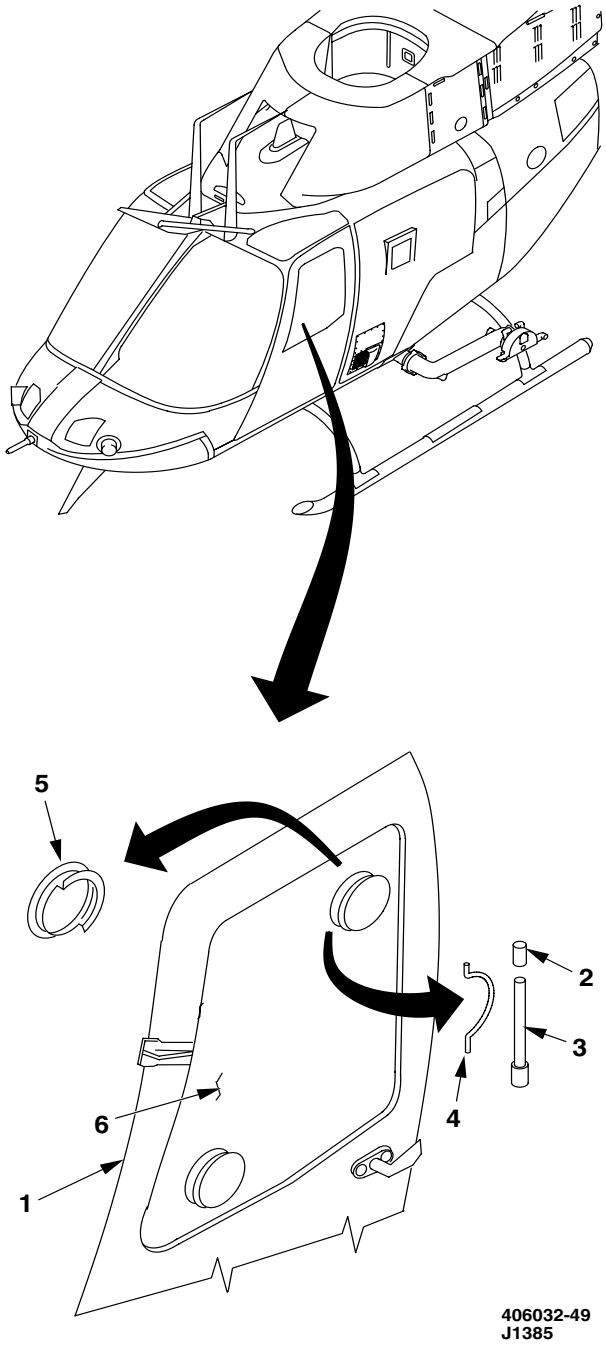
1. Open crew door (1).
2. Pull tip (2) from tube (3).
3. Pull tube (3) free.
4. Remove expander ring (4).
5. Squeeze snap vent (5), cock, and remove from window (6).

INSTALL

CAUTION

To prevent cracking and breaking snap vent (5) during installation, excessive pressure shall not be used.

6. Squeeze snap vent (5) and insert through hole in window (6).
7. Install expander ring (4).
8. Insert tube (3) into snap vent (5).
9. Slip tip (2) onto tube (3).
10. Clean window (6) (Task 1-4-11).
11. Close crew door (1).



END OF TASK

2-2-10. CREW DOOR — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Lockwire (D130)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-10. CREW DOOR — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Open crew door (1).

2. Break and remove lockwire from handle (2).

CAUTION

To prevent damage to crew door (1), the door shall be supported when handle (2) is pulled. The crew door will release from fuselage.

3. Pull handle (2) and remove crew door (1).

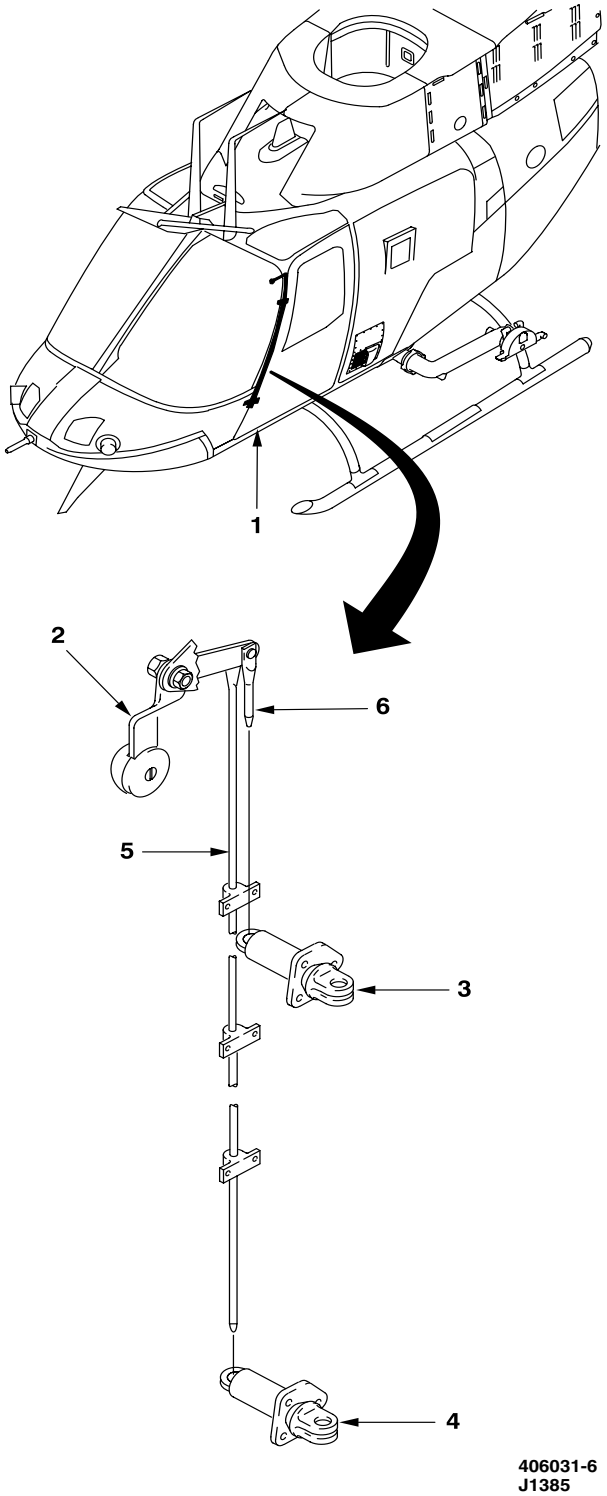
INSTALL

4. Place door (1) on helicopter. Align holes in hinge halves (3 and 4) with rods (5 and 6). Push handle (2) to engage rods (5 and 6).

5. Ensure rods (5 and 6) extend a minimum **0.500 inch** through hinge halves (3 and 4).

6. Lockwire handle (2) using lockwire (D130).

INSPECT



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END OF TASK

2-2-11. CREW DOOR JETTISON MECHANISM — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Lockwire (D130)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-11. CREW DOOR JETTISON MECHANISM — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Open crew door (1).
2. Break and remove lockwire from handle (2).

CAUTION

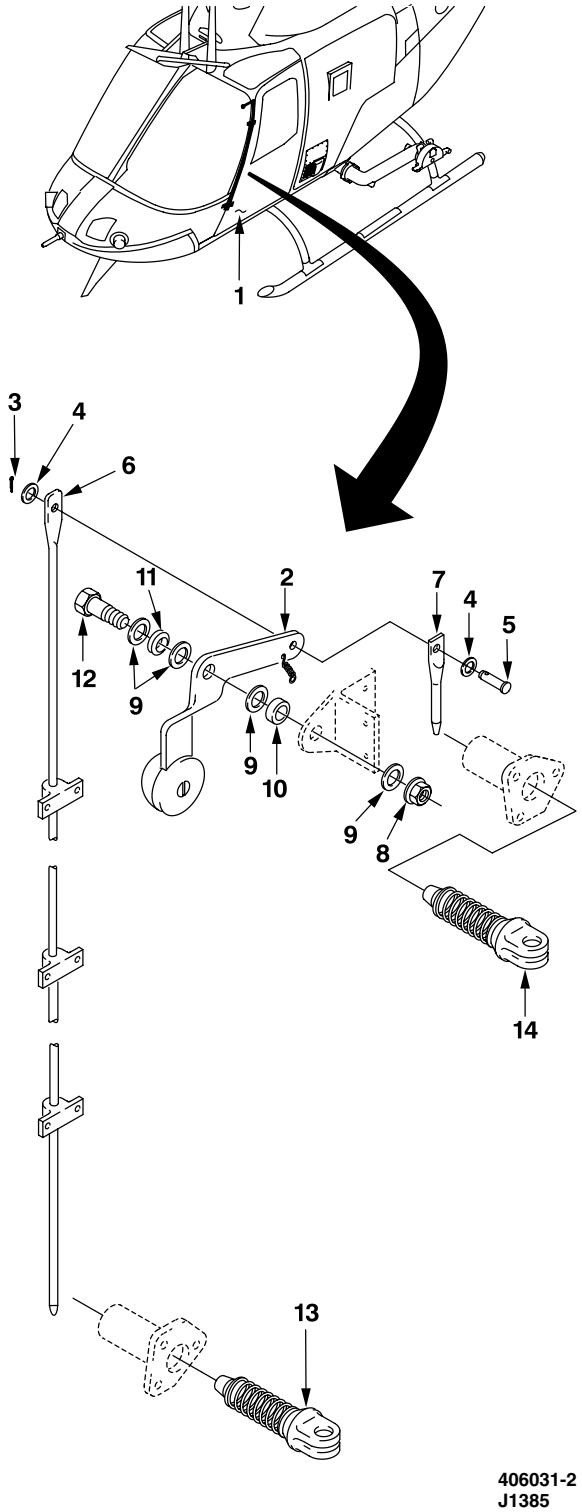
To prevent damage to the crew door when the handle is turned, the crew door shall be supported. The crew door will release from fuselage.

3. Remove crew door by turning handle (2).
4. Remove cotter pin (3), two washers (4), and pin (5) from handle (2) and rods (6 and 7).
5. Remove nut (8), four washers (9), spacer (10), beveled washer (11), and bolt (12) from handle (2) and support.
6. Remove handle (2) from helicopter.

INSTALL

7. Place handle (2) on helicopter.
8. Install bolt (12) with washer (9), beveled washer (11), and washer (9) through handle (2) and support. Install washer (9), spacer (10), washer (9), and nut (8).
9. Place rods (6 and 7) on handle (2). Install pin (5) with two washers (4) through handle (2). Install cotter pin (3) through pin (5).
10. Place door (1) on helicopter. Align holes in hinge halves (13 and 14) with rods (6 and 7). Turn handle (2) to engage rods.
11. Lockwire handle (2) using lockwire (D130).

INSPECT



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END OF TASK

2-2-12. CREW DOOR JETTISON MECHANISM — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-12. CREW DOOR JETTISON MECHANISM — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Clean all parts in drycleaning solvent (D199).

INSPECT

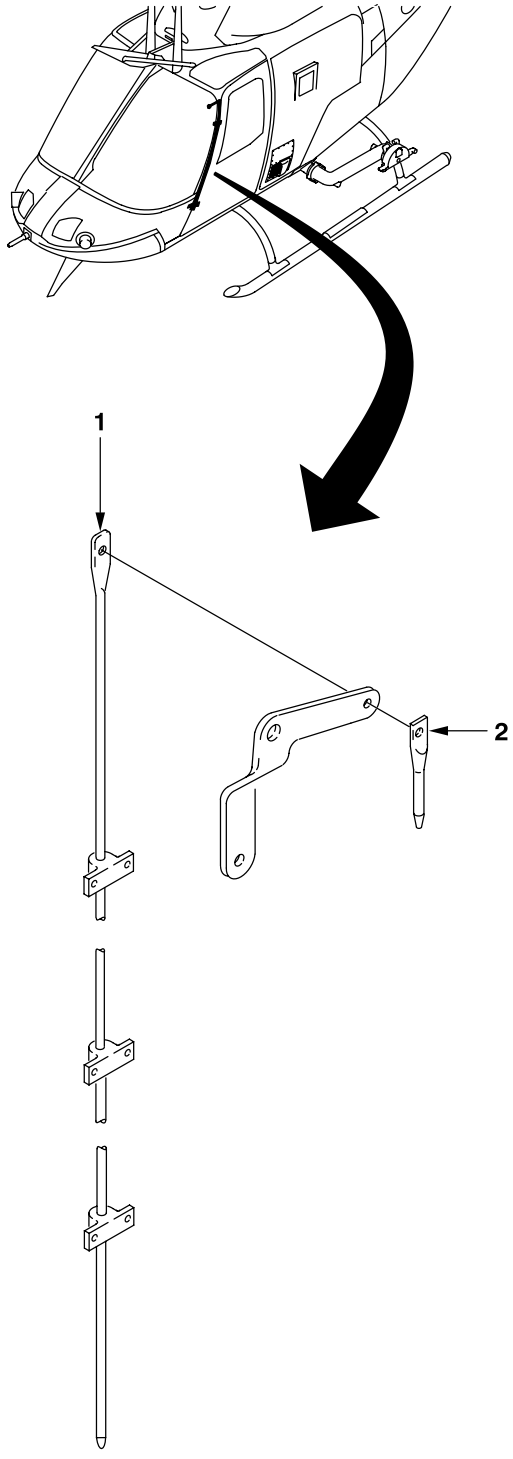
2. Inspect all parts for damage and wear.

3. Inspect rods (1 and 2) for distortion.

REPAIR

4. Replace damaged, worn, or distorted parts.

INSPECT



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END OF TASK

2-2-13. CREW DOOR LATCH ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Low-Lint Cleaning Cloth (D67)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-344-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-13. CREW DOOR LATCH ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

NOTE

Procedure for cleaning, inspecting, and repairing latch assembly for right crew door is the same as the procedure shown for left crew door. Disassembly shall be done only to the extent necessary for cleaning, inspection, and repair.

CLEAN

Drycleaning Solvent

1. During disassembly, use drycleaning solvent (D199) and low-lint cleaning cloths (D67) to clean parts as required for inspection.

2. Use low-lint cleaning cloth (D67) to dry parts.

DISASSEMBLE

3. Open crew door (1).

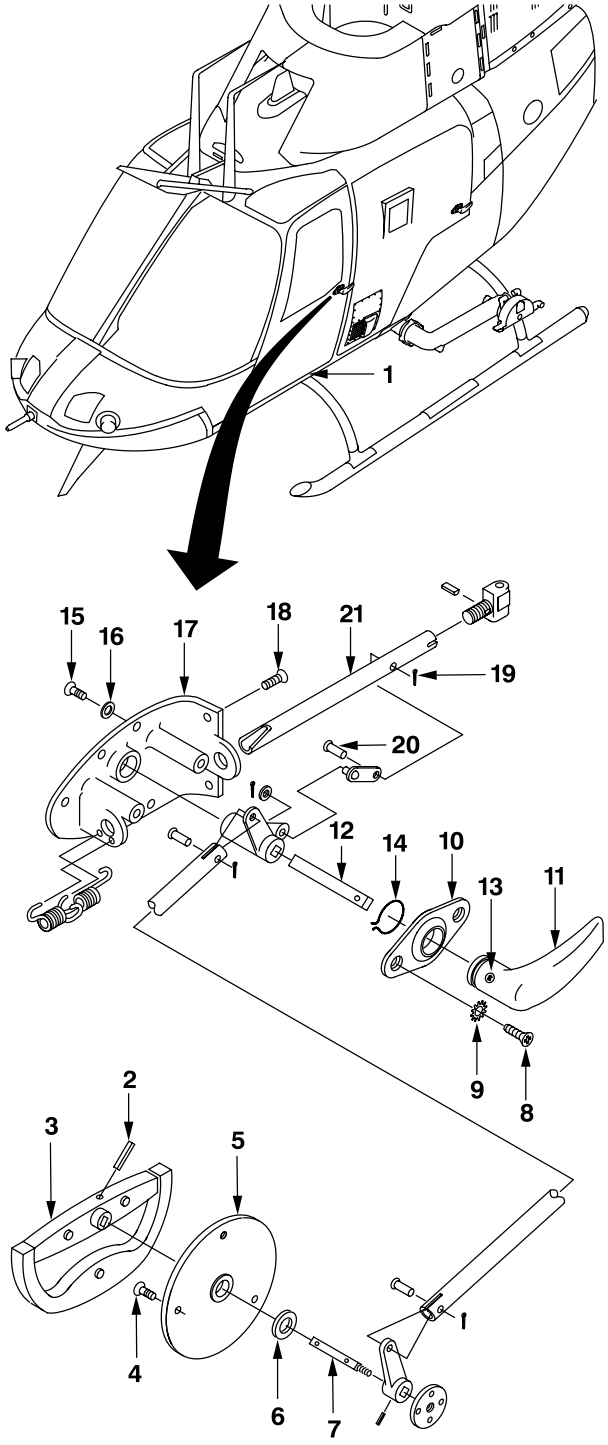
4. Remove pin (2) and handle (3). Remove three screws (4). Remove escutcheon (5). Remove shim (6) and spindle (7).

5. Remove two screws (8), two washers (9), escutcheon (10), handle (11) and spindle (12). Remove screw (13) from handle (11) and remove spindle (12) from handle (11). Remove retaining ring (14) and handle (11) from escutcheon (10).

6. Remove four screws (15) and four washers (16) from support (17). Remove two screws (18) from support (17).

7. Pull support (17) clear of door.

8. Remove and discard cotter pin (19). Remove pin (20) from rod (21).



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2-2-13. CREW DOOR LATCH ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

9. Remove and discard cotter pin (22). Remove washer (23) from pin (24) and remove link (25) from lever (26).

10. Remove spring (27) from rod (21).

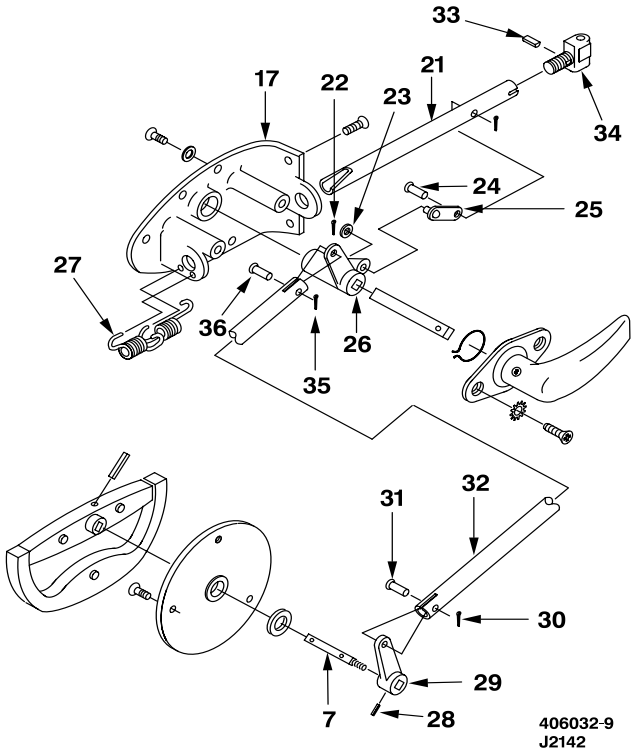
11. Remove pin (28) and pull out spindle (7) from bellcrank (29).

12. Remove and discard cotter pin (30). Remove pin (31). Remove bellcrank (29) from rod (32).

13. Remove pin (33) and remove roller assembly (34).

14. Remove and discard cotter pin (35). Remove pin (36) and rod (32).

15. Remove lever (26) free of support (17).



INSPECT

16. During disassembly, inspect parts for cracks, corrosion, and other damage (TM 1-1500-344-23).

REPAIR

17. Replace all parts that are damaged or corroded.

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2-2-13. CREW DOOR LATCH ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

ASSEMBLE

18. Align hole in bellcrank (29) with hole in forward end of rod (32). Attach with pin (31) and install cotter pin (30) through pin (31).

19. Insert spindle (7) in bellcrank (29) and install pin (28).

20. Install shim (6) and spindle (7).

21. Install escutcheon (5) with three screws (4).

22. Align hole in handle (3) with hole in spindle (7) and install pin (2).

23. Position end of lever (26) into hole in support (17).

24. Press pin (24) on link (25) into inside arm in lever (26). Lock in place with washer (23) and install cotter pin (22) through lever (26).

25. Insert rod (21) through holes in support (17) and attach springs (27). Align hole in rod (21) with link (25) and insert pin (20). Install cotter pin (19) through pin (20).

26. Place end of roller assembly (34) in rod (21) and secure with pin (33).

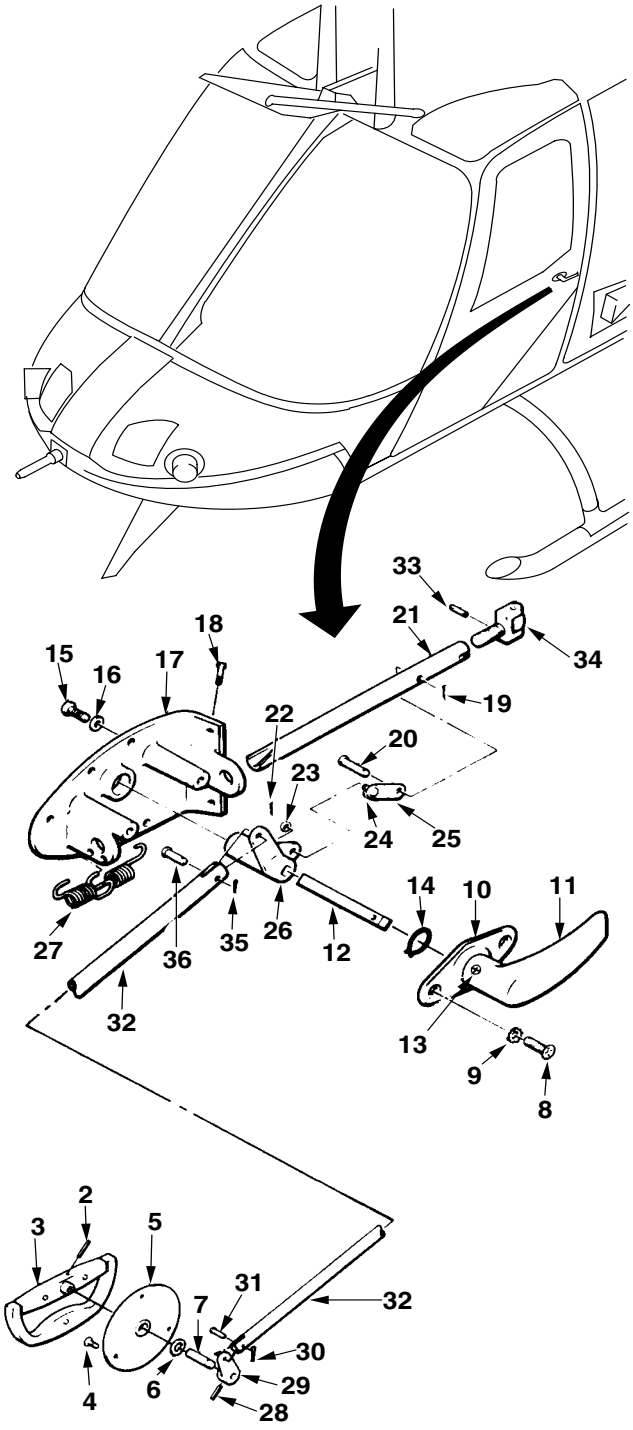
27. Attach rod (32) to outside arm of lever (26) with pin (36) and install cotter pin (35) through pin (36).

28. Guide support (17) into place in door and attach with four screws (15) and four washers (16). Install two screws (18) in support (17).

29. Install handle (11) in escutcheon (10) and secure with retaining ring (14). Secure spindle (12) to handle (11) with screw (13).

30. Guide spindle (12) into lever (26), ensuring outside arm on lever is up, and install escutcheon (10) with two screws (8) and two washers (9).

31. Close crew door (1).



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2-2-13. CREW DOOR LATCH ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

ADJUST

WARNING

A crew door open in flight can cause instability, difficulty in maintaining control, loss of crew door, and possible loss of personnel.

32. Open crew door (1).

33. Remove pin (33).

34. Turn roller assembly (34) clockwise for looser fit or turn counterclockwise for tighter fit.

35. Align hole in roller assembly (34) with slot in rod (21) and insert pin (33).

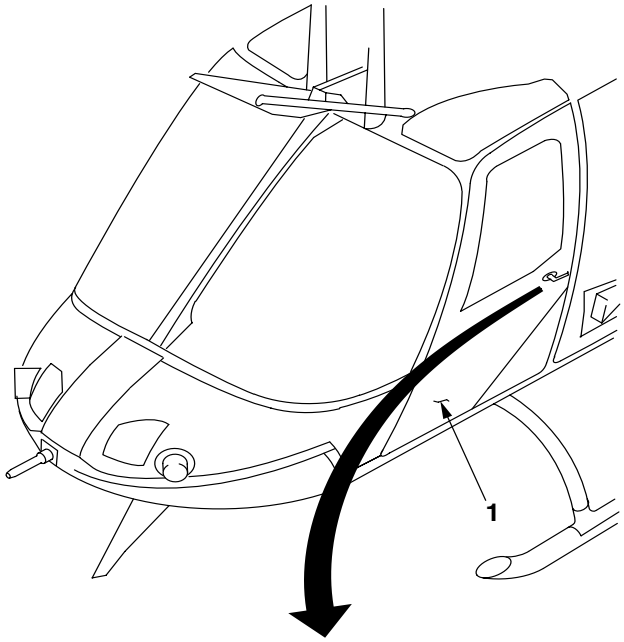
36. Remove two screws (37), striker (38), and shim (39).

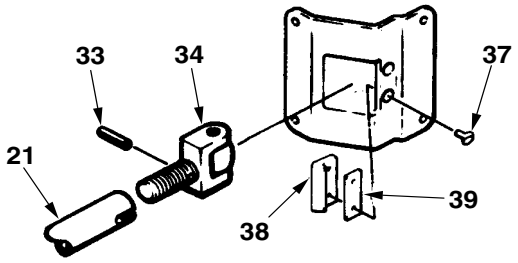
37. Change thickness of shim (39) as required for smooth operation of the latch with as little door panel deflection as possible and with no door rattle.

38. Install shim (39) and striker (38) with two screws (37).

INSPECT

39. Close crew door (1).





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END OF TASK

2-2-14. CREW DOOR HINGE ASSEMBLY — DISASSEMBLY/ASSEMBLY

This task covers: Disassembly and Assembly of Crew Door Hinge Assembly (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Torque Wrench (B236)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

GO TO NEXT PAGE

2-2-14. CREW DOOR HINGE ASSEMBLY — DISASSEMBLY/ASSEMBLY (CONT)

DISASSEMBLE

NOTE

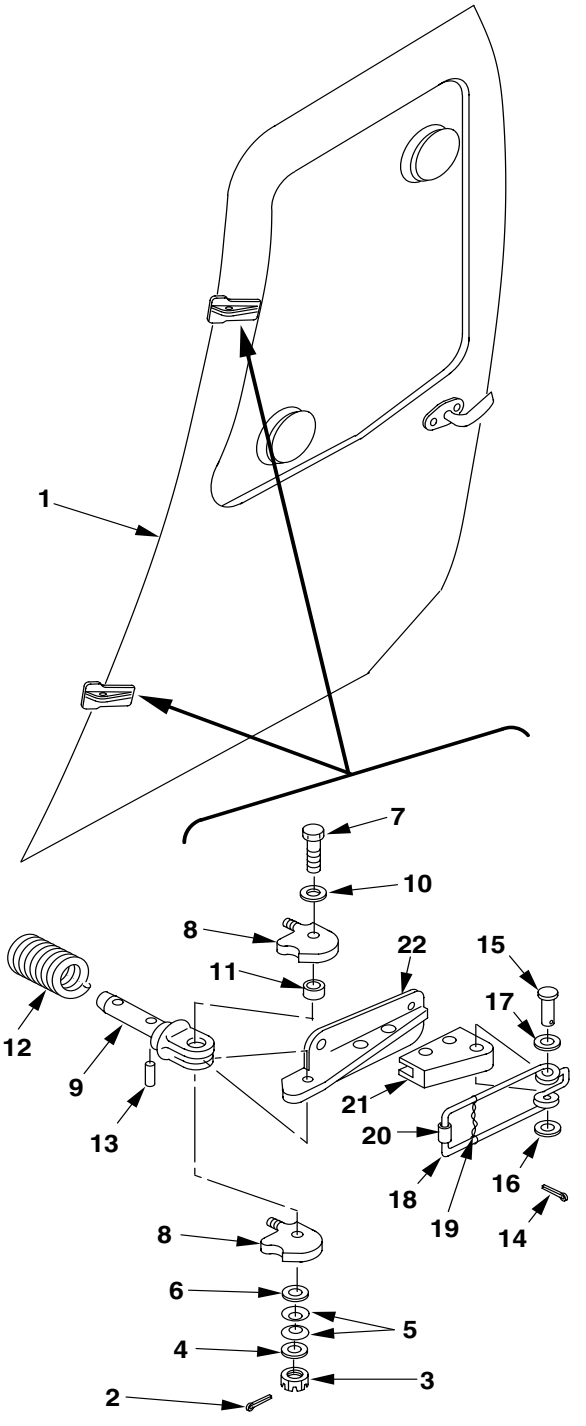
Procedure for disassembling and assembling crew door hinge assemblies is similar for both crew doors.

1. Remove crew door (1) (Task 2-2-10).
2. Place crew door (1) on work table.
3. Remove cotter pin (2) and nut (3).
4. Remove compression washer (4), two washers (5), and compression washer (6).

NOTE

Torsion spring (18) tension must be removed from detent of key washers (8) so that bolt (7) may be removed. A screwdriver may be used.

5. Remove bolt (7), two key washers (8), rod end clevis (9), and washer (10).
6. Remove spacer (11), coil spring (12), and pin (13) from rod end clevis (9).
7. Remove cotter pin (14), pin (15), washer (16), and washer (17).
8. Remove torsion spring (18) from adapter (21).
9. Remove lockwire (19) and hollow pin (20).
10. Remove rivets attaching adapter (21) to hinge half (22) (TM 1-1500-204-23).
11. Remove rivets attaching hinge half (22) to door (1) (TM 1-1500-204-23).



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2-2-14. CREW DOOR HINGE ASSEMBLY — DISASSEMBLY/ASSEMBLY (CONT)

ASSEMBLE (Same Door With Existing Rivet Holes)

NOTE

Upper and lower hinge halves are not interchangeable.

12. Place hinge half (22) on door (1) over existing rivet holes.

13. Install four rivets to attach each hinge half (22) to door (1) in accordance with TM 1-1500-204-23.

14. Install two rivets to attach adapter (21) to hinge half (22) in accordance with TM 1-1500-204-23.

15. Install hollow pin (20) on torsion spring (18).

16. Position torsion spring (18) onto adapter (21) and install pin (15) washer (17), washer (16), and cotter pin (14) through pin (15) on adapter.

17. Install lockwire (D132) (19) across arms of torsion spring (18).

18. Install spring retaining pin (13) in rod end clevis (9).

19. Insert spacer (11) in rod end clevis (9) and place rod end clevis on hinge half (22).

NOTE

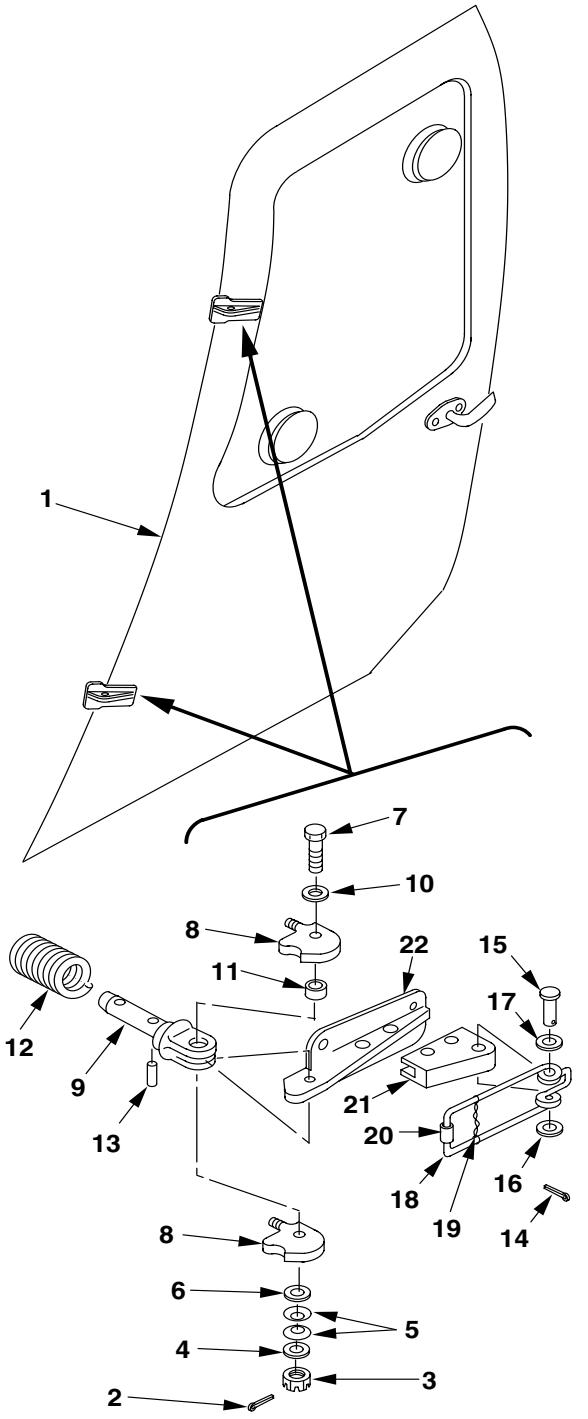
Torsion spring (18) tension must be removed from detent of key washers (8) so that bolt (7) and associated hardware stackup may be installed. A screwdriver may be used.

20. Install bolt (7), washer (10), two key washers (8), compression washer (6), two washers (5), compression washer (4), and nut (3). Torque nut (3) **20 TO 25 INCH-POUNDS** and install cotter pin (2) through nut (3).

21. Install helical spring (12) on rod end clevis (9).

22. Install crew door (1) on helicopter (Task 2-2-10).

INSPECT



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GO TO NEXT PAGE

2-2-14. CREW DOOR HINGE ASSEMBLY — DISASSEMBLY/ASSEMBLY (CONT)

ASSEMBLE (New Door With No Rivet Holes)

NOTE

Upper and lower hinge halves are not interchangeable.

23. Install two rivets to attach adapter (21) to hinge half (22) in accordance with TM 1-1500-204-23.

24. Install hollow pin (20) on torsion spring (18).

25. Position torsion spring (18) onto adapter (21) and install pin (15) washer (17), washer (16), and cotter pin (14) through pin (15) on adapter.

26. Install lockwire (D132) (19) across arms of torsion spring (18).

27. Install spring retaining pin (13) in rod end clevis (9).

28. Insert spacer (11) into rod end clevis (9) and place rod end clevis on hinge half (22).

NOTE

Torsion spring (18) tension shall be removed from detent of key washers (8) so that bolt (7) may be installed. A screwdriver may be used.

29. Install bolt (7), washer (10), two key washers (8), compression washer (6), two washers (5), nut (3), and cotter pin (2) through nut (3).

30. Install helical spring (12) on rod end clevis (9).

31. Install assembled hinges in open position in sockets of helicopter and lock with jettison mechanism rods (Task 2-2-11).

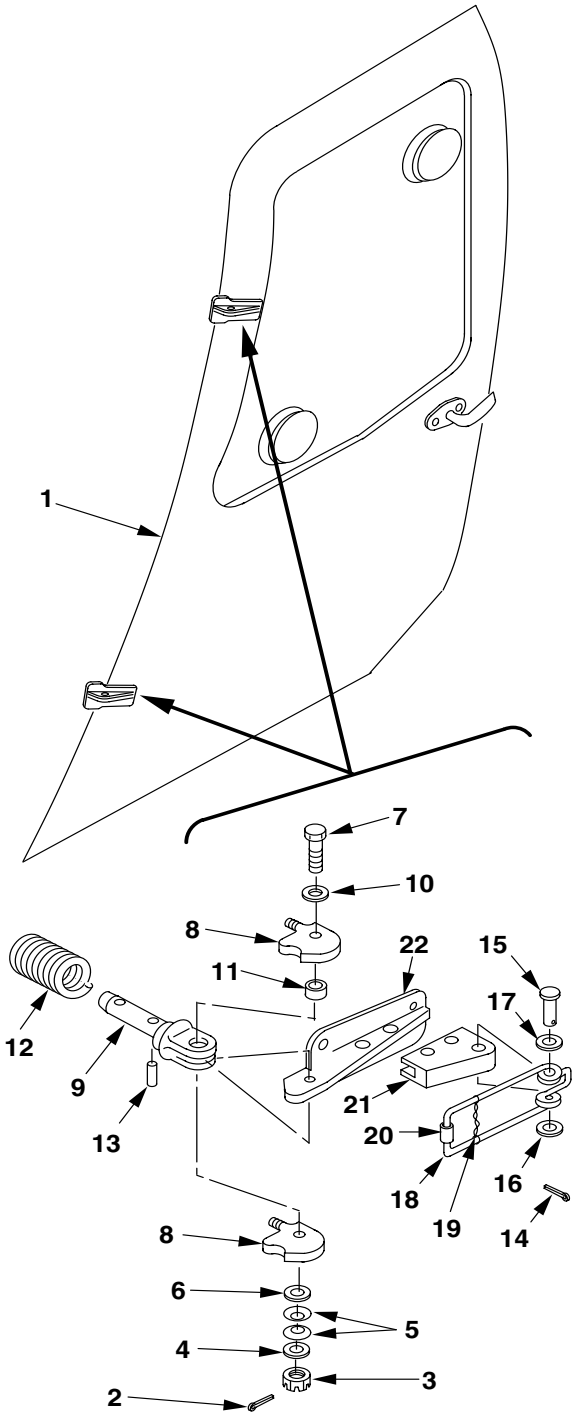
32. Place crew door (1) in position on helicopter.

NOTE

Ensure door is in exactly correct position.

33. Fold hinge halves (22) onto door (1).

34. Mark door (1) using existing holes in hinge halves (22).



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2-2-14. CREW DOOR HINGE ASSEMBLY — DISASSEMBLY/ASSEMBLY (CONT)

35. Install four rivets to attach each hinge half to door in accordance with TM 1-1500-204-23.

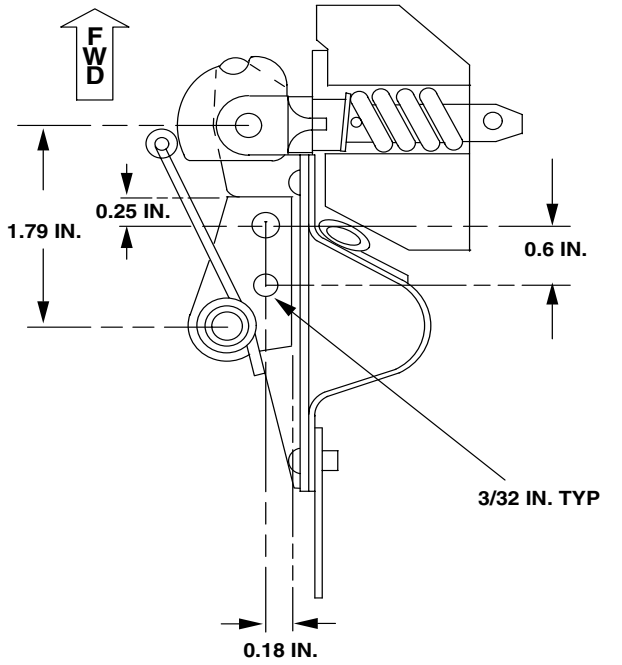
ASSEMBLE (New Hinge Halves or New Adapter)

36. Perform steps 12 and 13 this task.

37. Place adapter as shown on hinge half and drill two holes as shown.

38. Perform steps 14 through 22 this task.

INSPECT



VIEW LOOKING DOWN
L/H SIDE

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J0392

END OF TASK

2-2-15. CREW DOOR HINGE COMPONENTS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Material:
Drycleaning Solvent (D199)
Cheesecloth (D56)
Wiping Rags (D164)
Rubber Gloves (D111)
Abrasive Mats (D1)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

NOTE

Procedure for cleaning, inspecting, and repairing hinge halves, rod end clevis, hollow pins, key washers, torsion spring, and adapters is similar for both crew doors.

CLEAN

Drycleaning Solvent

1. Use drycleaning solvent (D199) and cheesecloth (D56) to clean hinge components.

2. Use wiping rags (D164) to dry hinge components.

GO TO NEXT PAGE

2-2-15. CREW DOOR HINGE COMPONENTS — CLEANING/INSPECTION/REPAIR (CONT)

INSPECT

3. Inspect hinge components for damage:

Rod end clevis
Key washer
Torsion spring
Adapter
Hinge half
Hollow pin.

4. Repair is not required for negligible damage. Negligible damage is limited to the following:

a. Wear or distortion which does not impair the functionality of the part.

b. Nicks, dents, scratches, or other physical damage which is less than 10% of the wall thickness.

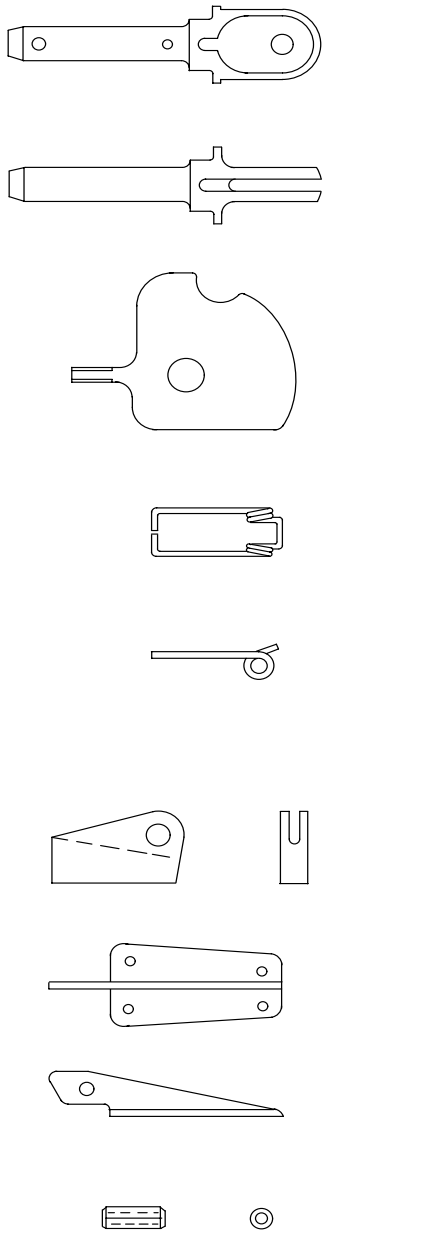
c. Corrosion that can be removed by hand with abrasive mat (D1).

5. If damage exceeds the above limits, or if any of the following damage is evident, replace hinge half (1) or missing/damaged rivets (TM 1-1500-204-23).

a. Cracks or breakage.

b. Loose or missing rivets.

c. Other damage.



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REPAIR

6. Remove crew door and place on work table (Task 2-2-10).

7. Disassemble hinge assembly to degree required (Task 2-2-14).

8. Repair by replacing damaged hinge components during assembly (Task 2-2-14).

INSPECT

END OF TASK

2-2-16. SEAT RESTRAINT — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B237)

Material:
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Access Door Removed (Task 2-2-6)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-16. SEAT RESTRAINT — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove seat belts (1) as follows:

a. Open buckle (2) and separate seat belts (1) from shoulder straps (3).

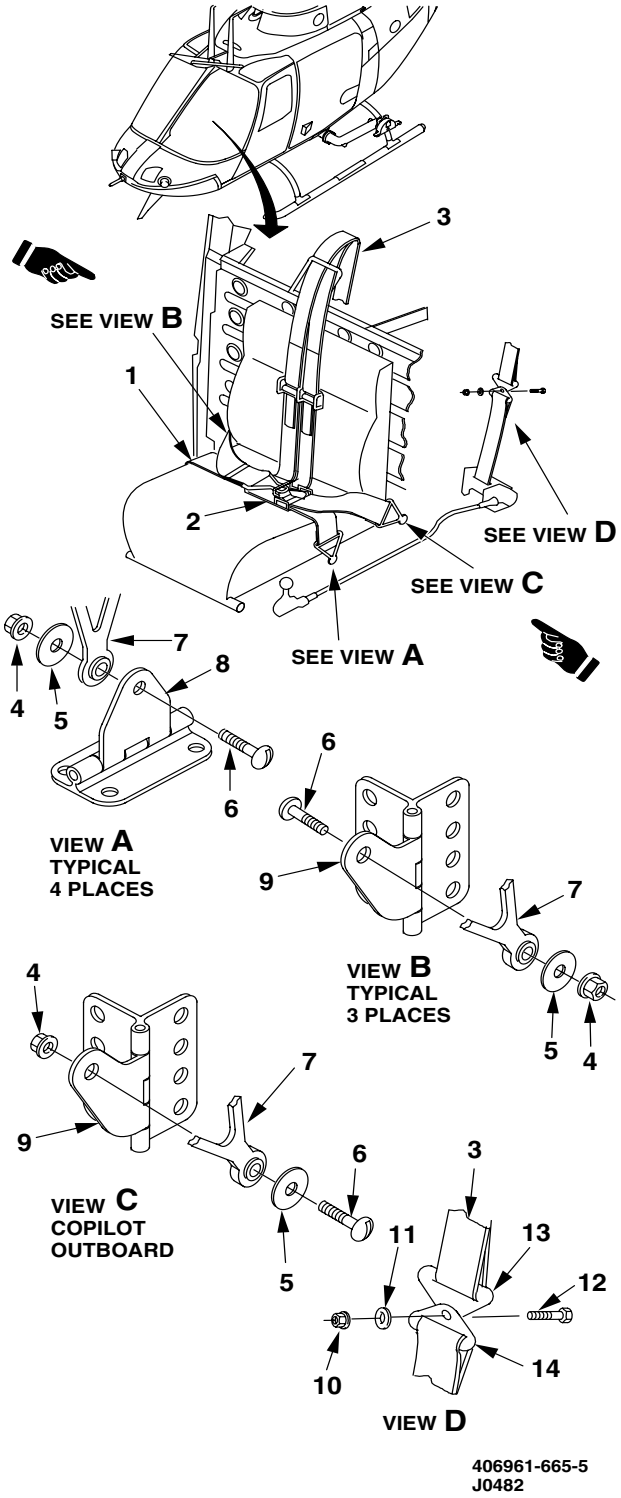
b. Remove two nuts (4), washers (5), and screws (6) to disconnect belt end fittings (7) from lower supports (8).

c. Remove two nuts (4), washers (5), and screws (6) to disconnect belt end fittings (7) from bulkhead supports (9).

2. Remove shoulder straps (3) as follows:

a. Remove nut (10), washer (11), and bolt (12). Disconnect shoulder strap end fitting (13) from inertia reel strap end fitting (14).

b. Pull straps (3) and fitting (13) through fitting on bulkhead behind seat.



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2-2-16. SEAT RESTRAINT — REMOVAL/INSTALLATION (CONT)

3. Remove inertia reel (15) as follows:

a. Cut and remove lockwire from control cable (16) knurled nuts (23).

b. Disconnect control cable (16) from control assembly (17) and inertia reel (15).

c. Disconnect control assembly (17) from seat by removing two screws (18) and washers (19).

d. Remove screw (20), three screws (21), and four washers (22) securing inertia reel (15) to airframe.

4. Remove inertia reel strap (24) as follows:

a. Remove access tab (25) from spring shield (26) on power spring end of inertia reel (15).

WARNING

To prevent injury to personnel, care shall be taken to prevent shaft from disengaging hex wrench and winding in rapidly. The power spring exerts a strong turning force on the main shaft.

b. Fully extend strap (24) and retain in extended position by inserting a **7/32-inch** hex wrench through access into main shaft socket.

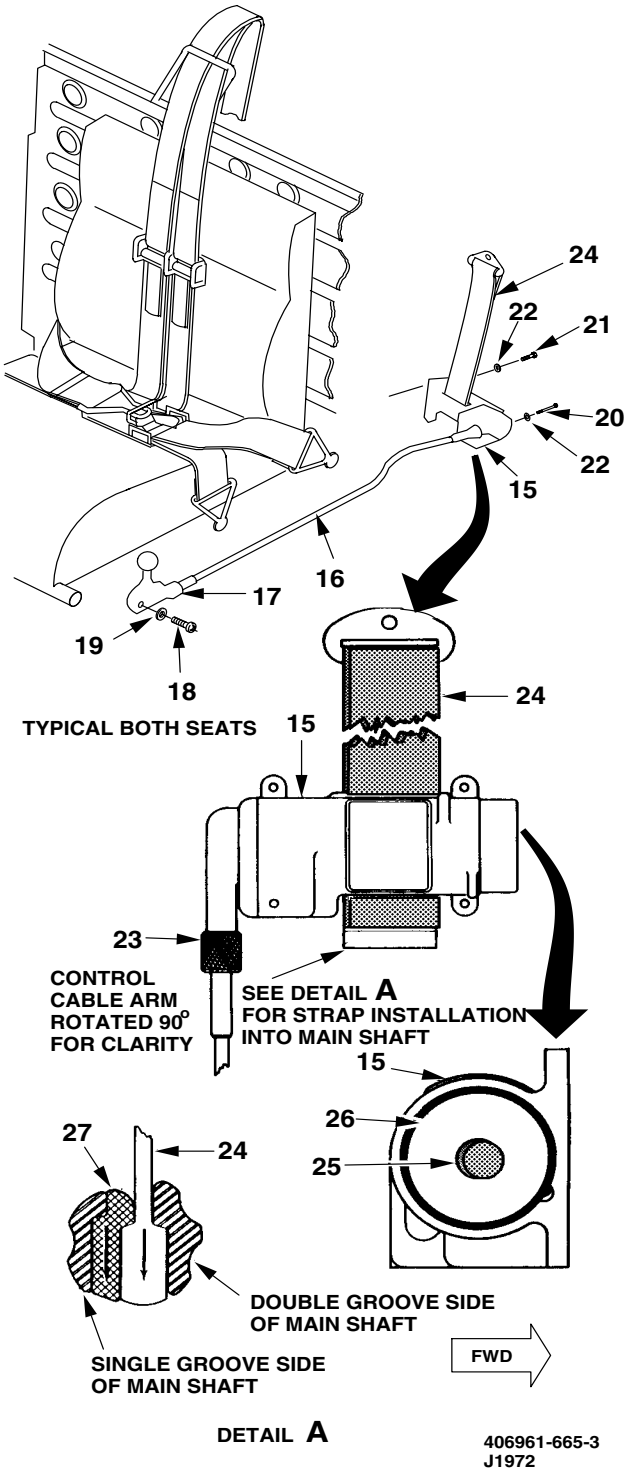
c. Push end of strap (24) in direction of arrow (detail A) through slot in main shaft to loosen strap retaining insert (27).

NOTE

The method of retaining strap in main shaft slot with strap retaining insert shall be observed for use in installation.

d. Remove strap retaining insert (27) and withdraw strap (24) from inertia reel (15).

e. Place strap retaining insert (27) into slot in main shaft to lock insert against main shaft. Remove hex wrench.



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2-2-16. SEAT RESTRAINT — REMOVAL/INSTALLATION (CONT)

INSTALL

5. Install inertia reel strap (24) as follows:

a. Insert **7/32-inch** hex wrench through access into main shaft socket of inertia reel (15). Relieve spring turning force on main shaft and remove strap retaining insert (27).

WARNING

To prevent injury to personnel, care shall be taken to prevent shaft from disengaging hex wrench and winding in rapidly. The power spring exerts a strong turning force on the main shaft.

b. Insert strap (24) through slot in main shaft and lock in place with strap retaining insert (27). (See detail A.)

NOTE

Insert shall be installed on single groove side of shaft.

c. Remove hex wrench and install access tab (25) in spring shield (26).

INSPECT

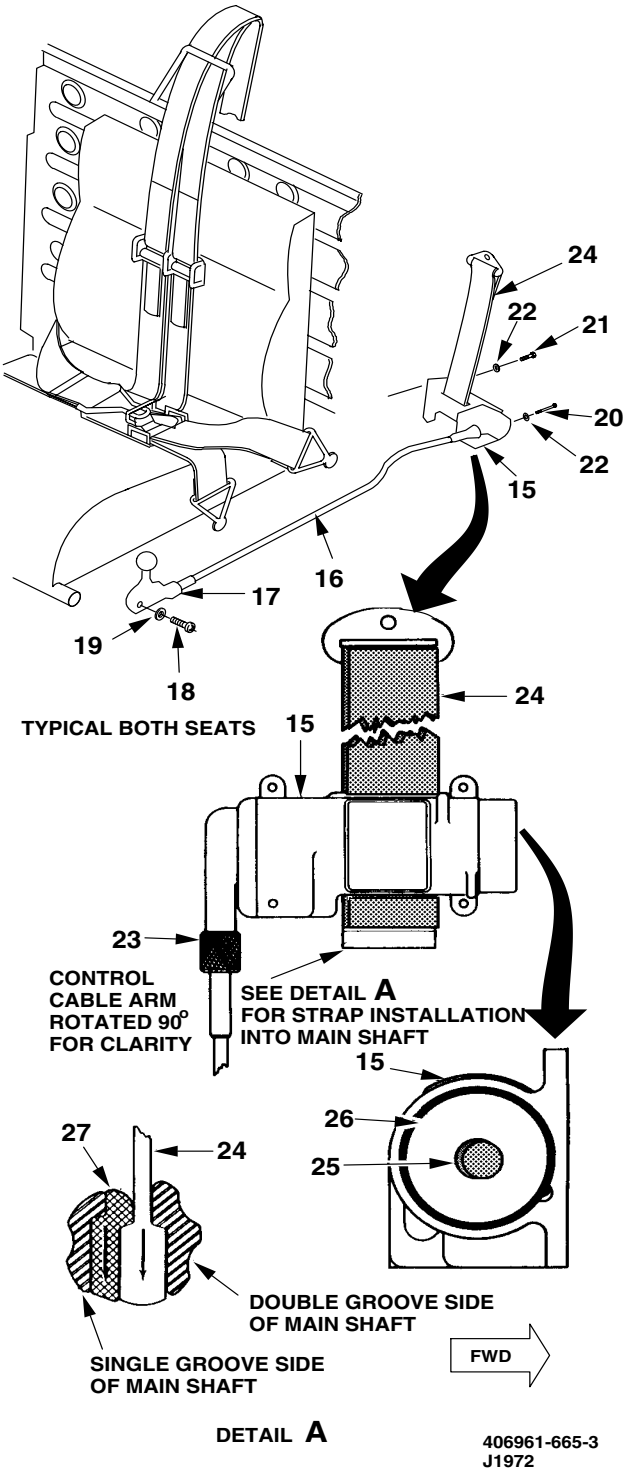
6. Install inertia reel (15) on airframe as follows:

a. Secure inertia reel (15) on airframe with screw (20), three screws (21), and four washers (22).

b. Connect control cable (16) to inertia reel (15) and secure knurled nut (23) with lockwire (D132) if required.

c. Secure control assembly (17) to seat with two screws (18) and two washers (19).

d. Connect control cable (16) to control assembly (17) and secure knurled nut (23) to control assembly (17) with lockwire (D132).



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2-2-16. SEAT RESTRAINT — REMOVAL/INSTALLATION (CONT)

7. Install shoulder strap (3) as follows:

a. Pass end fitting (13) through fitting on bulkhead behind seat.

CAUTION

Step b. is critical and shall be complied with exactly. Bolt threads can cause damage to cushions and uniforms.

b. Install bolt (12) through end fittings (13 and 14) with head of bolt facing aft.

c. Connect end fittings (13 and 14) with bolt (12), washer (11), and nut (10). Torque nut (10) **50 TO 70 INCH-POUNDS**.

d. Verify clearance between bolt (12) and wire bundles by pulling the restraint up and down from the front of the seat.

8. Install seat belts (1) as follows:

CAUTION

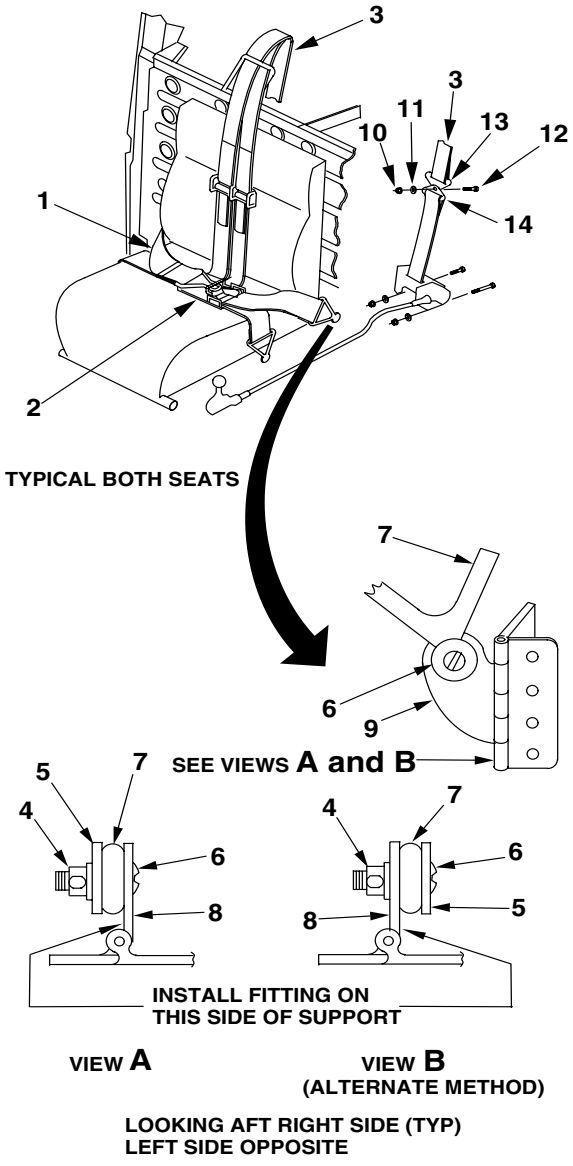
- To prevent damage to seat panels, end fitting (7) shall be installed between lower support (8) and washer (5) (View A).
- To prevent damage to seat panels, nut (4) shall be installed against lower support (8) (View B).
- To prevent damage to seat panels, all hardware shall be installed properly.

NOTE

Buckles and end fittings are integral parts of belt assembly and cannot be replaced separately. New belts shall be installed with buckles oriented with latch on left side.

a. Connect end fitting (7) to each bulkhead support (9) with screw (6), washer (5), and nut (4).

b. Connect end fitting (7) to each lower support (8) with screw (6), washer (5), and nut (4).



INSPECT

FOLLOW-ON MAINTENANCE

Install access door (Task 2-2-6).

END OF TASK

2-2-17. SEAT RESTRAINT — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Cheesecloth (D56)
Rubber Gloves (D111)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Acrylic Lacquer (D126)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-17. SEAT RESTRAINT — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

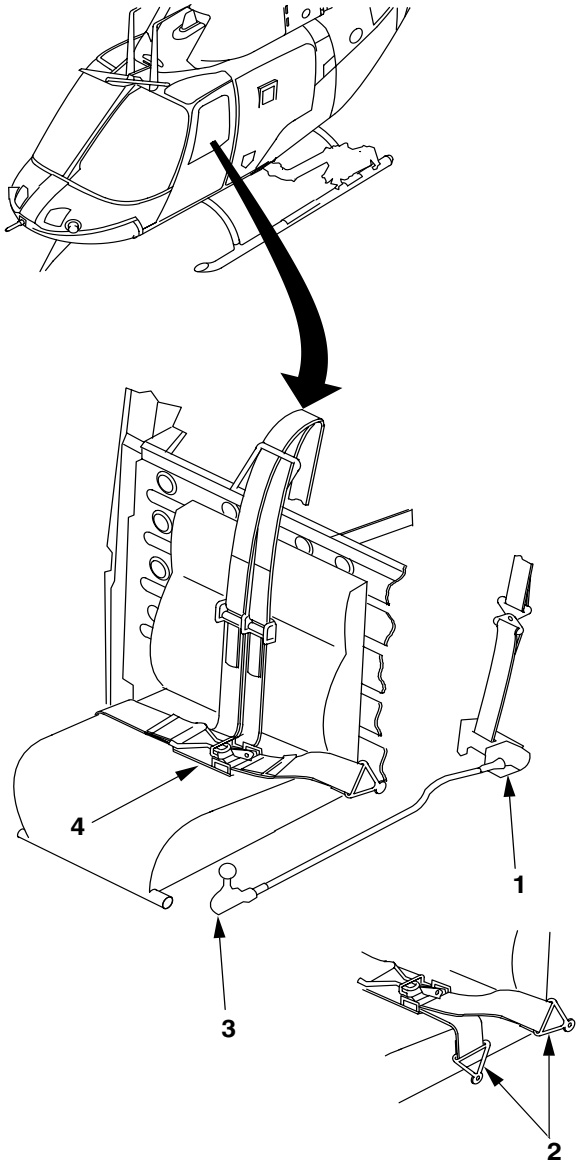
Drycleaning Solvent

1. Using cheesecloth (D56) slightly dampened with drycleaning solvent (D199), clean exterior of inertia reel (1), end fittings (2), control (3), and buckles (4).

CAUTION

To prevent damage to web belts, care shall be taken to prevent saturation of web belts while cleaning metal parts.

2. Clean straps (TM 1-1500-204-23).



TYPICAL BOTH SEATS

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2-2-17. SEAT RESTRAINT — CLEANING/INSPECTION/REPAIR (CONT)

INSPECT

3. Inspect seat belts (5), shoulder straps (6), and inertia reel strap (7) for cuts, fraying, and loose stitching. Inspect buckles (4) for positive latching.

4. Inspect seat belts (5), shoulder straps (6), and inertia reel strap (7) for cleanliness. If belts or straps are soiled beyond acceptability by any substance, replace them.

5. Ensure correct installation of webbing retarder spring (8) (TM 1-1500-204-23).

6. Inspect inertia reel (1), bulkhead supports (9), and lower supports (10) for secure mounting and structural integrity.

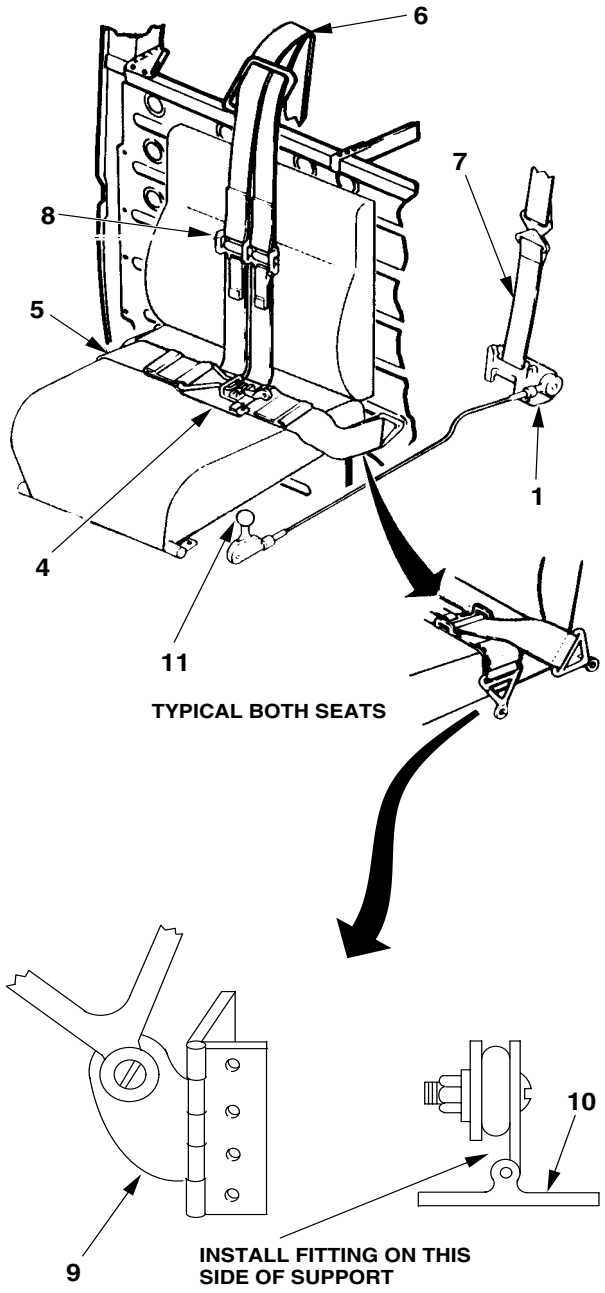
7. Inspect bulkhead supports (9) for corrosion to limits shown.

8. Inspect lower supports (10) for corrosion to limits shown.

9. Inspect shoulder harness for security of attachment to seat and to reel webbing.

10. Place control handle (11) in AUTO position. Disconnect shoulder harness from reel webbing, attach spring scale to end of reel webbing and, while watching scale, slowly pull length of webbing out of inertia reel. The tension indicated should be not less than 2 pounds initially nor more than 6 pounds when the final increment is pulled out of the reel.

11. Cycle control handle (11) from AUTO to MANUAL several times as the reel webbing is being reeled in and out. The reel shall positively lock and hold each time the handle is moved to MANUAL.



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2-2-17. SEAT RESTRAINT — CLEANING/INSPECTION/REPAIR (CONT)

REPAIR

12. Replace any items of seat restraint system which do not meet inspection requirements (Task 2-2-16).

Sanding Operations

13. Polish out acceptable damage on bulkhead supports (9) with 400 grit sandpaper (D175).

14. Polish out acceptable damage on lower supports (10) with 400 grit sandpaper (D175).

INSPECT

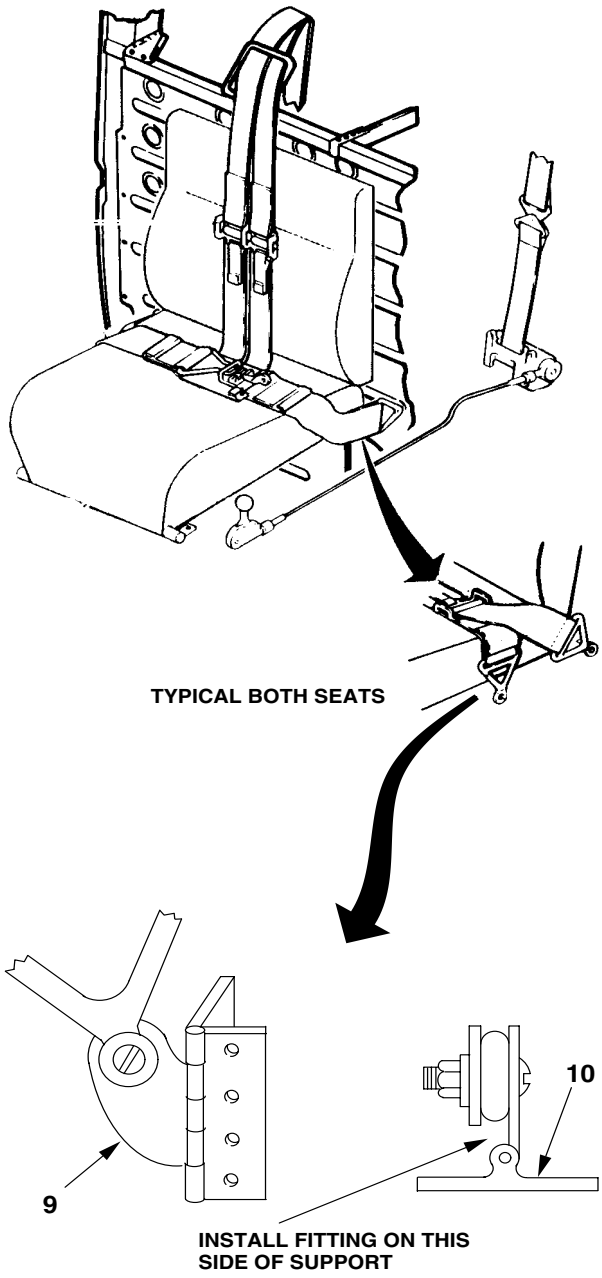
15. Apply one coat of epoxy primer coating (D98) to repaired area of bulkhead supports (9). Refer to TM 55-1500-345-23.

16. Apply one coat of epoxy primer coating (D98) to repaired area of lower supports (10). Refer to TM 55-1500-345-23.

17. Apply two coats of acrylic lacquer (D126) to primed area of bulkhead supports (9). Refer to TM 55-1500-345-23.

18. Apply two coats of acrylic lacquer (D126) to primed area of lower supports (10). Refer to TM 55-1500-345-23.

INSPECT



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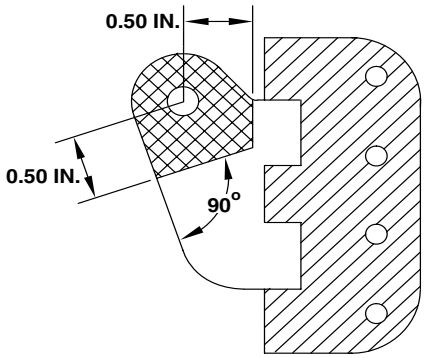
2-2-17. SEAT RESTRAINT — CLEANING/INSPECTION/REPAIR (CONT)



206-032-155
SUPPORT ASSEMBLY

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH		
MECHANICAL	None	0.006 in.	0.0150 in.
CORROSION 1	None	0.003 in. before 0.006 in. after	0.0075 in. before 0.0150 in. after
MAXIMUM AREA PER FULL DEPTH REPAIR	None	0.250 sq. in.	0.250 sq. in.
NUMBER OF REPAIRS	None	One per part	One per part
EDGE CHAMFER TO REMOVE DAMAGE	None	0.040 in. x 45°	0.040 in. x 45°
BORES 2	None	0.002 for 1/4 circumference	0.002 for 1/3 circumference

NOTE: 1 Corrosion damage must be cleaned up to twice damage depth.

2 Repairs near a bolt bore shall be made uniformly around the bore to provide a flat and square bolthead bearing surface.

3. No cracks are permitted.

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Support Assembly (206-032-155)

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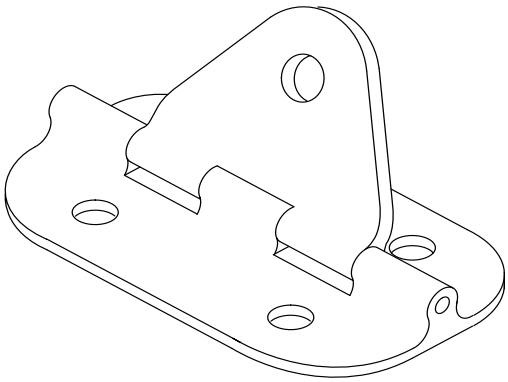

206-032-153
SUPPORT ASSEMBLY

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOLS MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.010 in.
CORROSION 1	0.005 in. before 0.010 in. after
MAXIMUM AREA PER FULL DEPTH REPAIR	0.250 sq. in.
NUMBER OF REPAIRS	One per part
EDGE CHAMFER TO REMOVE DAMAGE	0.040 in. x 45°
BORES 2	0.002 for 1/3 circumference

NOTE: 1 Corrosion damage must be cleaned up to twice damage depth.

2 Repairs near a bolt bore shall be made uniformly around the bore to provide a flat and square bolthead bearing surface.

3. No cracks are permitted.

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J0357

Support Assembly (206-032-153)

END OF TASK

2-2-18. SEAT RESTRAINT (ENERGY ATTENUATING) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Torque Wrench (B235)
Hand Blind Riveter (B117)

Material:
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Access Door Removed (Task 2-2-6)
Crew Door Removed (Task 2-2-10)
Closeout Removed (Task 2-2-31)

GO TO NEXT PAGE

2-2-18. SEAT RESTRAINT (ENERGY ATTENUATING) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Open buckle (1) separating shoulder strap (2), crotch belt (3) and center lap belt (4).

2. Remove shoulder strap (2) as follows:

NOTE

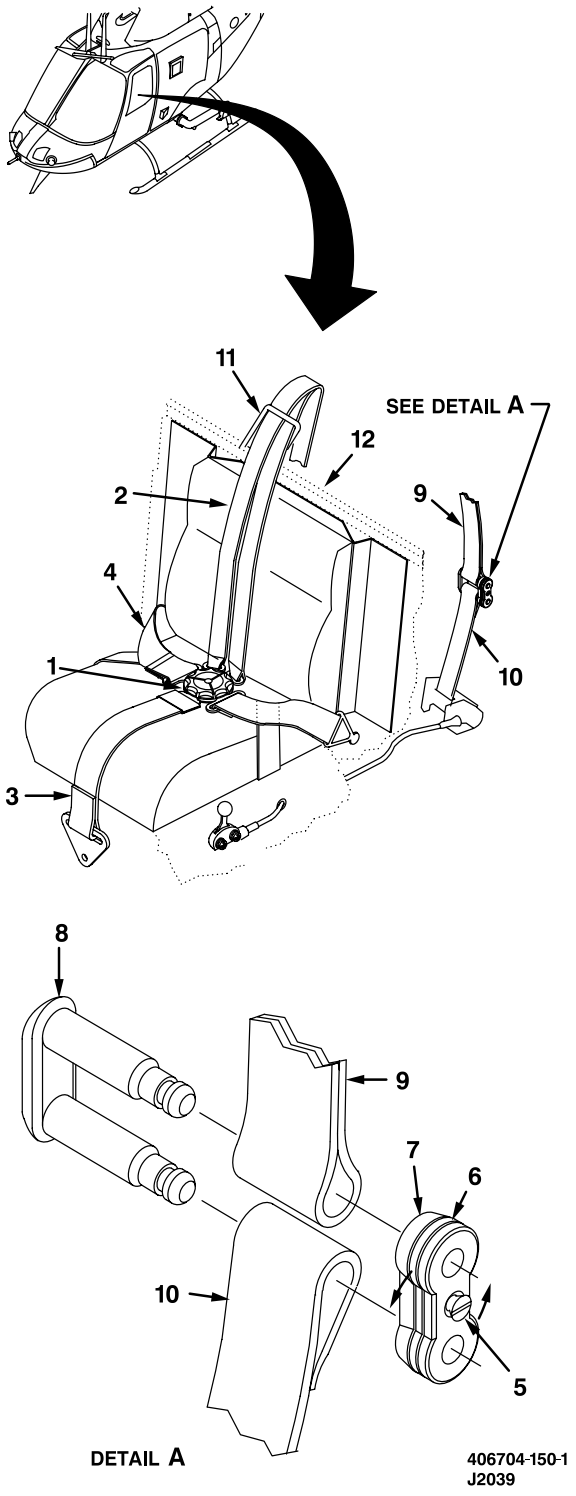
Screw installed in link cap is captive.

a. Turn screw (5) to loosen link cap retainer (6).

b. Slide link cap retainer (6) enough to remove link cap (7) from link (8).

c. Remove link (8) between end fittings (9 and 10).

d. Remove shoulder strap (2) and end fitting (9) by pulling through strap guide (11) on bulkhead (12).



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2-2-18. SEAT RESTRAINT (ENERGY ATTENUATING) — REMOVAL/INSTALLATION (CONT)

3. Remove inertia reel (13) as follows:

a. Cut and remove lockwire from control cable (14) knurled nuts (15).

b. Disconnect control cable (14) from control assembly (16) and inertia reel (13).

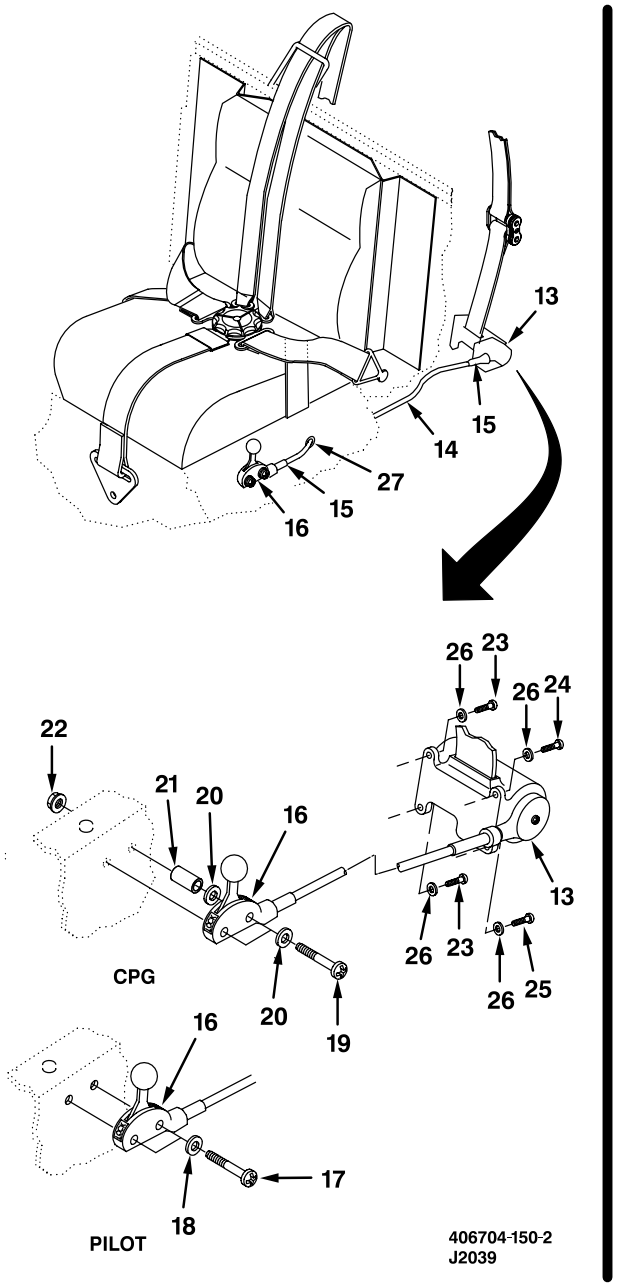
c. Disconnect pilot control assembly (16) from seat by removing two screws (17) and washers (18).

d. To gain access to CPG control assembly (16) hardware, perform steps 4b through 4g.

e. Disconnect CPG control assembly (16) from seat by removing two screws (19), four washers (20), two spacers (21), and two nuts (22).

f. Remove two screws (23), screw (24), screw (25), and four washers (26) securing inertia reel (13) to airframe.

g. Remove pilot or CPG control cable (14) by routing through grommet (27).



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4. Remove center lap belt (4) as follows:

a. Using strap (28), remove armor seat panel (29) from seat assembly (30).

b. Remove screw (31) and washer (32) from upper end of rebound assembly (33).

c. Remove two capnuts (34).

d. Loosen two jamnuts (35) and setscrews (36).

e. Press lever on slider assembly (37) and pull rebound assembly (33) downward.

f. Remove hinge pin (38) connecting seat assembly (30) to hinge half.

CAUTION

Care shall be exercised to prevent damaging or bending attenuating wires.

g. Lift front of seat assembly (30).

Drilling Operations

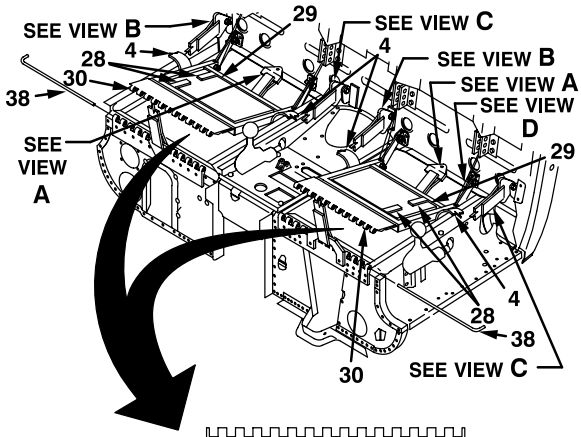
h. Using a No. 30 drill bit, remove two rivets (39) attaching brackets (40) to seat assembly (30).

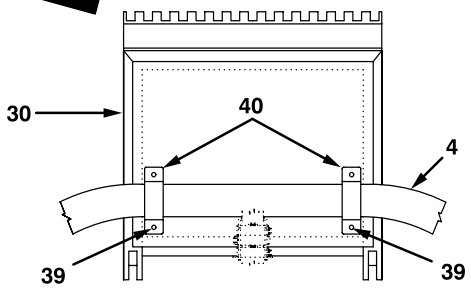
i. Rotate brackets (40) one-half turn releasing center lap belt (4).

j. Clean and deburr holes.

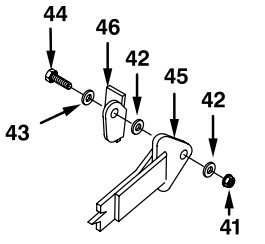
k. Remove nut (41), two washers (42), washer (43), and bolt (44) to disconnect each belt end fitting (45) from hinge (46).

l. Remove center lap belt (4).

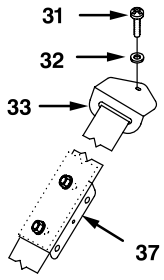




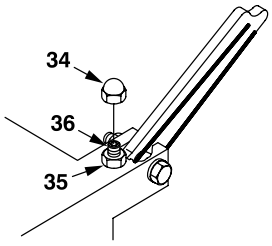
TYPICAL VIEW LOOKING UP AT SEAT BOTTOM



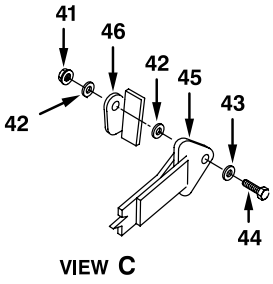
VIEW B



VIEW A



VIEW D



VIEW C

CPG OUTBOARD SHOWN

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2-2-18. SEAT RESTRAINT (ENERGY ATTENUATING) — REMOVAL/INSTALLATION (CONT)

5. Remove pilot and CPG crotch belt (3) as follows:

a. Pilot.

(1) Perform steps 4b through 4g to gain access to hardware.

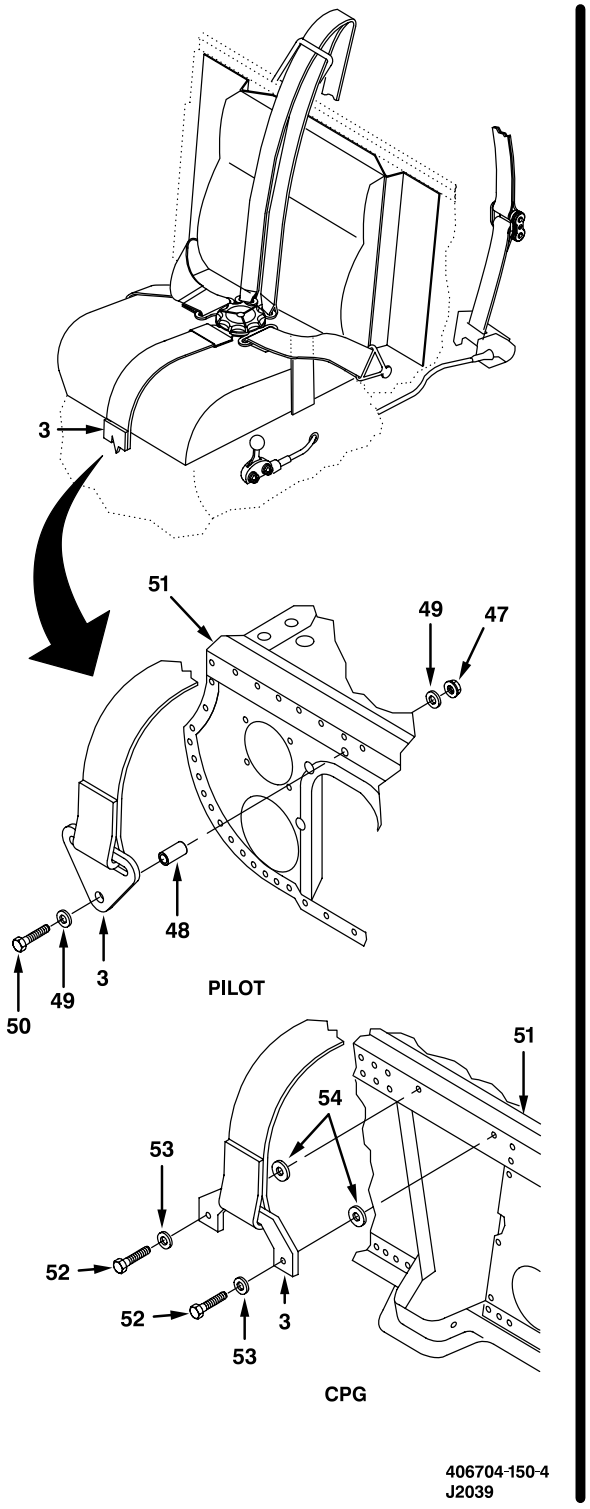
(2) Remove nut (47), spacer (48), two washers (49), and bolt (50) from forward bulkhead (51).

(3) Remove pilot crotch belt (3).

b. CPG.

(1) Remove two bolts (52), washers (53), and washers (54) from forward bulkhead (51).

(2) Remove CPG crotch belt (3).



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2-2-18. SEAT RESTRAINT (ENERGY ATTENUATING) — REMOVAL/INSTALLATION (CONT)

INSTALL

6. Install pilot and CPG crotch belt (3) as follows:

a. Pilot.

(1) Install bolt (50), spacer (48), and two washers (49) connecting crotch belt (3) and forward bulkhead (51).

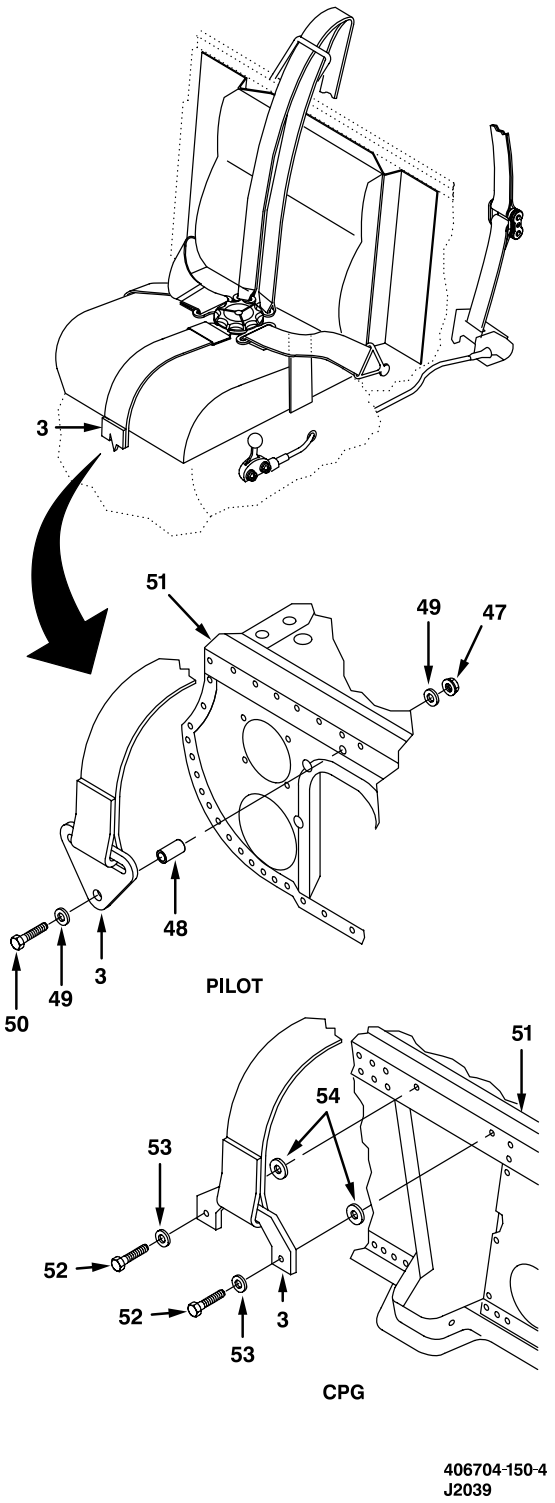
(2) Secure with nut (47).

(3) Perform steps 7d through 7h.

b. CPG.

(1) Attach crotch belt (3) to forward bulkhead (51).

(2) Secure with two bolts (52), washers (53), and washers (54).



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7. Install center lap belt (4) as follows:

CAUTION

Lap belt bolt head shall be on outboard side of lap belt to prevent nut from damaging side armor panel.

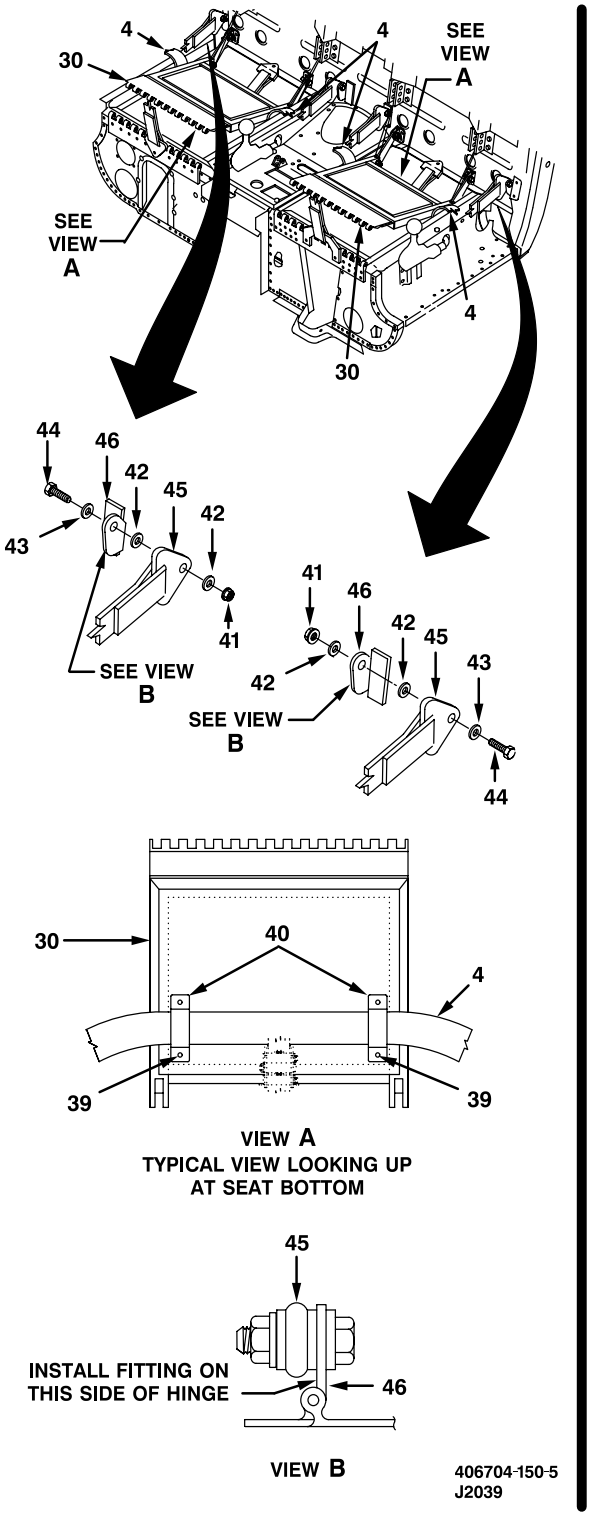
NOTE

Buckles and end fittings are integral parts of belt assembly and cannot be replaced separately.

a. Install belt end fittings (45) on hinges (46) with bolt (44), washer (43), two washers (42), and nut (41) per each fitting.

b. Position center lap belt (4) under brackets (40) of seat assembly (30).

c. Using hand blind riveter (B117), install two rivets (39) in brackets (40).



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NOTE

To ease installation of seat assembly, rebound assembly strap may be positioned as required.

d. Lower seat assembly (30) and install hinge pin (38).

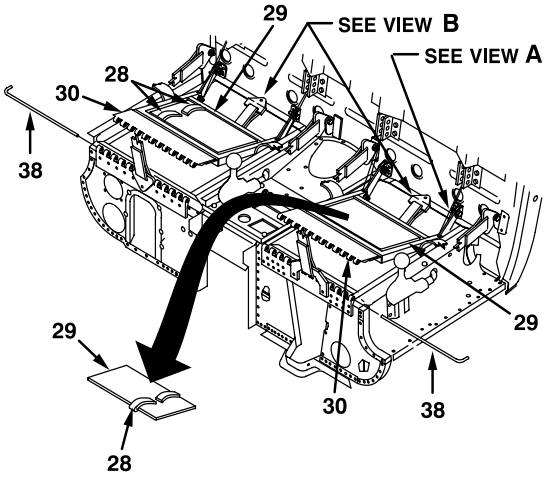
e. Tighten two setscrews (36) until attenuating wires (55) are tight.

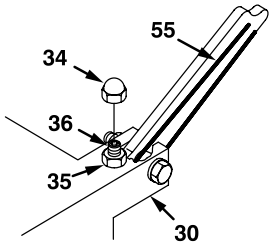
f. Tighten two jamnuts (35).

g. Install two capnuts (34). Torque capnuts **12 TO 15 INCH-POUNDS**.

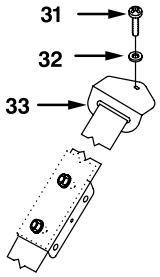
h. Install upper end of rebound assembly (33) with washer (32) and screw (31).

i. Place strap (28) under armor seat panel (29) with both ends of strap exposed and install armor seat panel (29) in seat assembly (30) by pressing into place.





VIEW A
CPG OUTBOARD SHOWN



VIEW B

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2-2-18. SEAT RESTRAINT (ENERGY ATTENUATING) — REMOVAL/INSTALLATION (CONT)

8. Install inertia reel (13) on airframe as follows:

a. Secure inertia reel (13) on airframe with two screws (23), screw (24), screw (25), and four washers (26).

b. Route control cable (14) through grommet (27) to inertia reel (13).

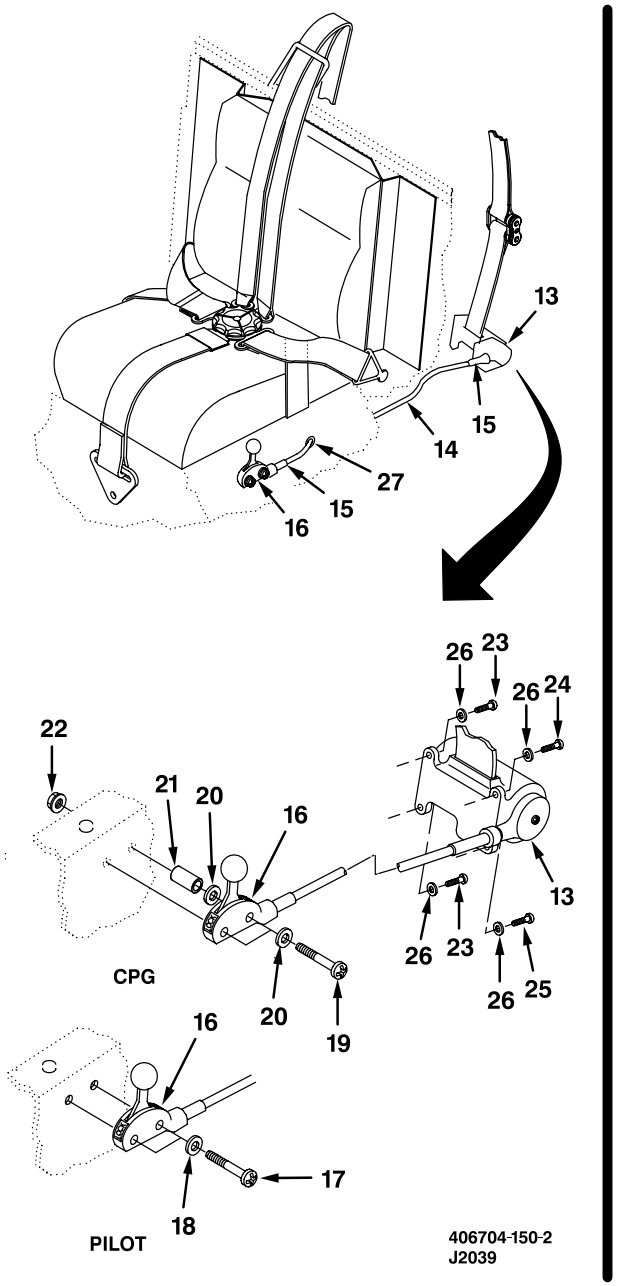
c. Connect control cable (14) to inertia reel (13) and secure knurled nut (15) with lockwire (D132).

d. Secure pilot control assembly (16) to seat with screws (17) and washers (18).

e. Secure CPG control assembly (16) to seat with screws (19) washers (20), spacers (21), and nuts (22).

f. For CPG control assembly (16) perform steps 7d through 7h.

g. Connect control cable (14) to control assembly (16) and secure knurled nut (15) to control assembly with lockwire (D132).



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2-2-18. SEAT RESTRAINT (ENERGY ATTENUATING) — REMOVAL/INSTALLATION (CONT)

9. Install shoulder strap (2) as follows:

a. Pass end fitting (9) through strap guide (11) on bulkhead (12).

b. Install link (8) through end fittings (9 and 10).

NOTE

Link cap shall be installed so direction of link cap retainer will lock on link.

c. Install link cap (7) on link (8).

d. Slide link cap retainer (6) into locking position. Tighten screw (5).

10. Connect shoulder strap (2), crotch belt (3) and center lap belt (4) to buckle (1).

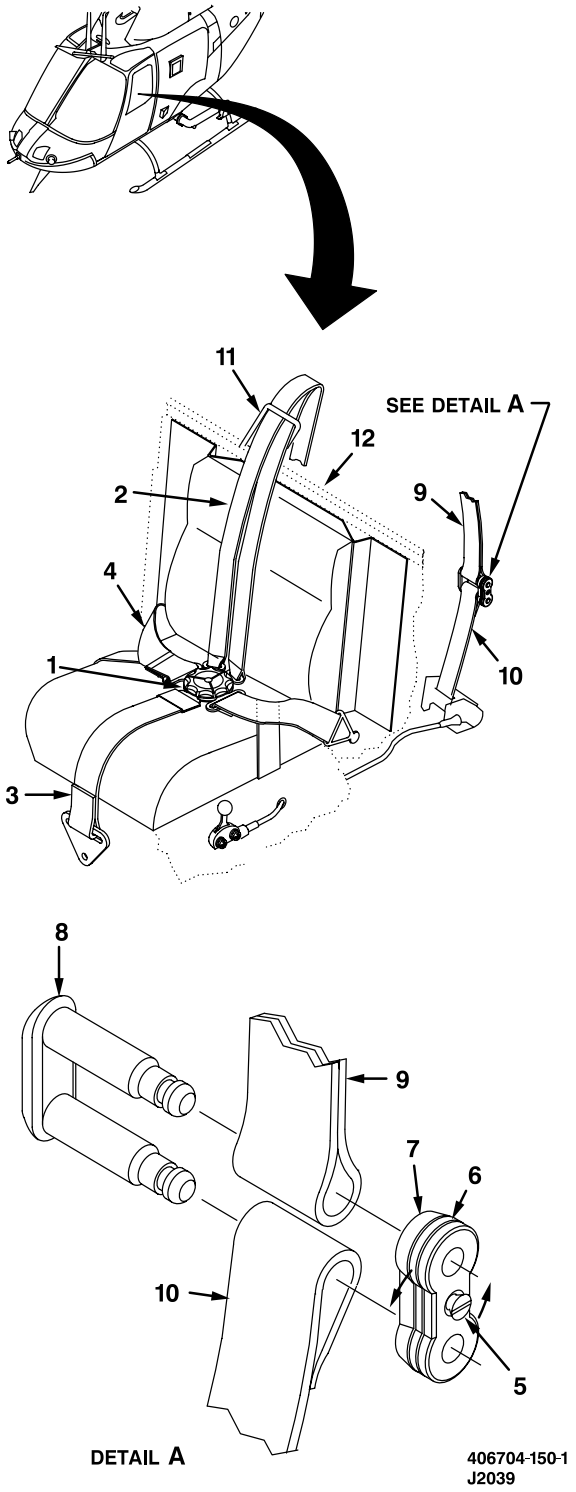
INSPECT

FOLLOW-ON MAINTENANCE

Install access door (Task 2-2-6).

Install closeout (Task 2-2-31).

Install crew door (Task 2-2-10).



END OF TASK

2-2-19. SEAT RESTRAINT (ENERGY ATTENUATING) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Cheesecloth (D56)
Rubber Gloves (D111)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Acrylic Lacquer (D126)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-19. SEAT RESTRAINT (ENERGY ATTENUATING) — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

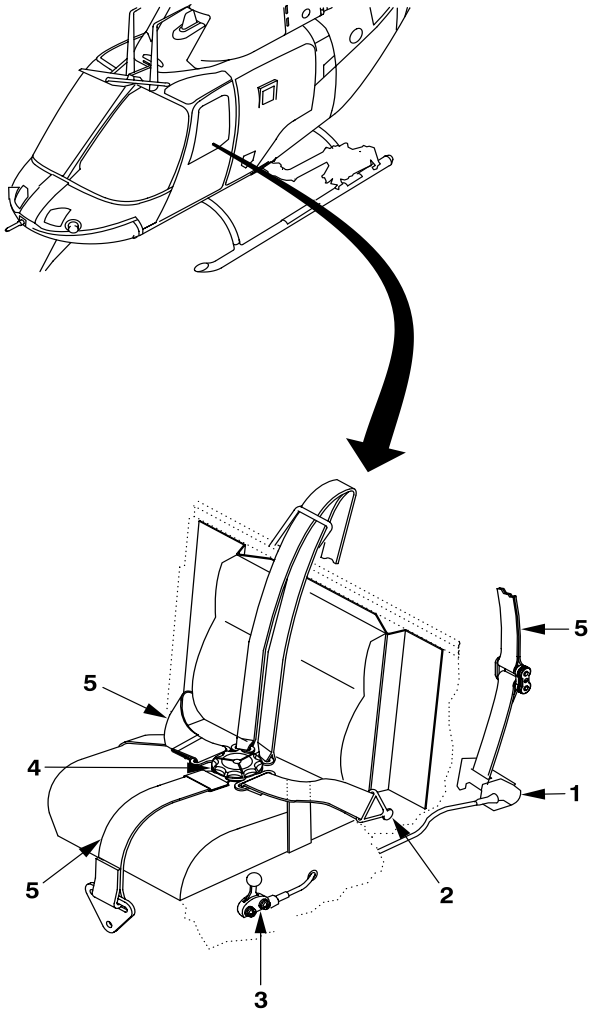
Drycleaning Solvent

1. Using cheesecloth (D56) slightly dampened with drycleaning solvent (D199), clean exterior of inertia reel (1), end fittings (2), control (3), and buckle (4).

CAUTION

To prevent damage to restraint system web belts, care shall be taken to prevent saturation of belts while cleaning metal parts.

2. Clean restraint system belts (5) (TM 1-1500-204-23).



TYPICAL BOTH SEATS

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2-2-19. SEAT RESTRAINT (ENERGY ATTENUATING) — CLEANING/INSPECTION/REPAIR (CONT)

INSPECT

3. Inspect restraint system belts (5) for cuts, fraying, and loose stitching. If any cut, tear, or loose stitching is found, replace restraint system.

4. Inspect buckle (4) for proper latching operation. If any belt end fails to insert and latch properly in buckle, replace restraint system.

5. Inspect restraint system belts (5) for cleanliness. If belts are soiled beyond acceptability by any substance, restraint system must be replaced.

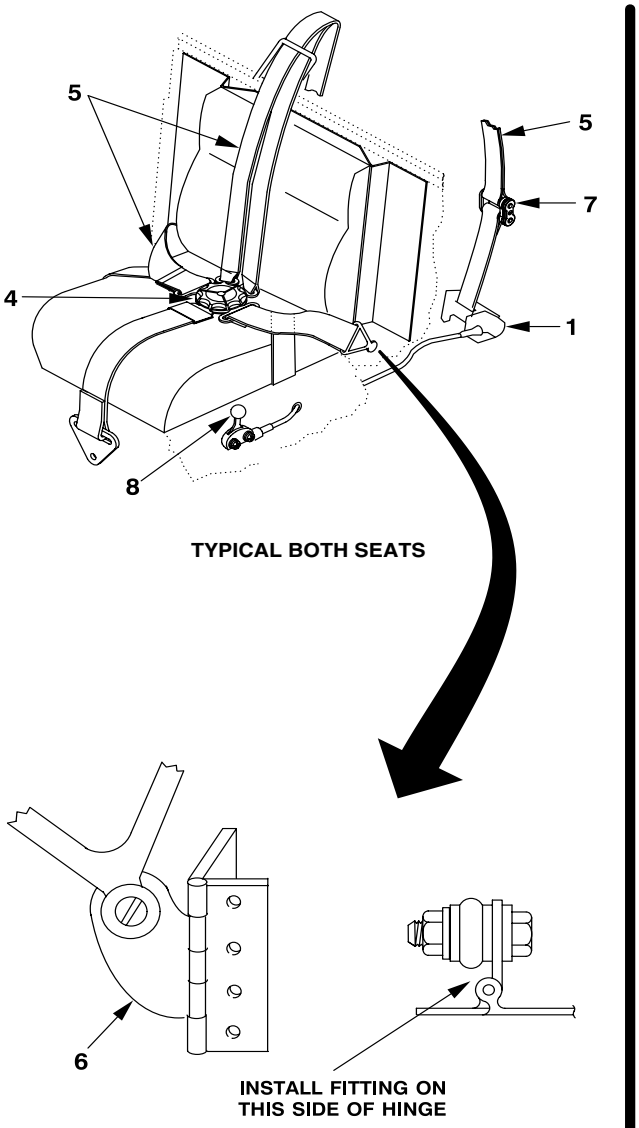
6. Inspect inertia reel (1) and bulkhead supports (6) for secure mounting and structural integrity.

7. Inspect bulkhead supports (6) for corrosion to limits shown. See figure Support Assembly.

8. Inspect shoulder harness for security of attachment to inertia reel link assembly (7).

9. Place control handle (8) in AUTO position. Disconnect shoulder harness from reel webbing, attach spring scale to end of reel webbing and, while watching scale, slowly pull length of webbing out of inertia reel. The tension indicated should be not less than 2 pounds initially nor more than 18 pounds when the final increment is pulled out of the reel.

10. Cycle control handle (8) from AUTO to MANUAL several times as the reel webbing is being reeled in and out. The reel shall positively lock and hold each time the handle is moved to MANUAL.



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2-2-19. SEAT RESTRAINT (ENERGY ATTENUATING) — CLEANING/INSPECTION/REPAIR (CONT)

REPAIR

11. Replace seat restraint system if any inspection requirements are not met (Task 2-2-18).

Sanding Operations

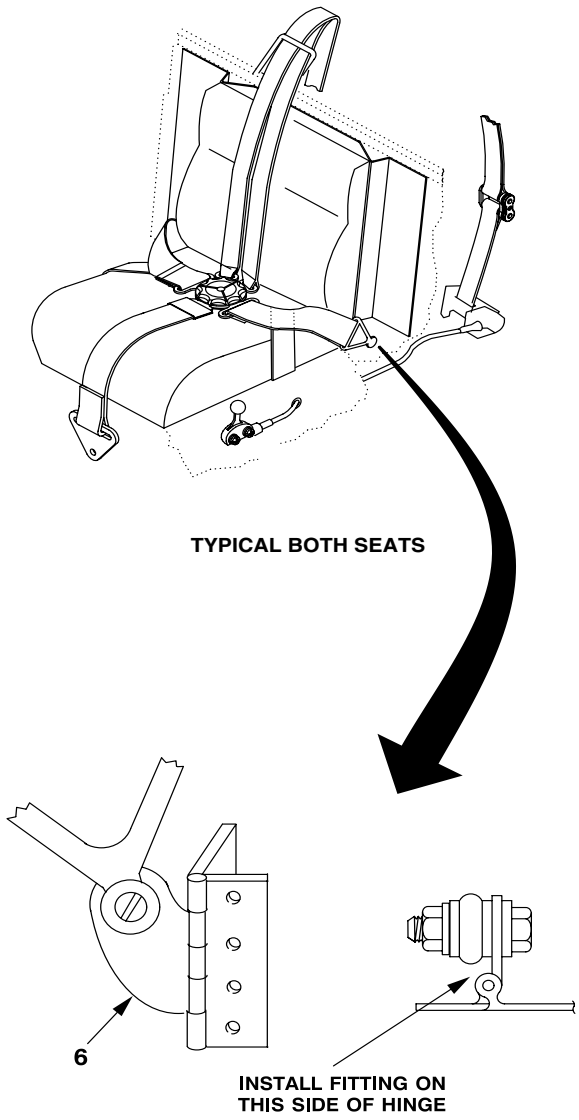
12. Polish out acceptable damage on bulkhead supports (6) with 400 grit sandpaper (D175).

INSPECT

13. Apply one coat of epoxy primer coating (D98) to repaired area of bulkhead supports (6). Refer to TM 55-1500-345-23.

14. Apply two coats of acrylic lacquer (D126) to primed area of bulkhead supports (6). Refer to TM 55-1500-345-23.

INSPECT



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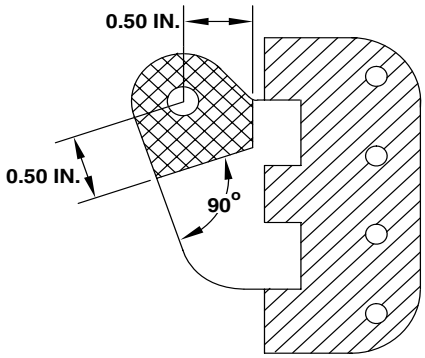

206-032-155
SUPPORT ASSEMBLY

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH		
MECHANICAL	None	0.006 in.	0.0150 in.
CORROSION 1	None	0.003 in. before 0.006 in. after	0.0075 in. before 0.0150 in. after
MAXIMUM AREA PER FULL DEPTH REPAIR	None	0.250 sq. in.	0.250 sq. in.
NUMBER OF REPAIRS	None	One per part	One per part
EDGE CHAMFER TO REMOVE DAMAGE	None	0.040 in. x 45°	0.040 in. x 45°
BORES 2	None	0.002 for 1/4 circumference	0.002 for 1/3 circumference

NOTE: 1 Corrosion damage must be cleaned up to twice damage depth.

2 Repairs near a bolt bore shall be made uniformly around the bore to provide a flat and square bolthead bearing surface.

3. No cracks are permitted.

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Support Assembly (206-032-155)

END OF TASK

2-2-20. BACK CUSHION — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

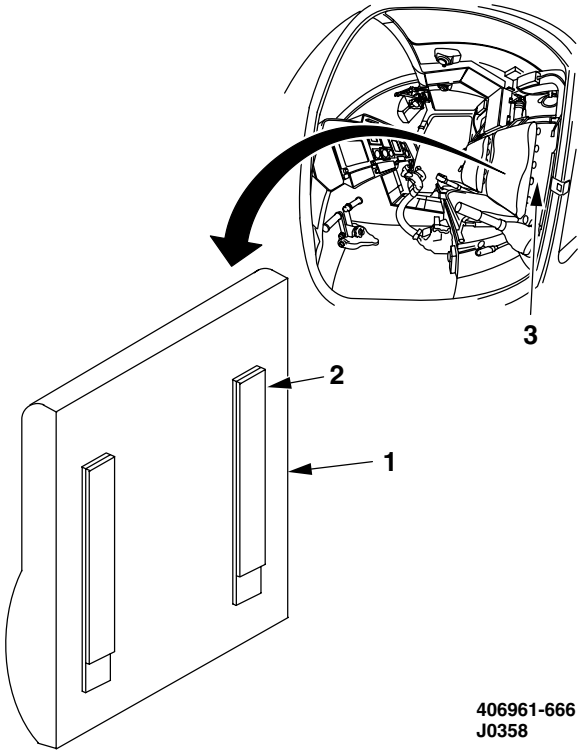
Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

REMOVE

1. Remove seatback cushion (1) by pulling top of seat back firmly which will allow Velcro fastening strips (2) to separate.

2. Install seatback cushion (1) by visually aligning Velcro strips (2) with matching strips on seatback support (3) and pressing firmly.



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END OF TASK

2-2-21. BACK CUSHION — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Soap (D192)
Wiping Rags (D164)
Rubber Gloves (D111)

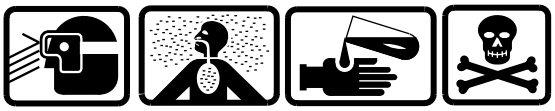
Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23

CLEAN

Drycleaning Solvent

1. Clean grease and oil from seatback cushion with wiping rags (D164) dampened with drycleaning solvent (D199).



Cleaning Compound

2. Clean dirt and soil from seatback cushion with mild soap (D192) and warm water.

INSPECT

3. Inspect seatback cushion for cleanliness, tears, fraying, and worn Velcro fasteners.

REPAIR

4. Replace Velcro fasteners, and sew tears and frays in accordance with TM 1-1500-204-23.

END OF TASK

2-2-22. SEATBACK CUSHION — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

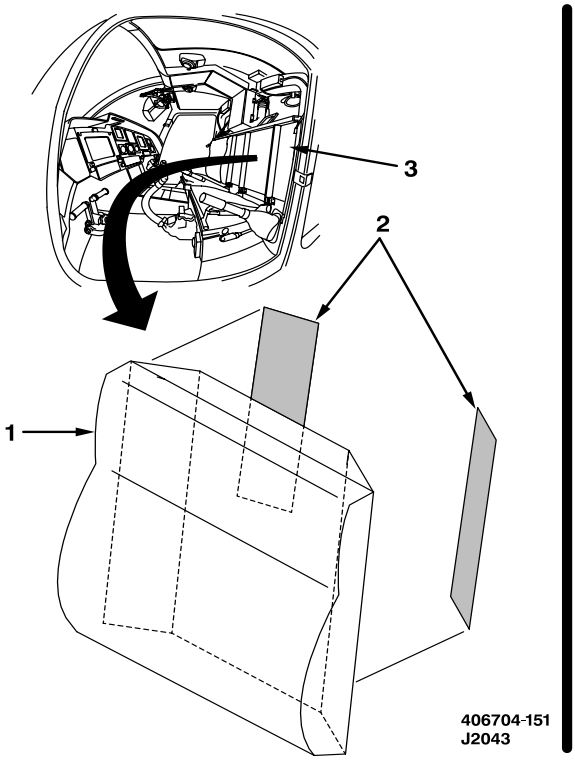
REMOVE

1. Remove seatback cushion (1) by pulling top of cushion to separate Velcro fastening strips (2).

INSTALL

2. Install seatback cushion (1) by visually aligning Velcro strips (2) with matching strips on backrest (3) and pressing firmly.

INSPECT



END OF TASK

2-2-23. SEATBACK CUSHION — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Adhesive (D8)
Drycleaning Solvent (D199)
Soap (D192)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23

CLEAN

Drycleaning Solvent

1. Clean grease and oil from seatback cushion with wiping rags (D164) dampened with drycleaning solvent (D199).

Cleaning Compound

2. Clean dirt and soil from seatback cushion with mild soap (D192) and warm water.

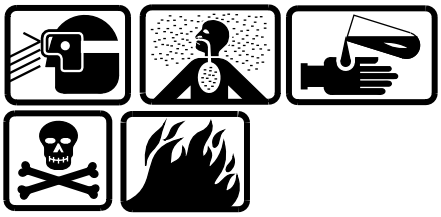
INSPECT

3. Inspect seatback cushion for cleanliness, burns, tears, fraying, and worn Velcro fasteners.

4. Inspect for acceptable resiliency of seatback padding.

REPAIR

5. Sew tears and frays in accordance with TM 1-1500-204-23.



Urethane Adhesive

6. Replace Velcro fasteners using adhesive (D8).

END OF TASK

2-2-24. RASCHEL SEAT COVERS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Marking Stencil Ink (D122)
Nylon Cord (D230) (2 ea., 60 inches in length) (Primary)
Nylon Cord (D74) (2 ea., 60 inches in length) (Alternate)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23

REMOVE

1. Remove nylon cord (1) (D230) from seat cover (2). Discard nylon cord (1).

2. Remove seat cover (2) from cushion (3).

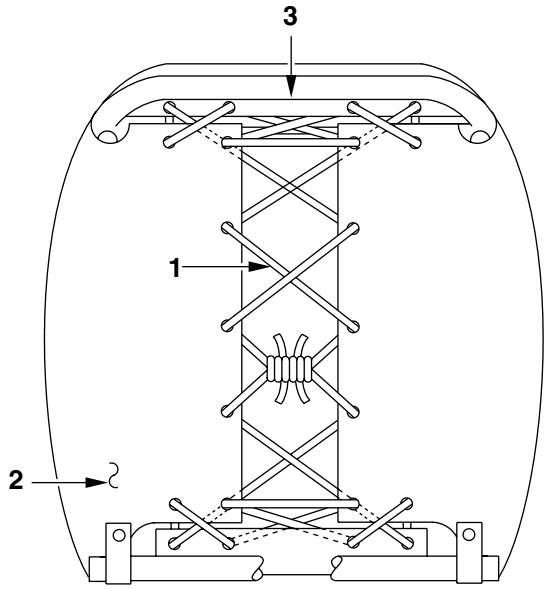
INSTALL

3. Install seat cover (2) on cushion (3).

NOTE

Nylon cord in step 4 should be tightly laced to compensate for stretching of seat cover after initial use. Seat cover tension shall be maintained to ensure support for occupant.

4. Secure seat cover (2) on cushion (3) with nylon cord (1) (D230) as follows:



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2-2-24. RASCHEL SEAT COVERS — REMOVAL/INSTALLATION (CONT)

a. Start lacing at point (4) for first nylon cord and at point (5) for second nylon cord.

NOTE

- Workaid shown may be made from locally procured hardware.
- Five workaids may be used to aid in tightening seat covers.

b. After proper tension is achieved, tie ends of first nylon cord together.

c. After proper tension is achieved, tie ends of second nylon cord together.

NOTE

- Alternate method of tying knot is shown.
- Alternate method may be used so long as proper seat cover deflection is achieved.

d. Pull two knots together and tie together at point (6).

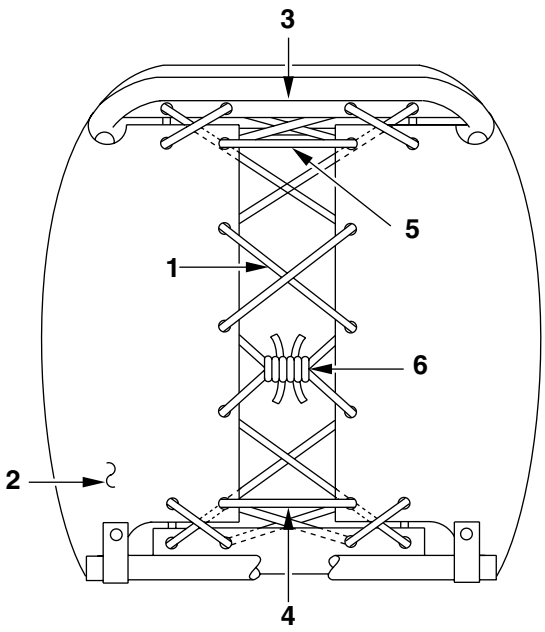
NOTE

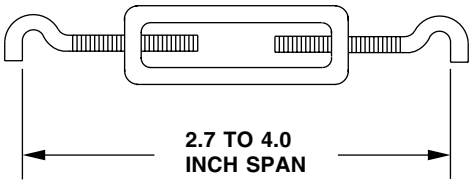
To check seat cover deflection, an occupant or high density material placed in such a manner as to represent an occupant may be used.

5. Check seat cover (2) deflection. With load of approximately 166 pounds uniformly distributed over normally exposed side of cushion assembly, deflection shall not be more than **2.0 inches**. If deflection is more than allowable limit, tighten tension on nylon cord (1) (D230) until correct deflection is obtained.

6. Use marking stencil ink (D122) to mark installation date on seat cover (2) (TM 1-1500-204-23).

INSPECT





SUGGESTED WORK AID

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END OF TASK

2-2-25. MAP CASE — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

REMOVE

1. Remove two screws (1), washers (2), and spacers (3) attaching map case (4) to bulkhead (5).

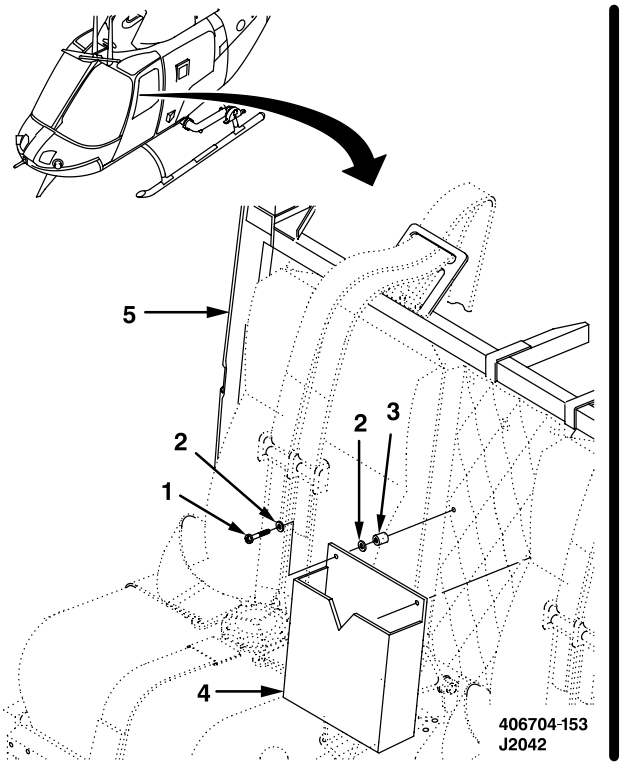
2. Remove map case (4) from bulkhead (5).

INSTALL

3. Position map case (4) onto bulkhead (5).

4. Install map case (4) using two spacers (3), washers (2) and screws (1).

INSPECT



END OF TASK

2-2-26. SOUNDPROOFING INSULATION BLANKET — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Map Case Removed (Task 2-2-25)

REMOVE

1. Remove utility light (1) from bracket (2) by pulling.

2. Remove soundproofing insulation blanket (3) by carefully pulling top corners, releasing snaps (4).

INSTALL

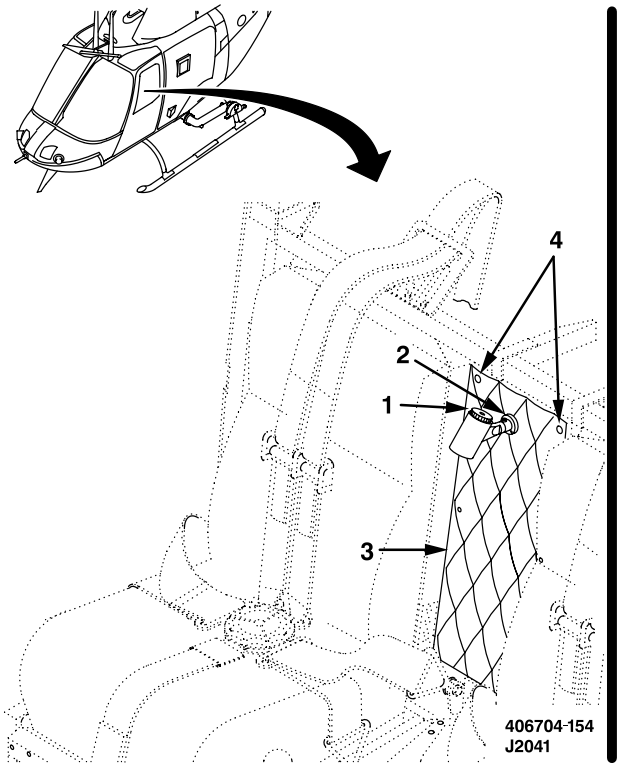
3. Install soundproofing insulation blanket (3) by attaching snaps (4).

4. Install utility light (1).

INSPECT

FOLLOW-ON MAINTENANCE

Install map case (Task 2-2-25).



END OF TASK

2-2-27. SEAT CUSHION — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

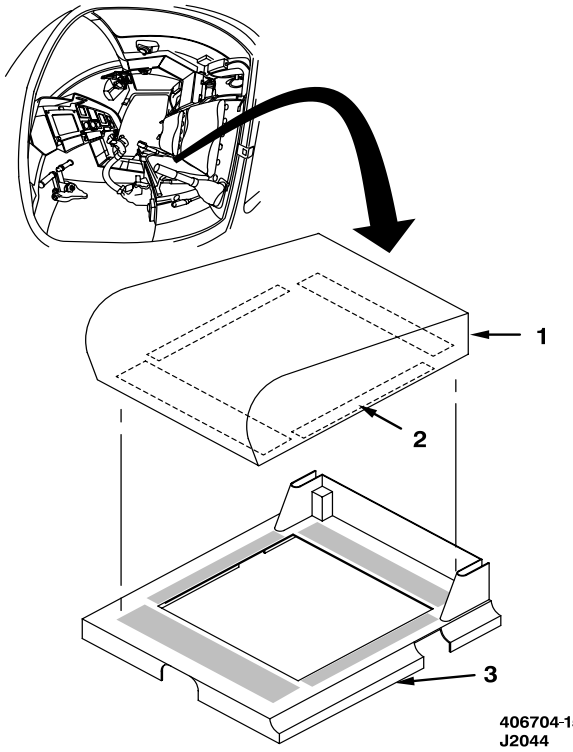
REMOVE

1. Remove seat cushion (1) by pulling top of cushion to separate Velcro fastening strips (2).

INSTALL

2. Install seat cushion (1) by visually aligning Velcro strips (2) with matching strips on closeout (3) and pressing firmly.

INSPECT



END OF TASK

2-2-28. SEAT CUSHION — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Adhesive (D8)
Drycleaning Solvent (D199)
Soap (D192)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23

CLEAN

Drycleaning Solvent

1. Clean grease and oil from seat cushion with wiping rags (D164) dampened with drycleaning solvent (D199).

Cleaning Compound

2. Clean dirt and soil from seat cushion with mild soap (D192) and warm water.

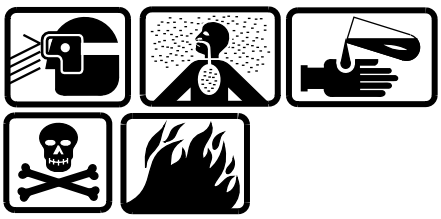
INSPECT

3. Inspect seat cushion for cleanliness, burns, tears, fraying, and worn Velcro fasteners.

4. Inspect for acceptable resiliency of seat cushion padding.

REPAIR

5. Sew tears and frays in accordance with TM 1-1500-204-23.



Urethane Adhesive

6. Replace Velcro fasteners using adhesive (D8).

END OF TASK

2-2-29. BACKREST (TYPICAL) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Seatback Cushion Removed (Task 2-2-22)
Soundproofing Insulation Blanket Removed (Task 2-2-26)

REMOVE

NOTE

This task is typical for pilot/CPG.

1. Remove backrest (1) by pulling bottom corners of backrest to separate Velcro fastening strips (2).

INSTALL

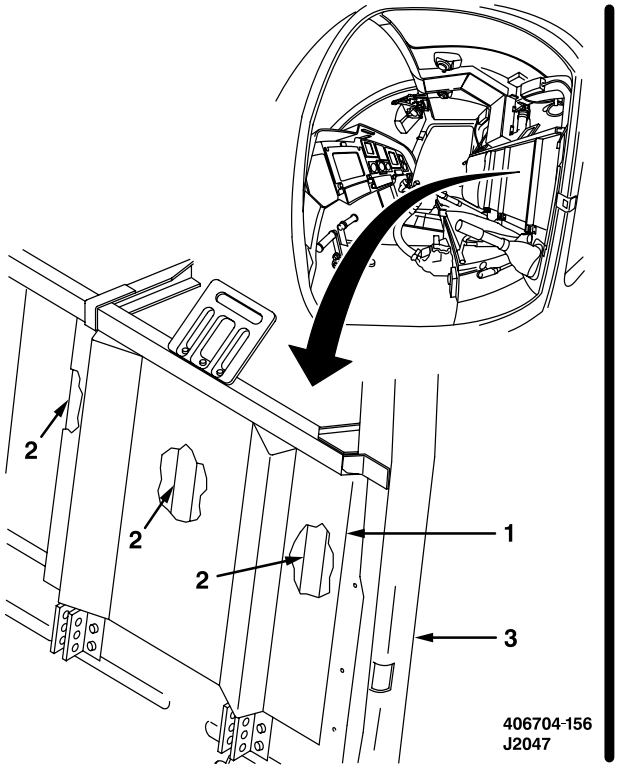
2. Install backrest (1) by visually aligning Velcro strips (2) with matching strips on bulkhead (3) and pressing firmly.

INSPECT

FOLLOW-ON MAINTENANCE

Install seatback cushion (Task 2-2-22).

Install soundproofing insulation blanket (Task 2-2-26).



END OF TASK

2-2-30. BACKREST — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Drill (B40)
Drill Set (B126)

Material:
Adhesive (D8)
Soap (D192)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

CLEAN

Cleaning Compound

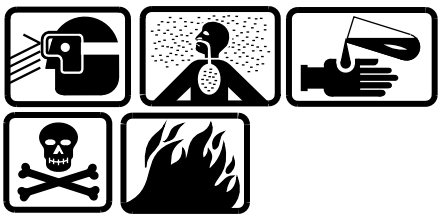
1. Clean backrest with wiping rags (D164) dampened with mild soap (D192) and warm water.

INSPECT

2. Inspect backrest for cleanliness, cracks, and worn Velcro fasteners.

REPAIR

3. Stop drill cracks less than **1 inch** using drill (B40) and drill set (B126).



Urethane Adhesive

4. Replace Velcro fasteners using adhesive (D8).

END OF TASK

2-2-31. CLOSEOUT (TYPICAL) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Seatback Cushion Removed (Task 2-2-22)
Seat Cushion Removed (Task 2-2-27)

GO TO NEXT PAGE

2-2-31. CLOSEOUT (TYPICAL) — REMOVAL/INSTALLATION (CONT)

REMOVE

NOTE

This task is typical for pilot/CPG.

1. Remove closeout (1) by pulling top corners of closeout to separate Velcro fastening strips (2).

INSTALL

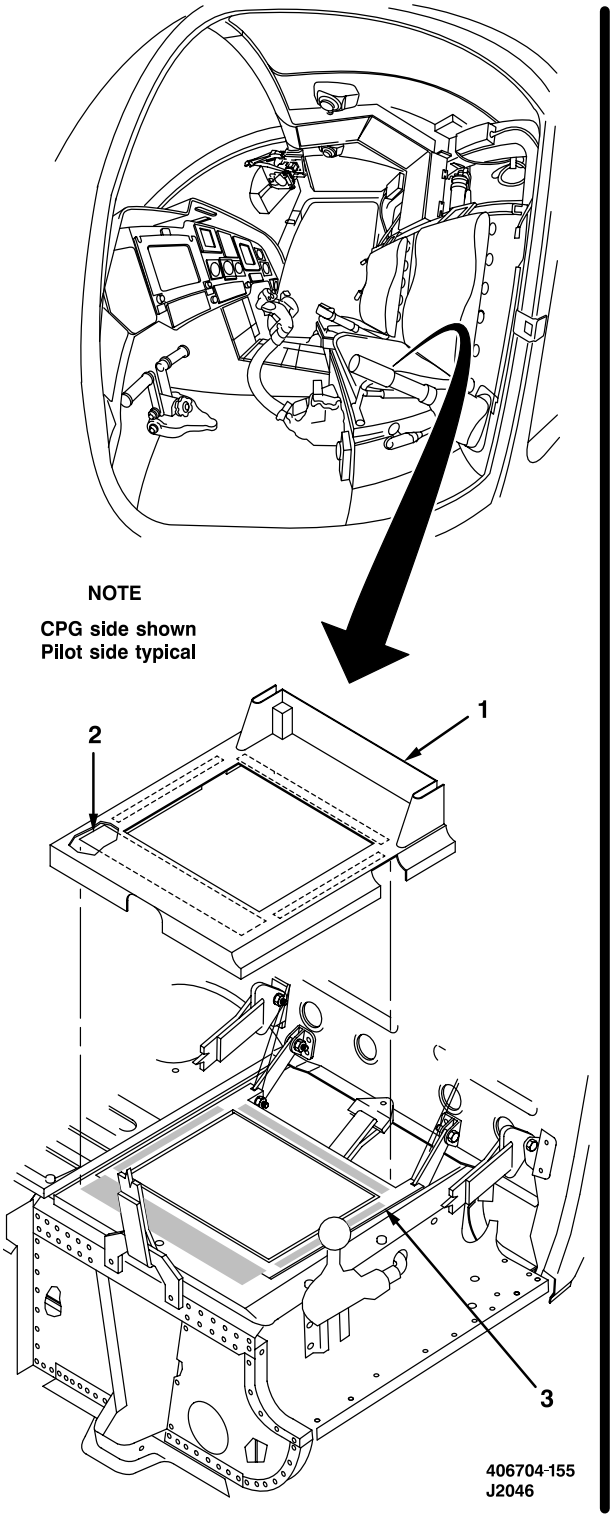
2. Install closeout (1) by visually aligning Velcro strips (2) with matching strips on seat assembly (3) and pressing firmly.

INSPECT

FOLLOW-ON MAINTENANCE

Install seat cushion (Task 2-2-27).

Install seatback cushion (Task 2-2-22).



END OF TASK

2-2-32. CLOSEOUT — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

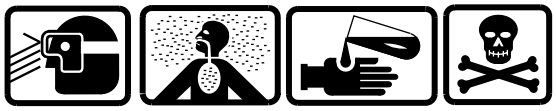
Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Drill (B40)
Drill Set (B126)

Material:
Adhesive (D8)
Soap (D192)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

CLEAN



Cleaning Compound

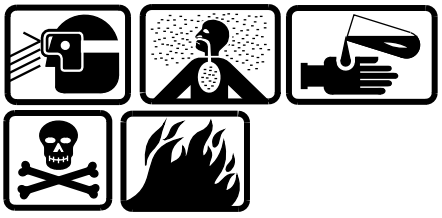
1. Clean closeout with wiping rags (D164) dampened with mild soap (D192) and warm water.

INSPECT

2. Inspect closeout for cleanliness, cracks, and worn Velcro fasteners.

REPAIR

3. Stop drill cracks less than **1 inch** using drill (B40) and drill set (B126).



Urethane Adhesive

4. Replace Velcro fasteners using adhesive (D8).

END OF TASK

2-2-33. CREW SEAT AND ARMOR SEAT PANEL — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Back Cushion Removed (Task 2-2-20)
Seat Restraint Removed (Task 2-2-16)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-33. CREW SEAT AND ARMOR SEAT PANEL — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove seat (1) by removing two screws (2) with washers (3).

2. Remove armor seat panel (4) by removing four screws (5) with washers (6) and three screws (7).

INSTALL

3. Install armor seat panel (4) by installing four screws (5) with washers (6) and three screws (7).

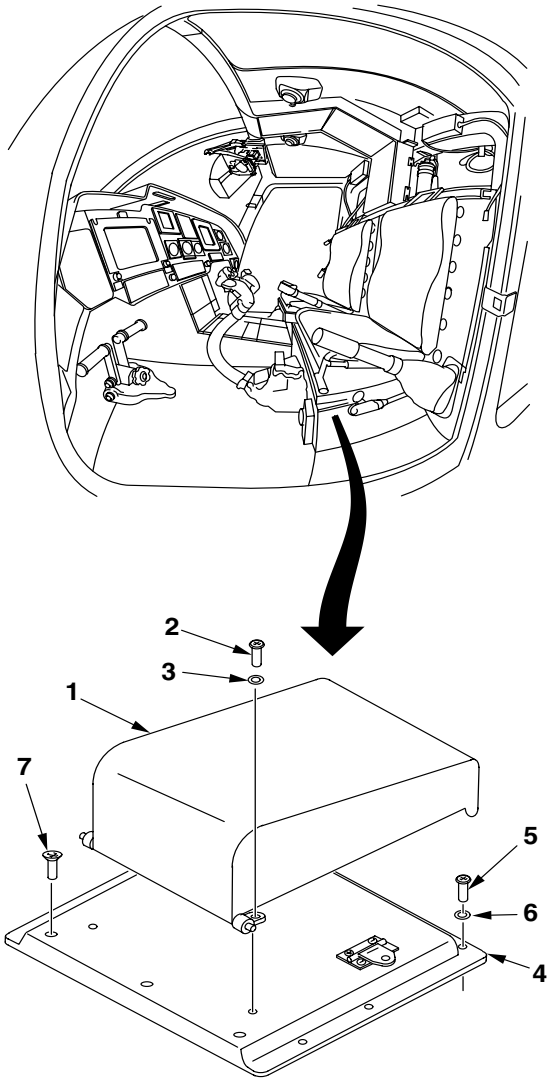
4. Install seat (1) by installing two screws (2) with washers (3).

INSPECT

FOLLOW-ON MAINTENANCE

Install back cushion (Task 2-2-20).

Install seat restraint (Task 2-2-16).



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END OF TASK

2-2-34. SEAT PAN ASSEMBLY (TYPICAL) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Hand Blind Riveter (B117)
Torque Wrench (B238)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Armor Seat Panel Removed (Task 2-2-42)
Rebound Assembly Removed (Task 2-2-36)

GO TO NEXT PAGE

2-2-34. SEAT PAN ASSEMBLY (TYPICAL) — REMOVAL/INSTALLATION (CONT)

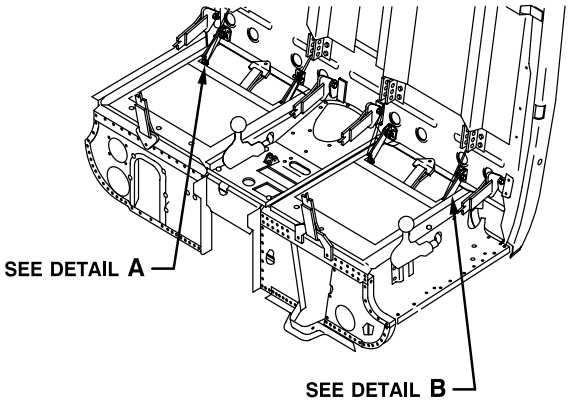
NOTE

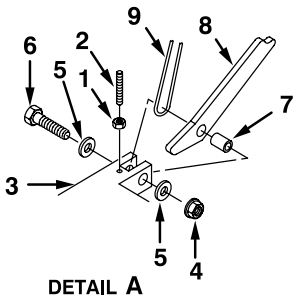
This task is typical for removal and installation of pilot or CPG seat pan assembly.

REMOVE

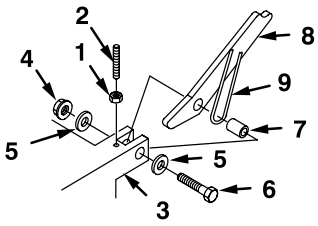
1. Remove two jamnuts (1) and setscrews (2) from seat pan assembly (3).

2. Remove two nuts (4), four washers (5), two bolts (6), and two spacers (7) connecting two bracket assemblies (8) and attenuating wires (9) to seat pan assembly (3).





DETAIL A



DETAIL B

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2-2-34. SEAT PAN ASSEMBLY (TYPICAL) — REMOVAL/INSTALLATION (CONT)

Drilling Operations

NOTE

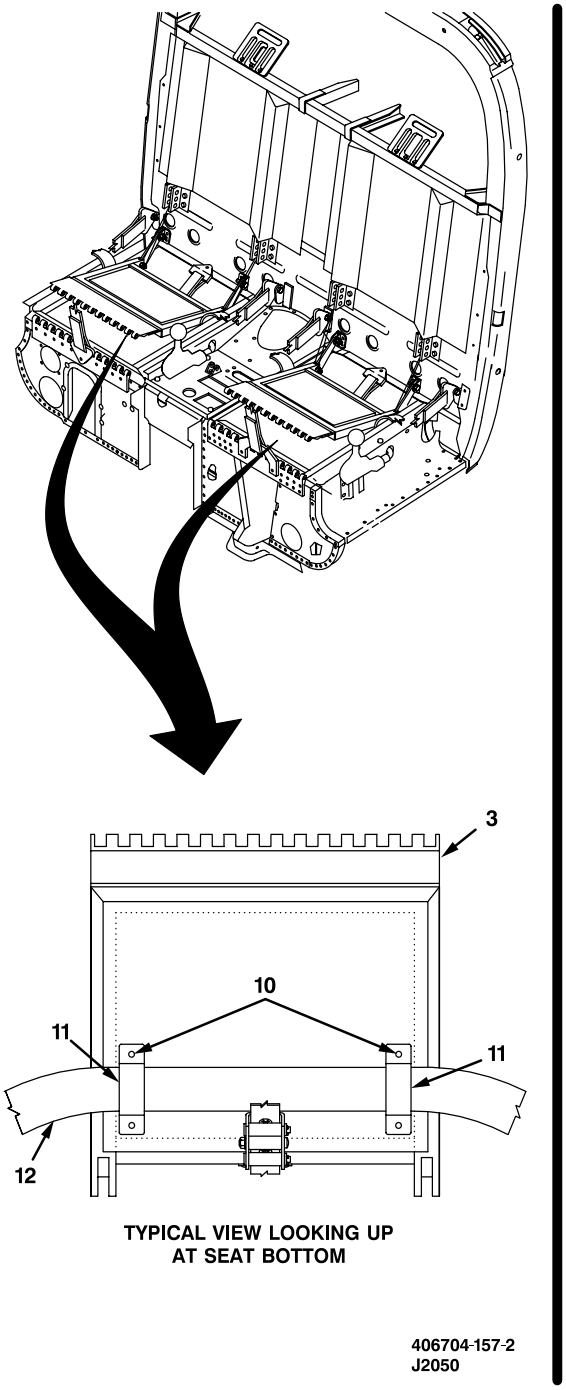
Two rivets (10) shall be removed only when removing seat pan assembly. Rivets do not have to be removed for other types of underseat maintenance.

3. Using a No. 30 drill bit, remove two rivets (10) attaching brackets (11) and center lap belt (12) on bottom of seat pan assembly (3).

4. Rotate brackets (11) one-half turn releasing center lap belt (12).

5. Clean and deburr holes.

6. Remove seat pan assembly (3).



TYPICAL VIEW LOOKING UP AT SEAT BOTTOM

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J2050

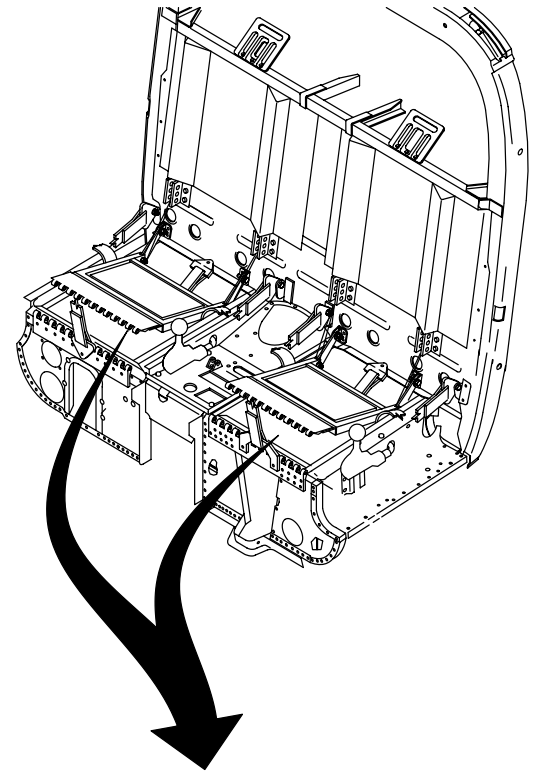
GO TO NEXT PAGE

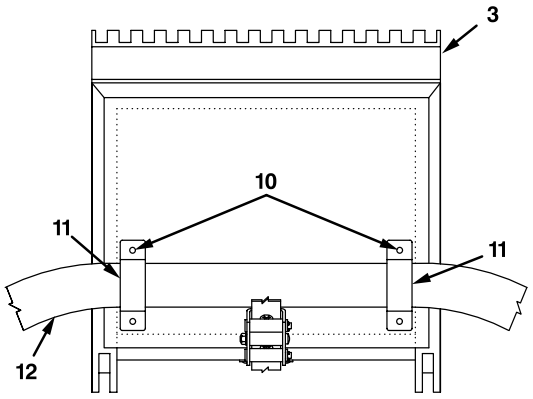
2-2-34. SEAT PAN ASSEMBLY (TYPICAL) — REMOVAL/INSTALLATION (CONT)

INSTALL

7. Position center lap belt (12) under brackets (11) on bottom of seat pan assembly (3).

8. Using hand blind riveter (B117), install two rivets (10) through seat pan assembly (3) and brackets (11).





TYPICAL VIEW LOOKING UP AT SEAT BOTTOM

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GO TO NEXT PAGE

2-2-34. SEAT PAN ASSEMBLY (TYPICAL) — REMOVAL/INSTALLATION (CONT)

WARNING

Attenuating wires shall be installed outboard of bracket. Improper installation can result in failure of energy attenuating seats causing serious injury.

CAUTION

Care shall be exercised to prevent damaging or bending attenuating wires.

9. Install two spacers (7), two bolts (6), four washers (5), and two nuts (4) connecting two bracket assemblies (8) and attenuating wires (9) to seat pan assembly (3). Torque nuts (4) **75 TO 95 INCH-POUNDS**.

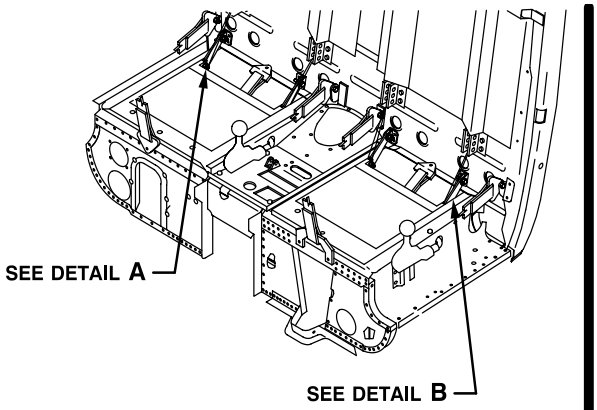
10. Loosely install two setscrews (2) and jamnuts (1) in seat pan assembly (3).

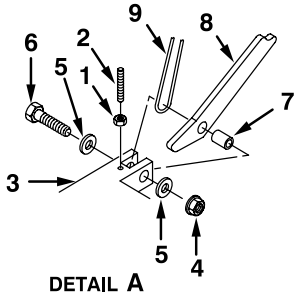
INSPECT

FOLLOW-ON MAINTENANCE

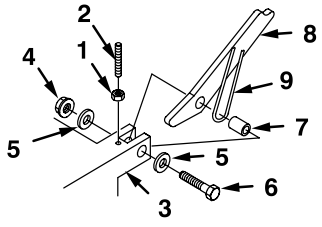
Install armor seat panel (Task 2-2-42).

Install rebound assembly (Task 2-2-36).





DETAIL A



DETAIL B

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END OF TASK

2-2-35. SEAT PAN ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B235)

Material:
Adhesive (D8)
Drycleaning Solvent (D199)
Sandpaper (D175)
Wiping Rags (D164)
Rubber Gloves (D111)
Low-Lint Cloth (D67)
Chemical Conversion Coating (D57)
Zinc Chromate Primer (D161)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23

GO TO NEXT PAGE

2-2-35. SEAT PAN ASSEMBLY CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Clean seat pan assembly (1) with wiping rags (D164) dampened with drycleaning solvent (D199).

INSPECT

2. Inspect seat pan assembly (1) for proper installation of hinge pin (2).

3. Inspect seat pan assembly (1) for security of armor seat panel (3) and for worn or loose Velcro fasteners.

4. Inspect adjustment of holddown brackets (4) at rear of seat pan assembly (1) for play in attenuating wires (5).

5. Inspect seat pan assembly (1) frame for cracks, scratches or corrosion. Cracks regardless of size or location are cause for replacement of seat pan assembly.

REPAIR

6. If play exists in attenuating wire (5) adjust as follows:

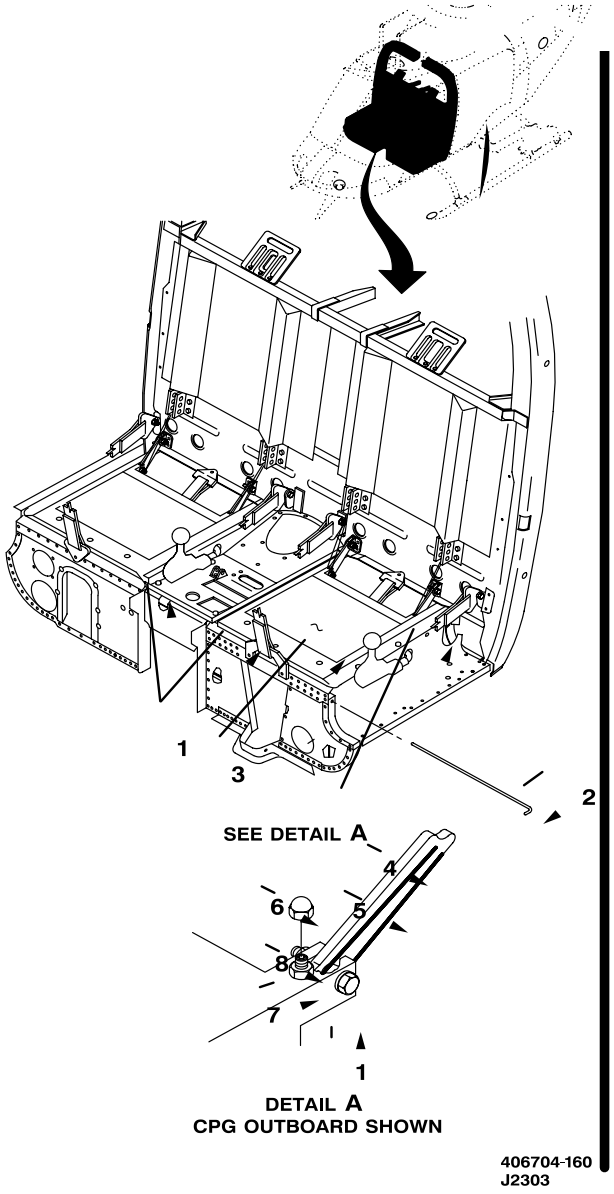
a. Remove capnut (6).

b. Loosen jamnut (7).

c. Tighten setscrew (8) to eliminate play in attenuating wire (5).

d. Tighten jamnut (7).

e. Install capnut (6). Torque capnut **12 TO 15 INCH-POUNDS**.



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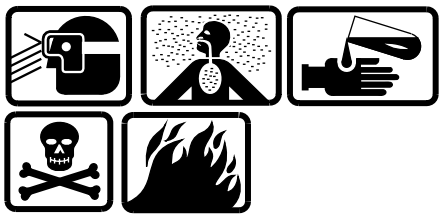
2-2-35. SEAT PAN ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

Sanding Operations

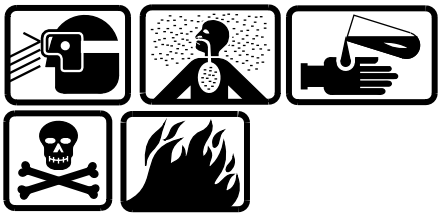
7. Surface scratches or corrosion up to a depth of **0.012 inch** and contained within an area of **1 inch** by **2 inches** may be worked out using 400 grit sandpaper (D175).

8. Clean reworked area with water and low-lint cloth (D67).



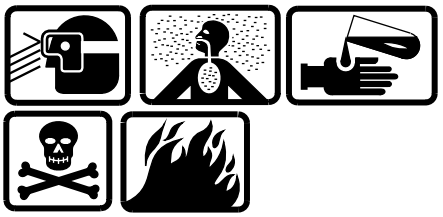
Chemical Conversion Materials

9. Apply chemical conversion coating (D57) to reworked area. Allow chemical conversion coating to remain in contact with bare aluminum until the metal takes on a golden-brown color.



Zinc Chromate Primer

10. Apply protective coating of zinc chromate primer (D161) to reworked area.



Urethane Adhesive

11. Replace Velcro fasteners using adhesive (D8).

END OF TASK

2-2-36. REBOUND ASSEMBLY — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B235)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Crew Door Removed (Task 2-2-10)
Closeout Removed (Task 2-2-31)

GO TO NEXT PAGE

2-2-36. REBOUND ASSEMBLY — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove screw (1) and washer (2) from upper end of rebound assembly (3).

2. Remove two capnuts (4).

3. Loosen two jamnuts (5) and setscrews (6).

4. Remove hinge pin (7) from seat assembly (8).

CAUTION

Care shall be exercised to prevent damaging or bending attenuating wires.

5. Press lever on slider assembly (9) and pull rebound assembly (3) downward.

6. Raise seat assembly (8) from the front high enough to gain access to rebound assembly (3).

CAUTION

Step 7 applies to CPG side only.

7. Tag and disconnect connectors (10) to access lower end of rebound assembly (3).

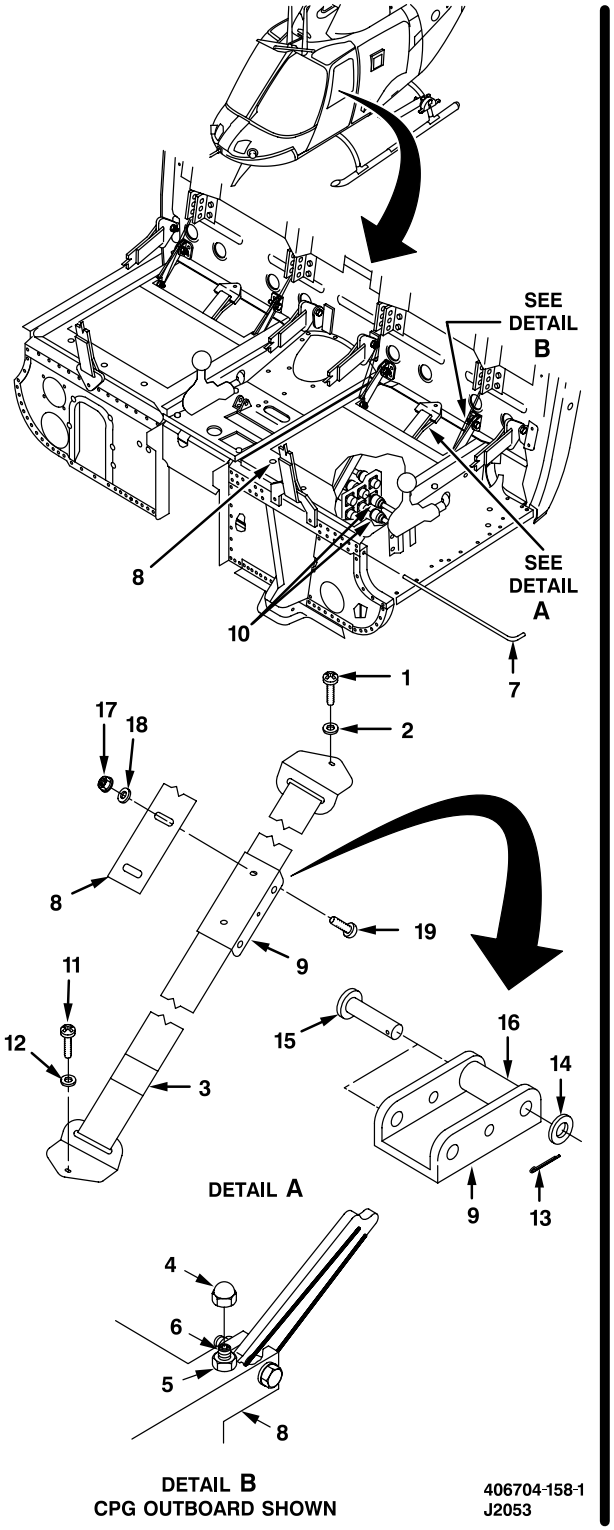
8. Remove screw (11) and washer (12) from lower end of rebound assembly (3).

9. Remove two cotter pins (13), washers (14), pins (15), and spacers (16) from slider assembly (9).

10. Discard cotter pins.

11. Remove two nuts (17), washers (18), and screws (19) connecting slider assembly (9) to seat assembly (8).

12. Remove rebound assembly (3).



GO TO NEXT PAGE

2-2-36. REBOUND ASSEMBLY — REMOVAL/INSTALLATION (CONT)

INSTALL

WARNING

Rebound assembly shall be installed so slider will move freely forward toward floor. Improper installation may result in failure of energy attenuating seat causing serious injury.

CAUTION

Pilot side rebound assembly is shorter and has a different part number than CPG side. Care shall be taken to ensure correct installation.

13. Align slider assembly (9) with top and bottom mounts.

14. Install slider assembly (9) on seat assembly (8) with two screws (19), washers (18), and nuts (17).

15. Install two spacers (16), pins (15), washers (14), and cotter pins (13) on slider assembly (9).

16. Install lower end of rebound assembly (3) to aircraft floor with washer (12) and screw (11).

CAUTION

Step 17 applies to CPG side only.

17. Connect connectors (10) and remove tags.

18. Lower seat assembly (8) and install hinge pin (7).

19. Tighten two setscrews (6) until attenuating wires (20) are tight.

20. Tighten two jamnuts (5).

21. Install two capnuts (4). Torque capnuts **12 TO 15 INCH-POUNDS**.

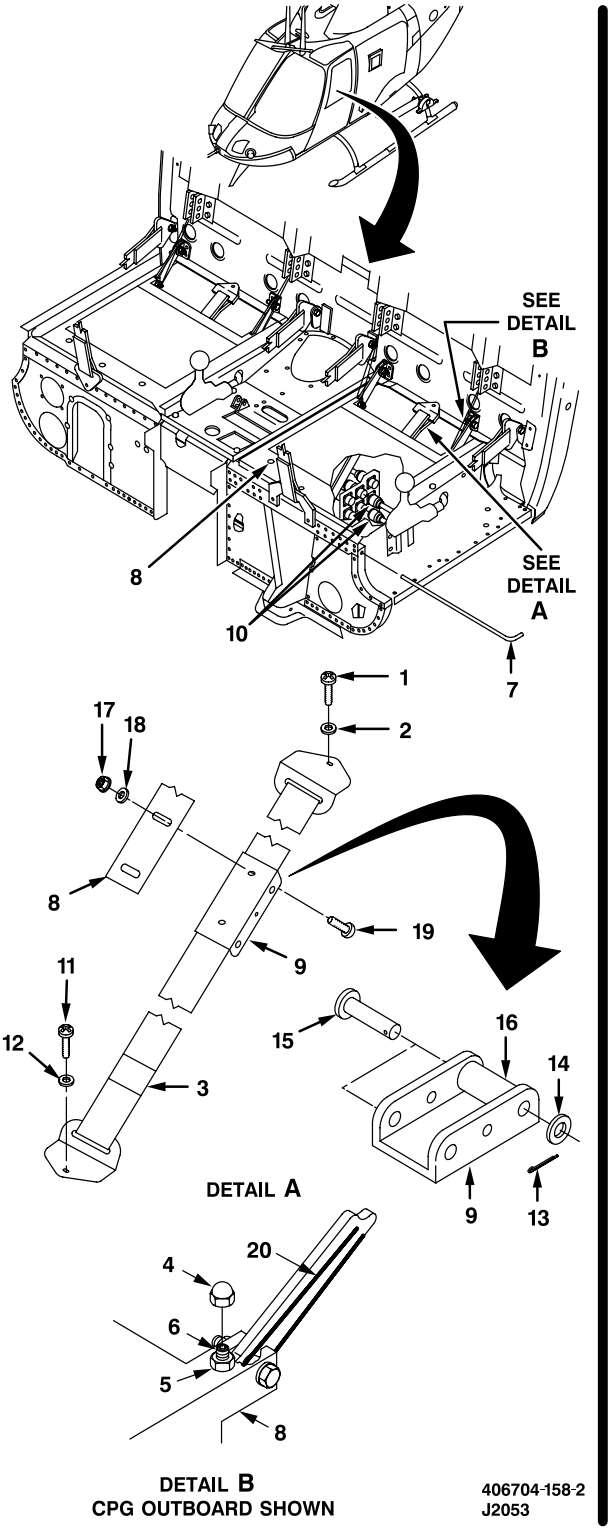
22. Install upper end of rebound assembly (3) with washer (2) and screw (1).

INSPECT

FOLLOW-ON MAINTENANCE

Install closeout (Task 2-2-31).

Install crew door (Task 2-2-10).



END OF TASK

2-2-37. REBOUND ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Soap (D192)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

CLEAN

Cleaning Compound

1. Clean rebound assembly with wiping rags (D164) and mild soap (D192) and warm water.

INSPECT

2. Inspect rebound assembly for cuts or tears in strap and for security of stitching in strap ends. Any crosswise cut or tear in strap that is longer than **0.25 inch** or any lengthwise cut or tear in strap that is longer than **2 inches** is cause for rejection.

3. Inspect rebound assembly for excessive wear or chafing of strap at end fittings and for security of stitching. If excessive wear or chafing exists replace rebound assembly.

4. Inspect rebound assembly for cracks and corrosion. Any cracks or corrosion are cause for replacement.

5. Inspect slider assembly for security of attachment to seat bracket.

6. Inspect for security of attachment of end fittings to airframe.

REPAIR

7. Tighten any loose hardware securing rebound assembly to seat bracket or airframe.

END OF TASK

2-2-38. ENERGY ATTENUATING WIRE — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B235)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Crew Door Removed (Task 2-2-10)
Backrest Removed (Task 2-2-29)
Closeout Removed (Task 2-2-31)

GO TO NEXT PAGE

2-2-38. ENERGY ATTENUATING WIRE — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove screw (1) and washer (2) from upper end of rebound assembly (3).

2. Remove capnuts (4).

3. Loosen two jamnuts (5) and setscrews (6) to allow brackets (7) to move without binding.

4. Remove hinge pin (8) from seat assembly (9).

NOTE

Center roller may have to be loosened for removal and installation of top and bottom rollers.

5. Remove two nuts (10), four washers (11), two washers (12), two bolts (13), and top and bottom rollers (14) from roller housing (15).

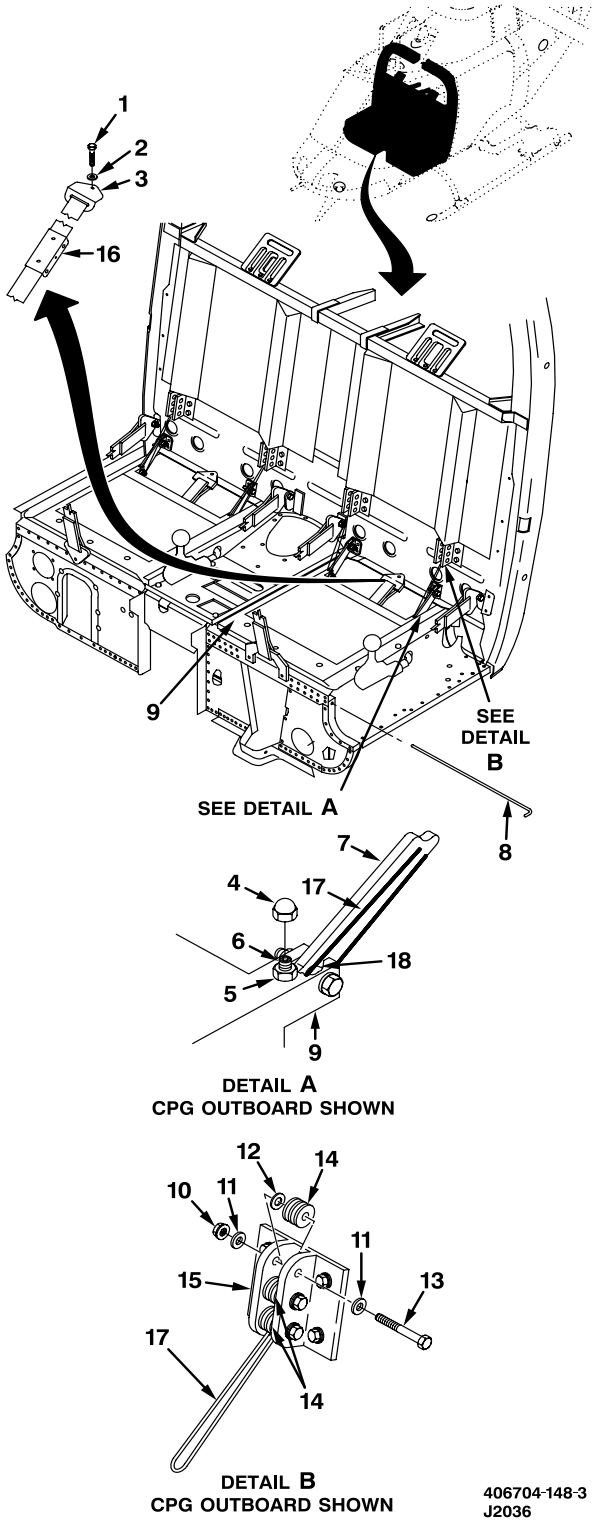
6. Press lever on slider assembly (16) and pull rebound assembly (3) downward.

7. Raise seat assembly (9) from the front to access attenuating wire (17).

CAUTION

Care shall be exercised to prevent damaging or bending attenuating wire.

8. Remove attenuating wire (17) by pulling wire from bottom underneath seat assembly (9) around spacer (18).



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2-2-38. ENERGY ATTENUATING WIRE — REMOVAL/INSTALLATION (CONT)

INSTALL

WARNING

Attenuating wires shall be installed outboard of bracket. Improper installation may result in failure of energy attenuating seats causing serious injury.

CAUTION

Care shall be exercised to prevent damaging or bending attenuating wire.

NOTE

Pilot side attenuating wires are shorter and have a different part number from CPG side attenuating wires; however, installation procedures are identical.

9. Thread attenuating wire (17) up under seat assembly (9) around spacer (18).

WARNING

Washers (12) shall be installed inboard of rollers. Improper installation may result in failure of energy attenuating seats causing serious injury.

NOTE

Center roller may have to be loosened for removal and installation of top and bottom rollers.

10. Hold attenuating wire (17) in position on center roller (14) and install top and bottom rollers (14) in roller housing (15) with two bolts (13), two washers (12) inboard of rollers (14), four washers (11), and two nuts (10).

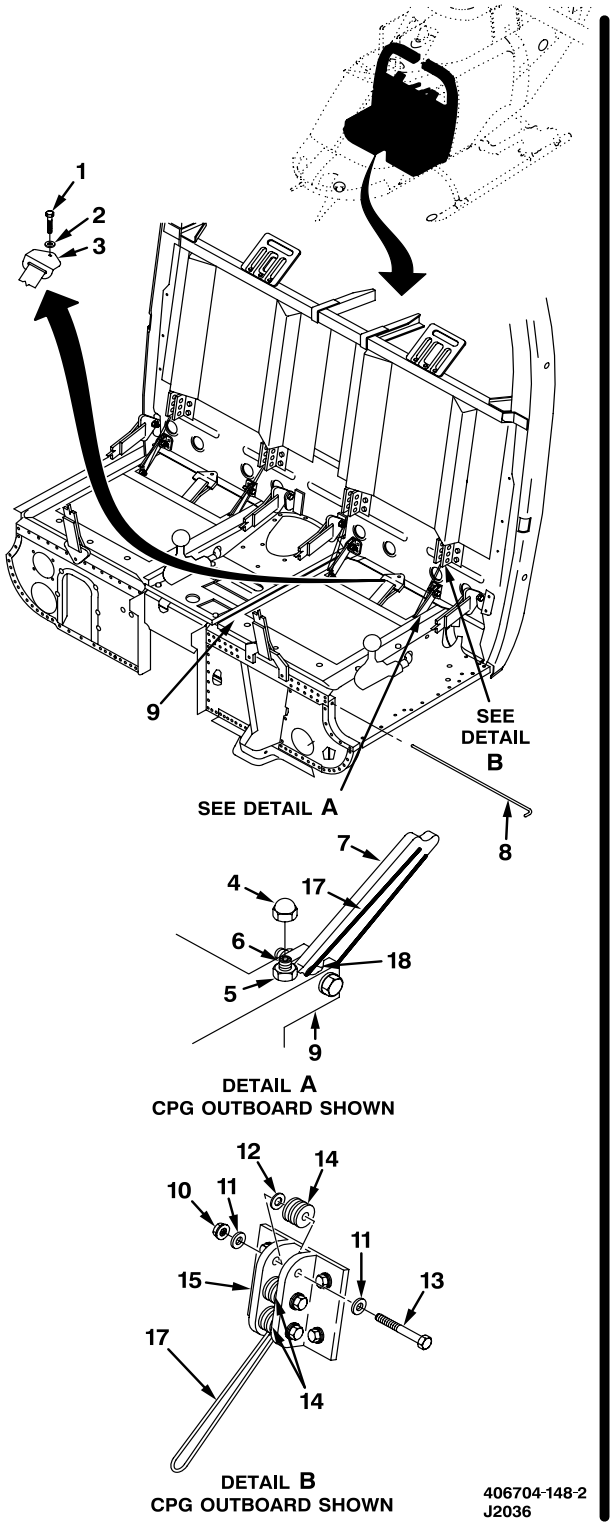
11. Install hinge pin (8) in seat assembly (9).

12. Position brackets (7) onto rear attach points and tighten two setscrews (6) until attenuating wires (17) are tight.

13. Tighten two jamnuts (5).

14. Install two capnuts (4). Torque capnuts **12 TO 15 INCH-POUNDS**.

15. Install upper end of rebound assembly (3) with washer (2) and screw (1).



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2-2-38. ENERGY ATTENUATING WIRE — REMOVAL/INSTALLATION (CONT)

INSPECT

FOLLOW-ON MAINTENANCE

Install backrest (Task 2-2-29).

Install closeout (Task 2-2-31).

Install crew door (Task 2-2-10).

END OF TASK

2-2-39. ENERGY ATTENUATING WIRE — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)
Sandpaper (D175)
Low-Lint Cloth (D67)
Chemical Conversion Coating (D57)
Zinc Chromate Primer (D161)

Personnel Required:
67S Scout Helicopter Repairer

CLEAN

Drycleaning Solvent

1. Clean energy attenuating wire with wiping rags (D164) dampened with drycleaning solvent (D199).

INSPECT

2. Visually inspect energy attenuating wire for nicks, scratches, corrosion, or other damage. Any nicks, scratches, corrosion, or other visible damage are cause for replacement.

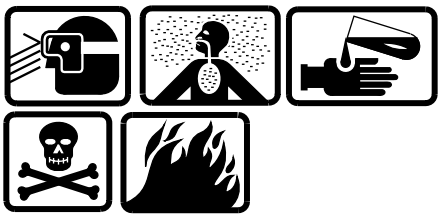
3. Visually inspect roller housing assembly for corrosion. Any corrosion on rollers is cause for replacement.

REPAIR

Sanding Operations

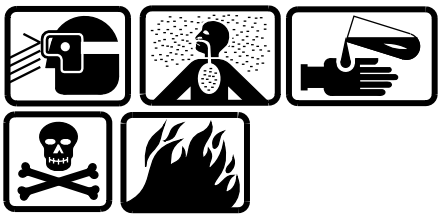
4. Scratches or corrosion on the roller housing up to a depth of **0.012 inch** and contained within an area of **1 inch** by **2 inches** may be worked out using 400 grit sandpaper (D175).

5. Clean reworked area with water and low-lint cloth (D67).



Chemical Conversion Materials

6. Apply chemical conversion coating (D57) to reworked area. Allow chemical conversion coating to remain in contact with bare aluminum until the metal takes on a golden-brown color.



Zinc Chromate Primer

7. Apply protective coating of zinc chromate primer (D161) to reworked area.

END OF TASK

2-2-40. CREW ARMOR PANELS (TYPICAL) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B236)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

Equipment Condition:
Back Cushion Removed (Task 2-2-20)
Crew Seat and Armor Seat Panel Removed (Task 2-2-33)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-40. CREW ARMOR PANELS (TYPICAL) — REMOVAL/INSTALLATION (CONT)

REMOVE

WARNING

To prevent compromising helicopter flight characteristics and consequent possible injury to personnel, Weight and Balance Records shall be updated to show true helicopter configuration when changes are made to the armor installation. In some cases, with armor removed, ballast will have to be added to maintain CG within limits to meet mission requirements.

NOTE

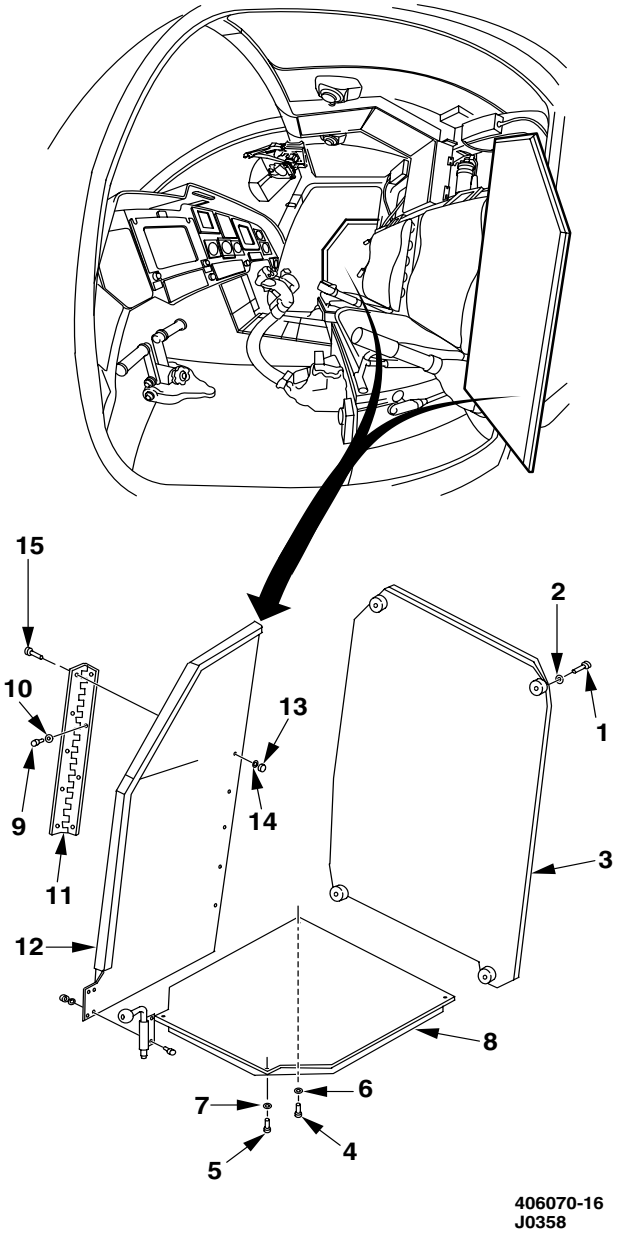
- Crew left and right armor side panels may be removed in non-combat areas at the discretion of the unit commander. Applicable weight and balance changes shall be made in the helicopter Weight and Balance Records. Removed armor will be added to helicopter inventory record.
- The loose spacers from armor seat back panel shall be retained and rebonded to the panel.

1. Remove four bolts (1) and washers (2) from left or right armor back panel (3). Remove armor back panel (3).

2. Remove four screws (4 and 5), washers (6 and 7), and armor panel (8) from left or right seat panel previously removed (Task 2-2-33). Remove armor panel (8).

3. Remove four screws (9) and washers (10) from inboard or outboard hinge (11). Remove right armor side panel (12) or left armor side panel (not shown).

4. Remove five nuts (13), washers (14), and screws (15) and outboard hinge (11) from right armor side panel (12) or left armor side panel.



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2-2-40. CREW ARMOR PANELS (TYPICAL) — REMOVAL/INSTALLATION (CONT)

5. Remove two nuts (16), washers (17), and screws (18) from support of latch (19) and right side armor panel (12). Remove right latch (19).

6. Remove two nuts (20), washers (21), and screws (22) from upper support of left side latch (23).

7. Remove two nuts (20), washers (21), and screws (22) from lower support of left side latch (23). Lift latch from left armor side panel (not shown).

INSTALL

8. Place latch (23) to left armor side panel (not shown) and install two screws (22), washers (21), and nuts (20) in upper support of latch (23).

9. Install two screws (22), washers (21), and nuts (20) in lower support of latch (23).

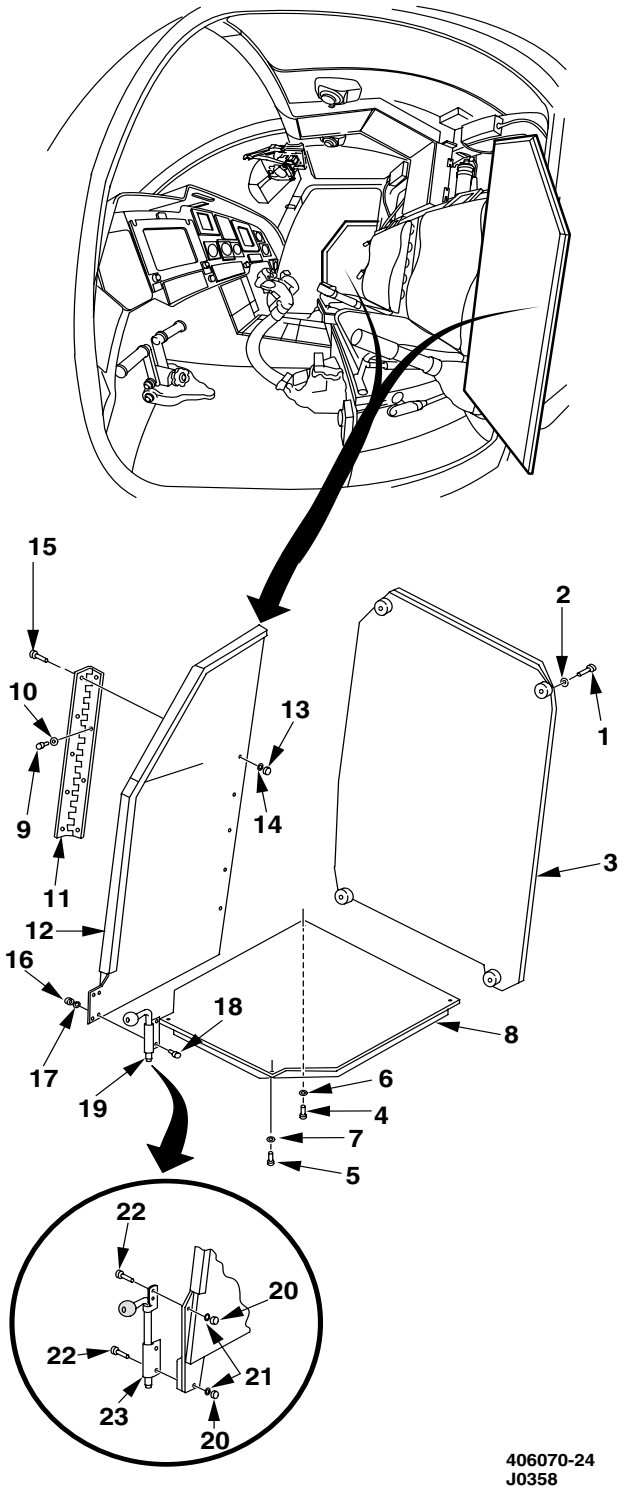
10. Place hinge (11) on left or right side armor side panel (12) and install five screws (15), washers (14), and nuts (13).

11. Install hinge (11) of side armor panel (12) on airframe adjacent to crew seat back with four screws (9) and washers (10).

12. Place armor panel (8) on seat panel and install four screws (4 and 5) and washers (6 and 7).

13. Install latch (19) on right armor side panel (12) with two screws (18), washers (17), and nuts (16).

14. Install left or right armor back panel (3) on aft side of crew seat airframe with four bolts (1) and washers (2). Torque bolts (1) **20 TO 25 INCH-POUNDS.**



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INSPECT

FOLLOW-ON MAINTENANCE

Install crew seat and armor seat panel assembly (Task 2-2-33).

- Install crew back cushion (Task 2-2-20).

END OF TASK

2-2-41. CREW ARMOR PANELS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

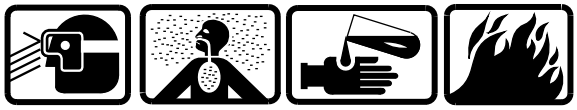
Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Rubber Gloves (D111)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

CLEAN



Drycleaning Solvent

1. Clean crew armor panels, hinges, and latches with drycleaning solvent (D199).

2. Wipe dry with dry, clean, wiping rags (D164).

INSPECT

WARNING

To prevent injury to personnel, armor panel latch shall not be allowed to become excessively worn or loose. It can allow interference with collective control.

3. Inspect all panels for security of attachment. Ensure latch pins extend into fitting a minimum **0.250 inch** below outboard edge of hole.

4. Visually inspect each panel for surface damage:

a. Evidence of a hit by any ballistic projectile requires replacement of panel.

b. Visible cracks longer than **0.250 inch** are not acceptable.

c. Small chips, not more than **0.250 inch** diameter, at edges of ceramic faces of panel are acceptable and do not require repair.

5. Visually inspect both left and right hinge and latch assemblies for damage. Replace if damaged.

6. Inspect latch attach point to ensure it is not broken.

REPAIR

NOTE

Repair is limited to replacement of any panel not meeting inspection criteria outlined in previous paragraphs.

END OF TASK

2-2-42. ARMOR PANELS (TYPICAL) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B237)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Access Door Removed (Task 2-2-6)
Crew Door Removed (Task 2-2-10)
Seatback Cushion Removed (Task 2-2-22)
Seat Cushion Removed (Task 2-2-27)

GO TO NEXT PAGE

2-2-42. ARMOR PANELS (TYPICAL) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove four bolts (1) and washers (2) from left or right armor back panel (3). Remove armor back panel (3).

NOTE

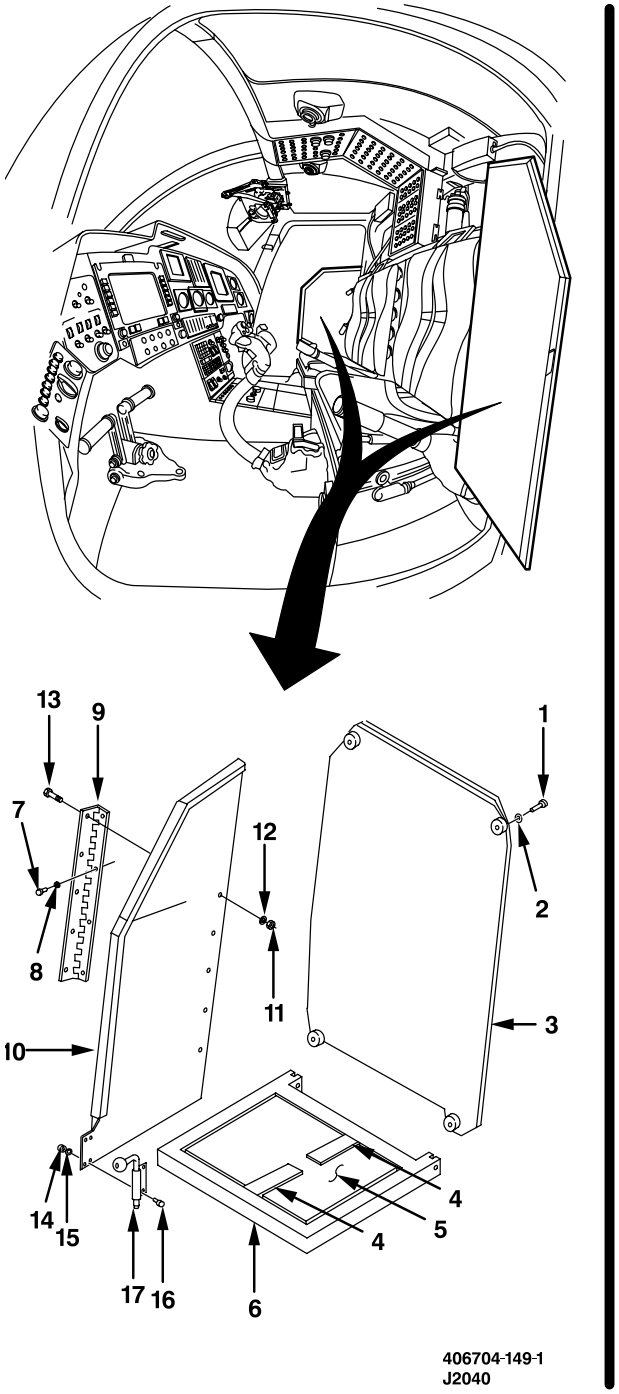
Pilot armor seat panel is larger than CPG armor seat panel. The difference in size will not affect the removal or installation.

2. Using strap (4), remove armor seat panel (5) from seat assembly (6).

3. Remove four screws (7) and washers (8) from inboard or outboard hinge (9). Remove right armor side panel (10) or left armor side panel (not shown).

4. Remove five nuts (11), washers (12), and screws (13) and outboard hinge (9) from right armor side panel (10) or left armor side panel (not shown).

5. Remove two nuts (14), washers (15), and screws (16) from support of right side latch (17) and right armor side panel (10). Remove latch (17).



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2-2-42. ARMOR PANELS (TYPICAL) — REMOVAL/INSTALLATION (CONT)

6. Remove two nuts (18), washers (19), and screws (20) from upper support of left side latch (21).

7. Remove two nuts (18), washers (19), and screws (20) from lower support of left side latch (21). Lift latch from left armor side panel (not shown).

INSTALL

8. Position left side latch (21) onto left armor side panel (not shown) and install two screws (20), washers (19), and nuts (18) in upper support of latch (21).

9. Install two screws (20), washers (19), and nuts (18) in lower support of latch (21).

10. Position hinge (9) onto left or right armor side panel (10) and install five screws (13), washers (12), and nuts (11).

11. Install hinge (9) of armor side panel (10) on airframe adjacent to crew seat back with four screws (7) and washers (8).

12. Place strap (4) under armor seat panel (5) with both ends exposed and install armor seat panel (5) on seat assembly (6) by pressing into place.

13. Install latch (17) on right armor side panel (10) with two screws (16), washers (15), and nuts (14).

14. Install left or right armor back panel (3) on aft side of crew seat airframe with four bolts (1) and washers (2). Torque bolts (1) **30 TO 40 INCH-POUNDS.**

INSPECT

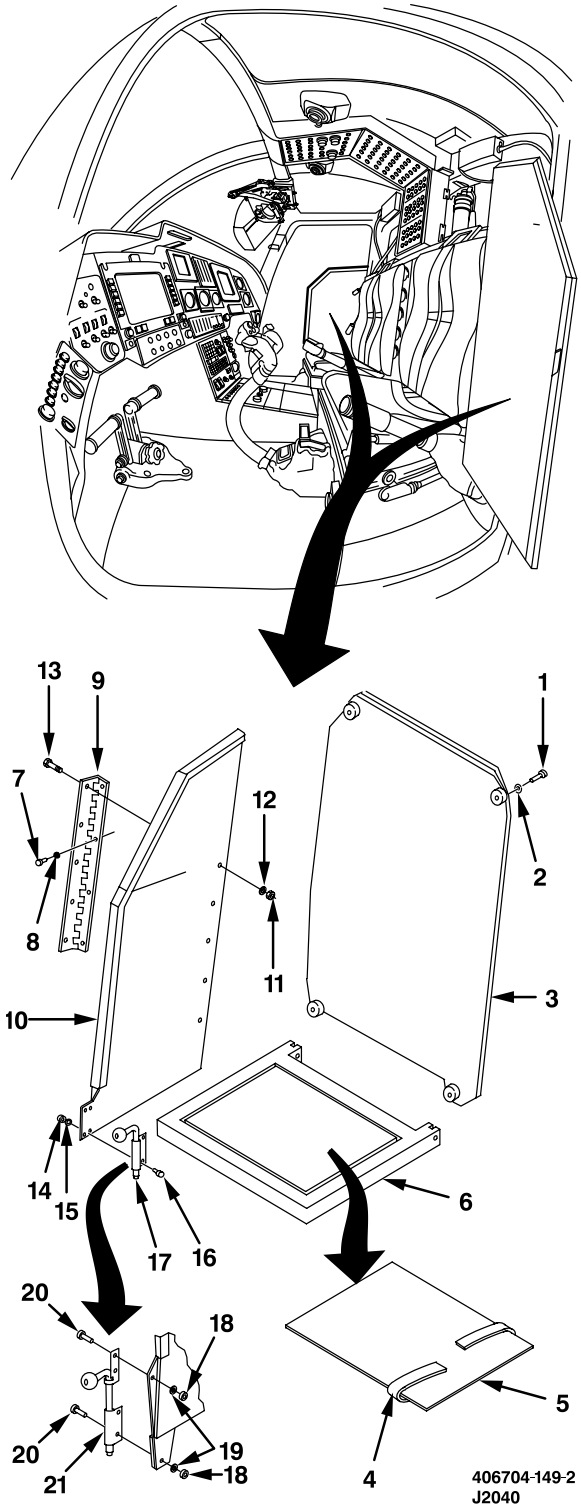
FOLLOW-ON MAINTENANCE

Install seatback cushion (Task 2-2-22).

Install seat cushion (Task 2-2-27).

Install access door (Task 2-2-6).

Install crew door (Task 2-2-10).



END OF TASK

2-2-43. ARMOR PANELS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Adhesive (D8)
Drycleaning Solvent (D199)
Rubber Gloves (D111)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

CLEAN

Drycleaning Solvent

1. Clean armor panels, hinges, and latches with drycleaning solvent (D199).

2. Wipe dry with dry, clean wiping rags (D164).

INSPECT

WARNING

To prevent injury to personnel, armor panel latch shall not be allowed to become excessively worn or loose. It can allow interference with collective control.

3. Inspect all panels for security of attachment. Ensure latch pins extend into fitting a minimum **0.250 inch** below outboard edge of hole.

4. Visually inspect each panel for surface damage:

a. Evidence of a hit by any ballistic projectile requires replacement of panel.

b. Visible cracks longer than **0.250 inch** are not acceptable.

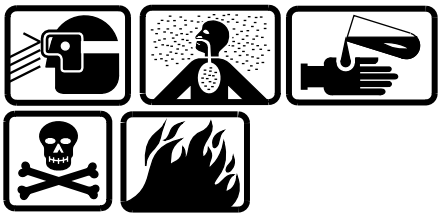
c. Small chips, not more than **0.250 inch** diameter, at edges of ceramic faces of panel are acceptable and do not require repair.

5. Visually inspect both left and right hinge and latch assemblies for damage. Replace if damaged.

6. Inspect latch attach point to ensure it is not broken.

7. Inspect armor seat panel for worn or loose Velcro fasteners.

REPAIR



Urethane Adhesive

8. Replace Velcro fasteners using adhesive (D8).

9. Replace any armor panel that does not meet inspection requirements above.

END OF TASK

2-2-44. INLET SHIELD INSPECTION PANEL — REMOVAL/INSTALLATION

This task covers: Removal/Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (B162)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-44. INLET SHIELD INSPECTION PANEL — REMOVAL/INSTALLATION (CONT)

NOTE

- Inlet shield is mounted on left side and right side of forward fairing.
- Removal/installation procedures are the same on both sides.

REMOVE

1. Disengage four fasteners (1) securing aft closeout panel (2) to engine cowl and inspection panel (4).

2. Remove aft closeout panel (2).

3. Disengage four fasteners (3) on top edge of inspection panel (4).

4. Disengage four fasteners (5) on bottom edge of inspection panel (4).

5. Disengage three fasteners (6) at forward edge of inspection panel (4).

6. Remove inspection panel (4).

INSTALL

CAUTION

To prevent damage to engine, before installing inspection panel, particle separator swirl vanes shall be checked for presence of foreign objects.

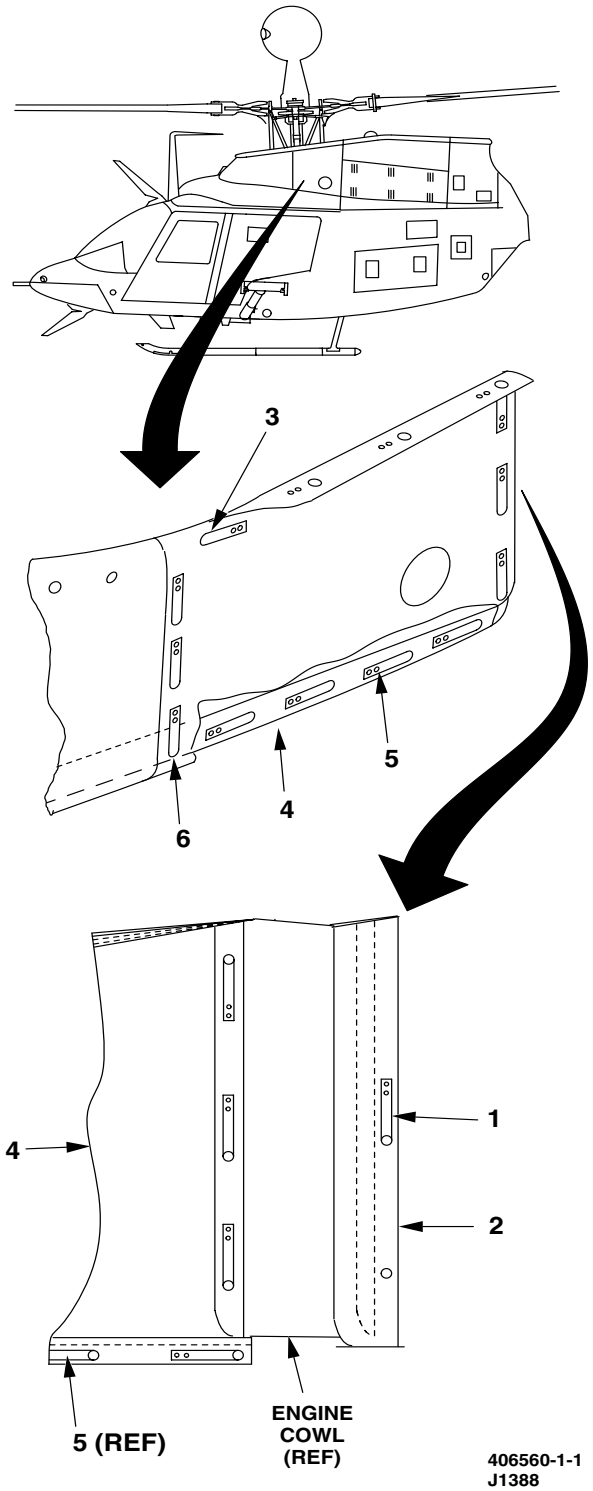
7. Position inspection panel (4) onto engine cowl and engage three forward fasteners (6).

8. Engage four fasteners (3) on top edge of inspection panel (4).

9. Engage four fasteners (5) on bottom edge of inspection panel (4).

10. Place closeout panel (2) on engine cowl and inspection panel (4) and engage four fasteners (1).

INSPECT



END OF TASK

2-2-45. INLET SHIELD ASSEMBLY — REMOVAL/INSTALLATION

This task covers: Removal/Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (B162)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Inlet Shield Inspection Panel Removed (Task 2-2-44)

GO TO NEXT PAGE

2-2-45. INLET SHIELD ASSEMBLY — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove 10 screws (1) from lower left side of inlet shield (2).

2. Remove 11 screws (3) from upper left side of inlet shield (2).

3. Remove left inlet shield (2) from forward fairing.

4. Remove nine screws (4) from lower right side of inlet shield (5).

5. Remove 10 screws (6) from upper right side of inlet shield (5).

6. Remove right inlet shield (5) from forward fairing.

INSTALL

CAUTION

To prevent damage to engine, before installing inlet shield assembly, particle separator swirl vanes shall be checked for presence of foreign objects.

7. Position right inlet shield (5) onto forward fairing.

8. Install 10 screws (6) on upper right side of inlet shield (5) .

9. Install nine screws (4) on lower right side of inlet shield (5).

10. Place left inlet shield (2) on forward fairing.

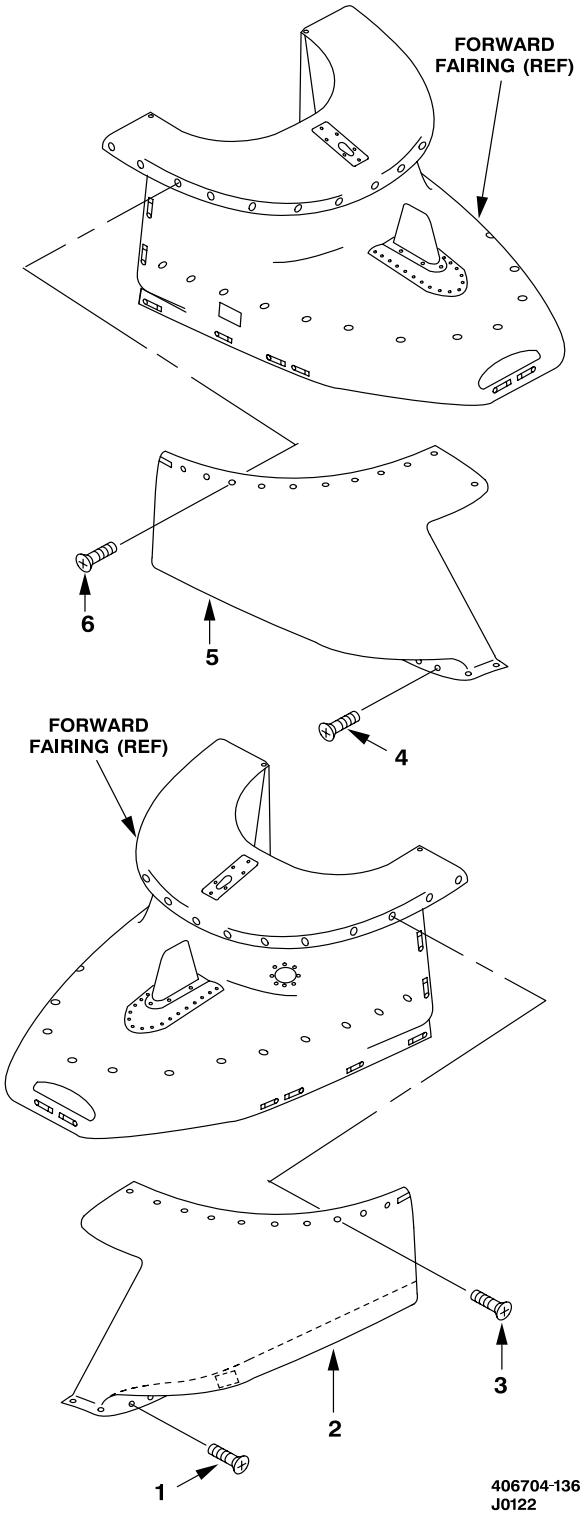
11. Install 11 screws (3) on upper left side of inlet shield (2).

12. Install 10 screws (1) on lower left side of inlet shield (2).

INSPECT

FOLLOW-ON MAINTENANCE

Install inlet shield inspection panel (Task 2-2-44).



END OF TASK

2-2-46. INLET SHIELD ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Acetone (D2)
Epoxy Primer Coating (D98)
Paint (D150)
Wiping Rags (D164)
Polyurethane Conductive Coating (D71)
Rubber Gloves (D111)
Polishing Compound (D154)
Soap (D192)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

CLEAN

Acetone

CAUTION

To prevent crazing, acetone shall not be allowed to contact window.

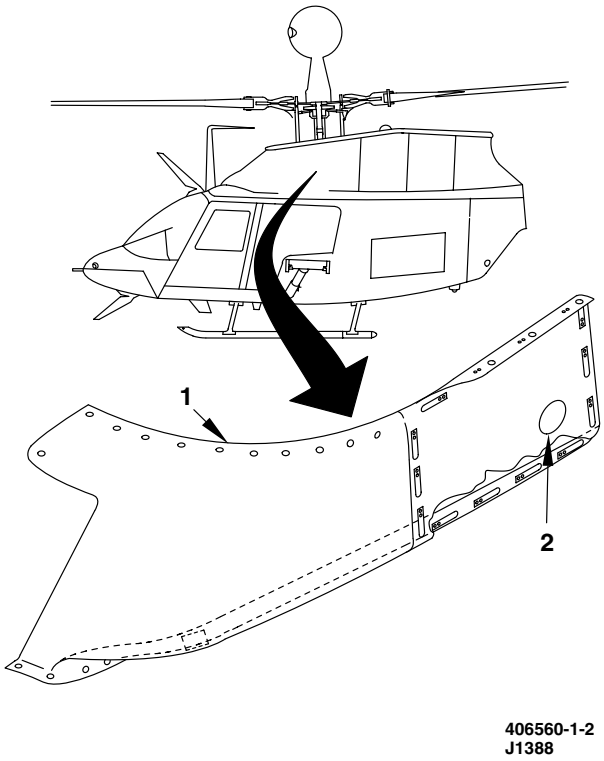
NOTE

Cleaning procedures are identical for both LH and RH inlet shield assemblies; only LH procedures are provided.

1. Using acetone (D2) and wiping rags (D164), clean inlet shield assembly (1).

NOTE

The inlet shield assembly is comprised of three assemblies: inlet, cowl, and closeout. It may be necessary to disassemble inlet shield assembly for cleaning purposes.



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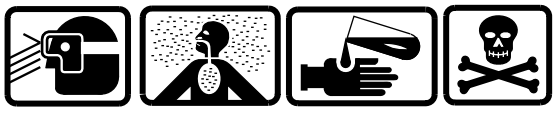
2. Dry inlet shield assembly (1) using wiping rags (D164).



Cleaning Compound

3. Clean inspection window (2) with soap (D192) and water, then rinse with clear water.

4. Allow surface to drip dry.

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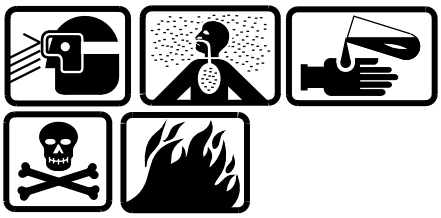


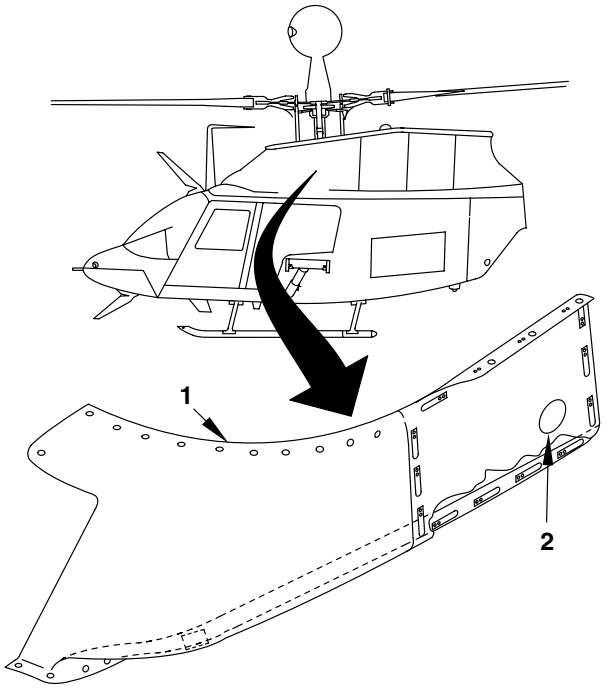
Plastic Polish Compound

5. Remove or reduce minor scratches on inspection window (2) using polishing compound (D154) to affected surfaces.

INSPECT

6. Inspect inlet shield assembly (1) for damage that cannot be repaired without inhibiting normal usage of the shield or that would require replacement of the part as follows.

a. Cracks — Cracks extending within **0.050 inch** of any fastener, edge, or opening must be repaired. Others cracks must be repaired if lengths exceed **0.25 inch**.



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J1388

b. Breakage — Broken parts require repair/ replacement.

c. Punctures — Punctures within **0.50 inch** of any fastener, edge, or opening must be repaired. Other punctures with a diameter greater than **0.25 inch** must be repaired. Punctures within **1.00 inch** of each other are considered to be one puncture.

d. Voids (bond failures) — Voids with an area larger than **0.50 sq. in.** must be repaired. Voids within **3.00 inches** of each other, any fitting, structural member, or any edge must be repaired. Voids within **1.00 inch** of each other are considered one void.

e. Loose, damaged, or missing Dzus fastener stud, grommet and/or ejecting blade must be replaced.

f. Worn, deteriorated, or cracked seal must be replaced.

REPAIR

7. Repair damaged area per TM 1-1500-204-23.

8. Replace loose, damaged, or missing fastener stud, grommet and/or ejecting blade.

FINISH

9. Touch up exterior as follows:

a. Apply one coat of epoxy primer coating (D98) (TM 55-1500-345-23).

b. Apply one coat of copper filled polyurethane conductive coating (D71) to outside of cowling (Task 2-2-64).

c. Apply two coats of polyurethane top coating (D150) (Task 2-2-65).

d. Touch up interior finish. Apply epoxy primer coating (D98) (TM 55-1500-345-23).

INSPECT

END OF TASK

2-2-47. FORWARD FAIRING ASSEMBLY — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (B162)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Inlet Shield Assemblies Removed as Required (Task 2-2-45)

GO TO NEXT PAGE

2-2-47. FORWARD FAIRING ASSEMBLY — REMOVAL/INSTALLATION (CONT)

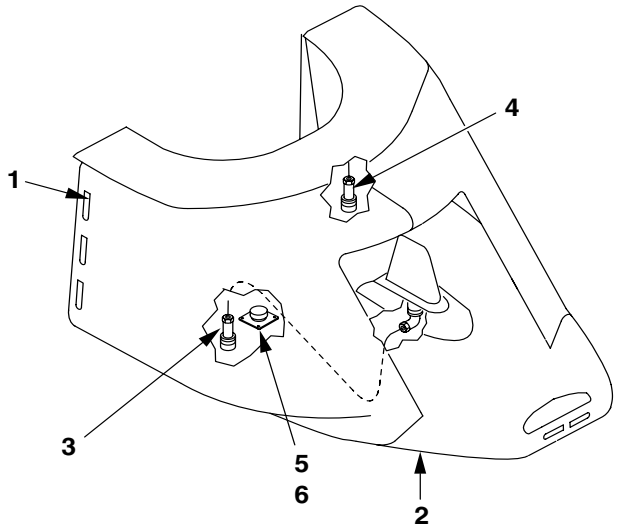
REMOVE

CAUTION

- To prevent damage to FM homing antennas, forward fairing assembly shall not be allowed to contact antennas.
- To prevent damage to helicopter wiring, forward fairing assembly shall be raised carefully and only far enough to access IFF antenna and radar warning antenna connectors at roof disconnects.

NOTE

Procedure for removing forward fairing assembly is same whether inlet shield is removed or not. Forward fairing assembly will be heavier if inlet shield is installed.



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1. Position maintenance stand (B162) next to helicopter.

2. Loosen Dzus fasteners (1) and raise forward fairing assembly (2) only enough to enable access to IFF antenna connector (3) and radar warning antenna connector (4).

3. Disconnect connectors (3 and 4).

4. Lift forward fairing assembly (2) off helicopter.

5. Remove upper IFF antenna roof feedthrough connector cover (5) from stowage connector (6) and install on connector.

GO TO NEXT PAGE

2-2-47. FORWARD FAIRING ASSEMBLY — REMOVAL/INSTALLATION (CONT)

INSTALL

6. Remove upper IFF antenna roof feedthrough connector cover (5) from upper IFF antenna roof feedthrough connector and stow it on stowage connector (6).

CAUTION

To prevent damage to FM homing antennas, forward fairing assembly shall not be allowed to contact antennas.

7. Position forward fairing assembly (2) onto helicopter.

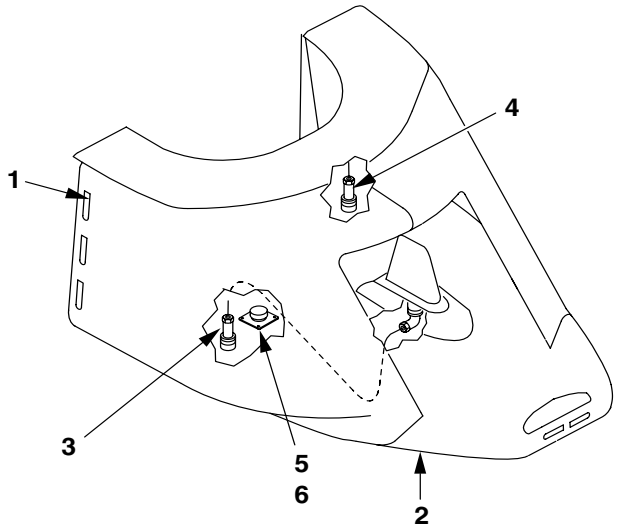
CAUTION

To prevent damage to helicopter wiring, forward fairing assembly shall be raised carefully and only far enough to access IFF antenna and radar warning antenna connectors at roof disconnects.

8. Lift forward fairing assembly (2) only enough to enable access to IFF antenna connector (3) and radar warning antenna connector (4) at roof disconnects.

9. Connect connectors (3 and 4).

10. Connect Dzus fasteners (1).



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INSPECT

FOLLOW-ON MAINTENANCE

Perform IFF operational test (TM 11-1520-248-23).

Perform radar warning operational test (TM 11-1520-248-23).

Install inlet shield assemblies (Task 2-2-45).

Remove maintenance stand.

END OF TASK

2-2-48. FORWARD FAIRING ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Acetone (D2)
Epoxy Primer Coating (D98)
Top Coating (D150)
Masking Tape (D216)
Wiping Rags (D164)
Polyurethane Conductive Coating (D71)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

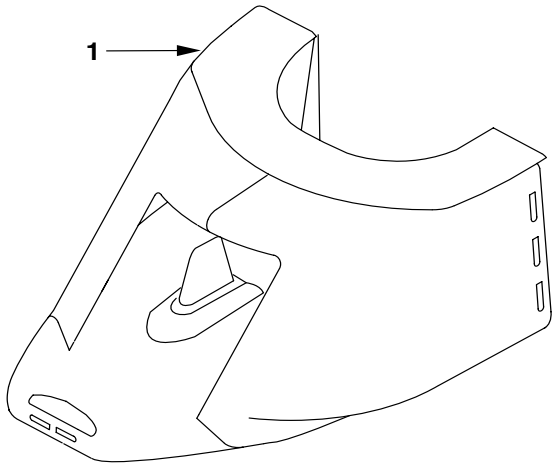
References:
TM 1-1500-204-23
TM 55-1500-345-23

CLEAN

Acetone

1. Use acetone (D2) and wiping rags (D164) to clean forward fairing assembly (1) for inspection.

2. Use wiping rags (D164) to dry forward fairing assembly.



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2-2-48. FORWARD FAIRING ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

INSPECT

NOTE

Damage which cannot be repaired without inhibiting normal usage of fairing would require replacement of part.

3. Inspect forward fairing assembly (1) for following damage:

a. Cracks — Cracks extending within **0.50 inch** of any fastener, edge, or opening must be repaired. Other cracks must be repaired if lengths exceed **0.25 inch**.

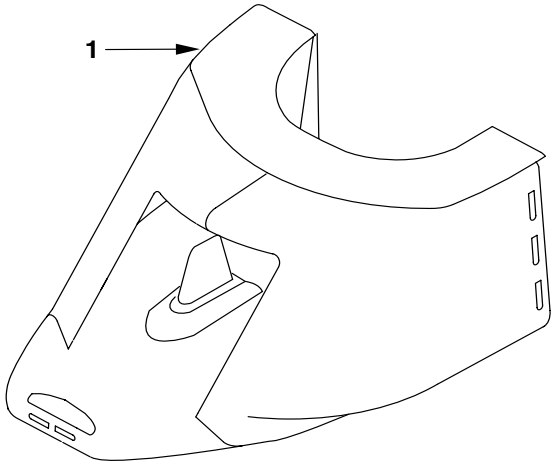
b. Breakage — Broken parts require repair/ replacement.

c. Punctures — Punctures within **0.50 inch** of any fastener, edge, or opening must be repaired. Other punctures with a diameter greater than **0.25 inch** must be repaired. Punctures within **1.00 inch** of each other are considered to be one puncture.

d. Voids (bond failures) — Voids with an area larger than 0.50 sq. in. must be repaired. Voids within **3.00 inches** of each other, any fitting, structural member or any edge must be repaired. Voids within **1.00 inch** of each other are considered one void.

e. Loose, damaged, or missing Dzus fasteners stud, grommet, and/or ejector must be replaced.

f. Worn, deteriorated, or cracked seal must be replaced.



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2-2-48. FORWARD FAIRING ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

REPAIR

NOTE

Damage which cannot be repaired without inhibiting normal usage of the fairing requires replacement of the part.

4. Repair damaged forward fairing assembly (1) (TM 1-1500-204-23).

5. Replace damaged seal (Task 2-2-49).

6. Replace loose, damaged, or missing fastener stud, grommet, and/or ejector.

FINISH

7. Touch up exterior as follows:

a. Apply tape (D216) to avoid over spray.

b. Apply one coat of epoxy primer coating (D98) (TM 55-1500-345-23).

c. Apply one coat of copper filled polyurethane conductive coating (D71) (Task 2-2-64).

d. Apply two coats of aliphatic polyurethane top coating (D150) (Task 2-2-65).

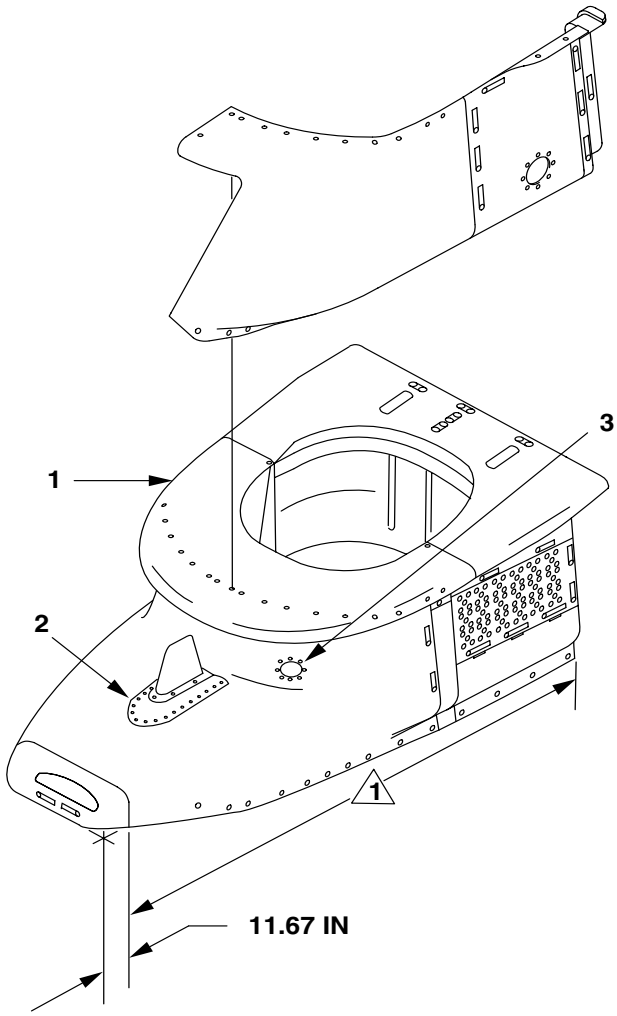
8. Touch up interior as follows:

a. Flame spray area indicated (Task 2-2-68).

b. Use masking tape (D216) to cover a **0.75 inch** diameter circle for each Dzus fastener, entire interior surface of support (2) to ensure electrical bonding, and entire window (3).

c. Apply a seal coat of epoxy primer coating (D98) (TM 55-1500-345-23).

d. Remove masking tape.



NOTE:

1 **FLAME SPRAY IS APPLICABLE TO INNER SURFACE IN THIS AREA.**

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J0422

INSPECT

END OF TASK

2-2-49. FORWARD FAIRING ASSEMBLY SEAL — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
Plastic Scraper (B123)

Material:
Acetone (D2)
Abrasive Pads (D1)
Silicone Rubber (D189)
Adhesive (D36)
Sandpaper (D176 and D173)
Wiping Rag (D164)
Rubber Gloves (D111)
Paint Brush (D54)

Personnel Required:
68G Aircraft Structural Repairer
67S Scout Helicopter Technical Inspector (TI)

Equipment Condition:
Forward Fairing Assembly Removed (Task 2-2-47)

GO TO NEXT PAGE

2-2-49. FORWARD FAIRING ASSEMBLY SEAL — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove seal (1) from forward fairing assembly (2) using a sharpened plastic scraper (B123).

Acetone

2. Remove old adhesive with acetone (D2) and abrasive pads (D1). Wipe dry with wiping rag (D164).

INSTALL

3. Make seal (1) from bulk silicone rubber (D189) and cut to proper length.

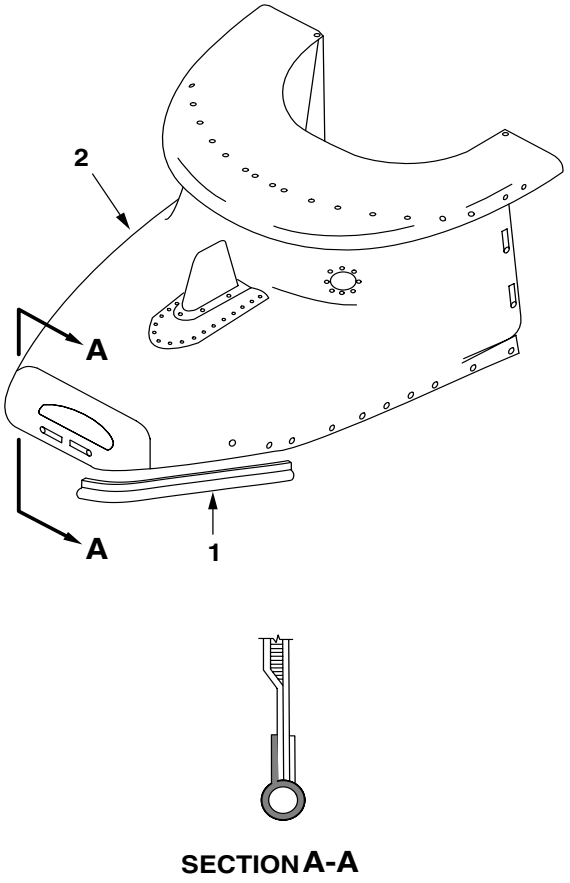
4. Lightly abrade seal (1) mating surfaces with 80 grit sandpaper (D176). Wipe surface dry with wiping rag (D164).

5. Lightly abrade mating surface of forward fairing assembly (2) with 240 grit sandpaper (D173). Clean residue off with acetone (D2). Dry with wiping rag (D164).

Sealing Compound

6. Apply adhesive (D36) to seal using brush application. Install seal (1) on fairing.

7. Cure at room temperature for 24 hours prior to installation.



SECTION A-A

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INSPECT

FOLLOW-ON MAINTENANCE

Install forward fairing assembly (Task 2-2-47).

END OF TASK

2-2-50. ENGINE COWL ASSEMBLY — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (2) (B162)
Torque Wrench (B237)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (3)

Equipment Condition:
Aft Fairing Assembly Removed (Task 2-2-55)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-50. ENGINE COWL ASSEMBLY — REMOVAL/INSTALLATION (CONT)

REMOVE

1. On engine cowl assembly (1), loosen Dzus fasteners (2) on lower cowl doors (3).

2. Open left side lower cowl door (3).

3. Disconnect electrical connector (4) from anticollision light (5) and harness (6).

4. Disconnect exhaust duct drain line (7).

5. Remove clamp (8) securing duct hose (9) to duct assembly (10) and bleed air discharge port.

6. Release Dzus fasteners (11) securing forward end of engine cowl assembly (1) to firewall and work platform.

7. Loosen Dzus fasteners (12) securing aft end of engine cowl assembly (1) to firewall.

8. Lift engine cowl assembly (1) and lower cowl side doors (3) from helicopter as an assembly.

INSTALL

9. Position engine cowl assembly (1) together with lower cowl side doors (3) over firewalls.

10. Secure Dzus fasteners (11) on forward end of engine cowl assembly (1) to firewall and work platform.

11. Secure Dzus fasteners (12) on aft end of engine cowl assembly (1) to firewall.

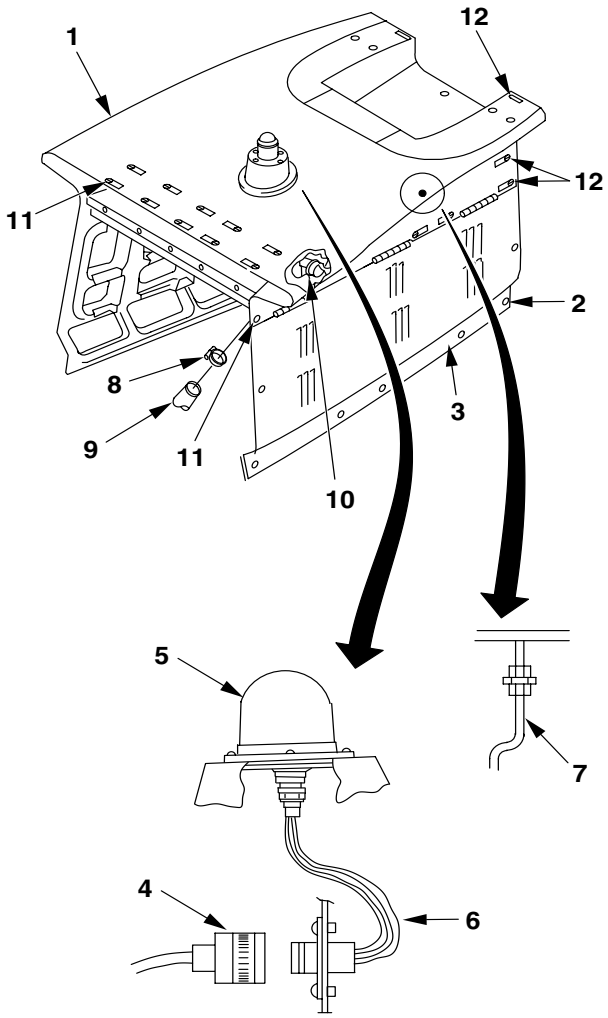
12. Install clamp (8) on duct hose (9) and secure duct hose to duct assembly (10).

13. Connect exhaust drain line (7). Torque fitting **75 TO 85 INCH-POUNDS**.

14. Connect electrical connector (4) to anticollision light (5) and harness (6).

15. Close left side lower cowl door (3).

16. Secure Dzus fasteners (2) on engine cowl assembly (1).



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INSPECT

FOLLOW-ON MAINTENANCE

Install aft fairing assembly (Task 2-2-55).

END OF TASK

2-2-51. ENGINE COWL ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
Electrical Repairer Tool Kit (B177)
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)
Epoxy Primer Coating (D98)
Adhesive (D12)
Polyurethane Conductive Coating (D71)
Polyurethane Top Coating (D150)

Personnel Required:
68F Aircraft Electrician
68G Aircraft Structural Repairer
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23
TB 1-1520-248-30-02

GO TO NEXT PAGE

2-2-51. ENGINE COWL ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Use drycleaning solvent (D199) and wiping rags (D164) to clean fiberglass upper engine cowl assembly (1) and lower aluminum engine cowl assembly (2) for inspection.

2. Use wiping rags (D164) to dry engine cowl assemblies (1 and 2).

INSPECT

NOTE

Damage which cannot be repaired without inhibiting normal usage of cowling requires replacement of part.

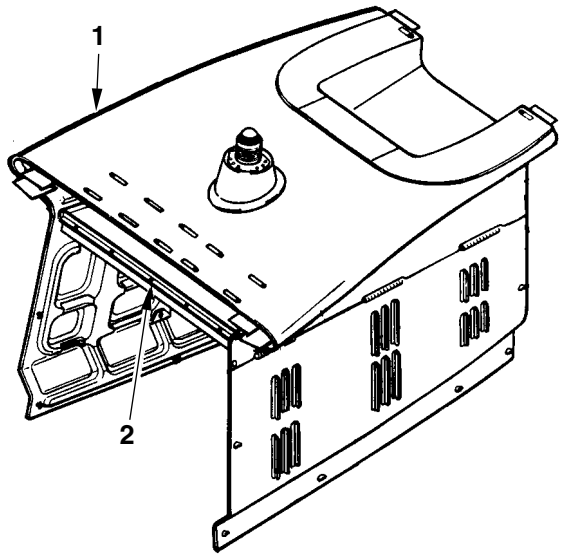
3. Inspect engine cowl assembly (1 and 2) for the following:

a. Cracks — Cracks extending within **0.50 inch** of any fastener, edge, or opening must be repaired. Other cracks must be repaired if lengths exceed **0.25 inch**.

b. Breakage — Broken parts require repair/ replacement.

c. Punctures and chipped areas — Punctures or chipped areas within **0.50 inch** must be repaired. Punctures or chipped areas within **1.00 inch** of each other are considered to be one puncture or chipped area.

d. Voids (bond failures) — Voids larger than 0.50 sq. in. must be repaired. Voids within **3.00 inches** of each other, any fitting, structural member, or any edge must be repaired. Voids within **1.00 inch** of each other are considered to be one void.



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2-2-51. ENGINE COWL ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

e. Loose damaged, or missing stud, grommet, and ejector must be replaced.

f. Worn, deteriorated, or cracked seal must be replaced.

g. Broken or damaged anticollision light (3)

h. Broken or damaged hose duct (4).

i. Broken, loose, or damaged hinge(s) for engine cowl assembly side panel (5).

j. Evidence of exhaust blow-by indicated by discoloration/damage to the fiberglass of cowling.

4. Inspect engine cowling exhaust duct (Task 2-2-54).

REPAIR

5. Remove anticollision light (3) (Task 9-5-2).

6. Remove engine cowling assembly exhaust duct (Task 2-2-54).

7. Comply with TB 1-1520-248-30-02 if evidence of blow-by was found.

8. Repair engine cowl assemblies (1 and 2) in accordance with TM 1-1500-204-23.

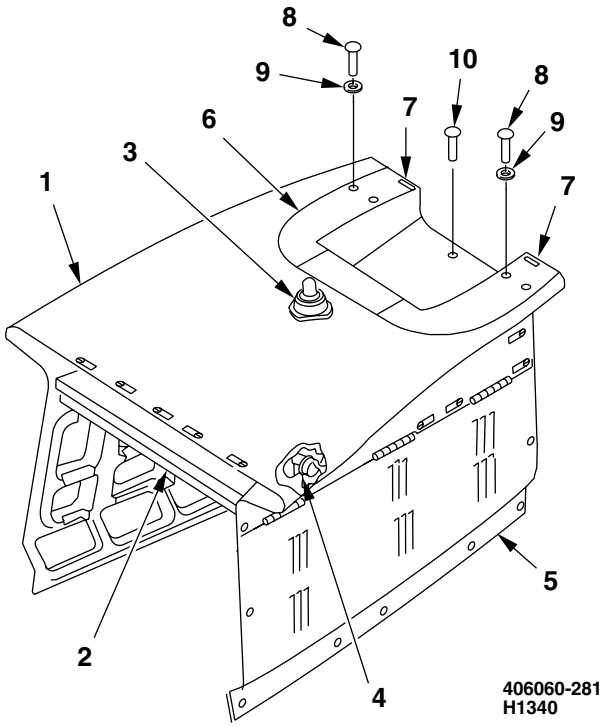
9. Install engine cowling assembly exhaust duct (Task 2-2-54).

10. Install anticollision light (3) (Task 9-5-3).

FINISH

11. Touch up exterior finish as follows:

a. Apply one coat of epoxy primer coating (D98) (TM 55-1500-345-23).



b. Apply one coat of copper filled polyurethane conductive coating (D71) to outside of cowling (Task 2-2-64).

c. Apply two coats of polyurethane top coating (D150) (Task 2-2-65).

12. Touch up interior finish as follows:

a. Apply epoxy primer coating (D98) (TM 55-1500-345-23).

INSPECT

END OF TASK

2-2-52. ENGINE COWL ASSEMBLY SIDE DOOR — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (B162)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-52. ENGINE COWL ASSEMBLY SIDE DOOR — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Position maintenance stand (B162) adjacent to left/right engine cowl assembly side door (1).

2. Unlock Dzus fasteners (2).

3. Straighten ends of three pins (3) and remove from hinges.

4. Remove engine cowl assembly side door (1).

INSTALL

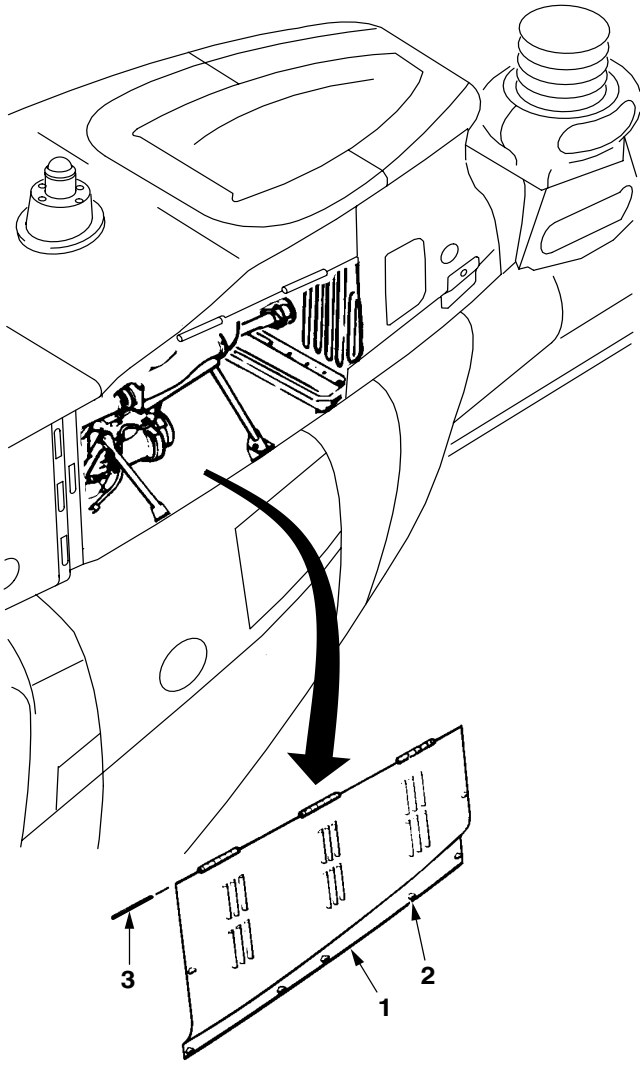
5. Place engine cowl assembly side door (1) in position.

6. Insert three pins (3) through hinge halves. Bend pins approximately 15 degrees inboard after installation.

7. Lock Dzus fasteners (2).

8. Remove maintenance stand.

INSPECT



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END OF TASK

2-2-53. ENGINE COWL ASSEMBLY SIDE DOOR — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

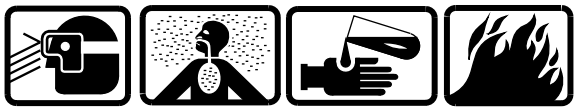
Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Top Coating (D150)
Wiping Rags (D164)
Polyurethane Conductive Coating (D71)
Rubber Gloves (D111)

Personnel Required:
68G Aircraft Structural Repairer
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

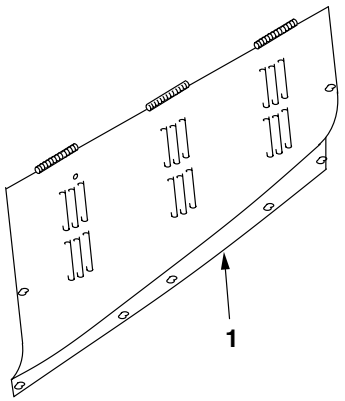
CLEAN



Drycleaning Solvent

1. Use drycleaning solvent (D199) and wiping rags (D164) to clean engine cowl assembly side door (1) for inspection.

2. Use wiping rags (D164) to dry engine cowl assembly side door (1).



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2-2-53. ENGINE COWL ASSEMBLY SIDE DOOR — CLEANING/INSPECTION/REPAIR (CONT)

INSPECT

NOTE

Any damage that prevents normal operation shall be repaired.

3. Inspect engine cowl assembly side door (1) for the following damage:

a. Cracks

b. Breakage

c. Cuts

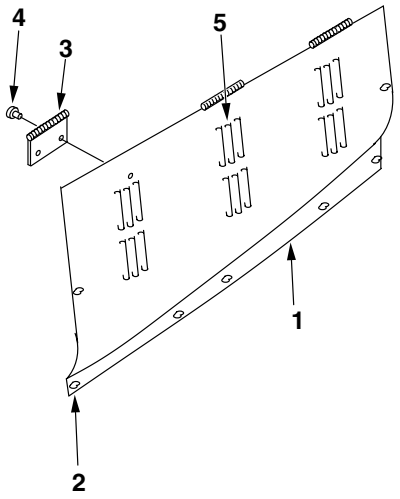
d. Punctures

e. Chipped areas.

f. Loose, damaged, or missing Dzus fastener (2) and/or grommet.

g. Broken, loose, or damaged hinge(s) (3) and rivet(s) (4).

h. Broken or damaged louvers (5).



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4. Negligible damage:

a. Nicks and scratches away from radius areas, less than **2.00 inches** long and less than 10 percent of material thickness in depth after cleanup.

b. Smooth contoured dents — Free of cracks and nicks. A minimum of **1.00 inch** undamaged material must exist between dents and supporting structure or edges. Dent limits are as follows:

DIAMETER (INCH)	DEPTH (INCH)
1.00	0.015
2.00	0.046
3.00	0.062

c. Corrosion damage less than 10 percent of material thickness in depth and covering less than 10 percent of panel area after cleanup and treatment.

5. Reparable damage:

a. Damage exceeding negligible damage limits. Repairs are limited to skin damage to areas smaller in size than 20 percent of skin panel area and replacement of any loose or missing rivets.

REPAIR

6. Repair engine cowl assembly side door (1) in accordance with TM 1-1500-204-23.

GO TO NEXT PAGE

2-2-53. ENGINE COWL ASSEMBLY SIDE DOOR — CLEANING/INSPECTION/REPAIR (CONT)

FINISH

7. Touch up exterior finish as follows:

a. Apply one coat of epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

b. Apply one coat of copper filled polyurethane conductive coating (D71) (Task 2-2-64).

c. Apply two coats of aliphatic polyurethane conductive top coating (D150) (Task 2-2-65).

8. Touch up interior finish as follows:

a. Apply epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

INSPECT

END OF TASK

2-2-54. ENGINE COWL ASSEMBLY EXHAUST DUCT (AVIM) — REMOVAL/CLEANING/INSPECTION/ REPAIR/INSTALLATION

This task covers: Removal, Cleaning, Inspection, Repair, and Installation of Engine Cowl Assembly Exhaust Duct (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
Machine Table Vise (B211)
Rawhide Mallet (B96)
Forming Tool (H-229)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)
Epoxy Primer Coating (D98)
Polyurethane Conductive Coating (D71)
Polyurethane Top Coating (D150)
Sandpaper (D175)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

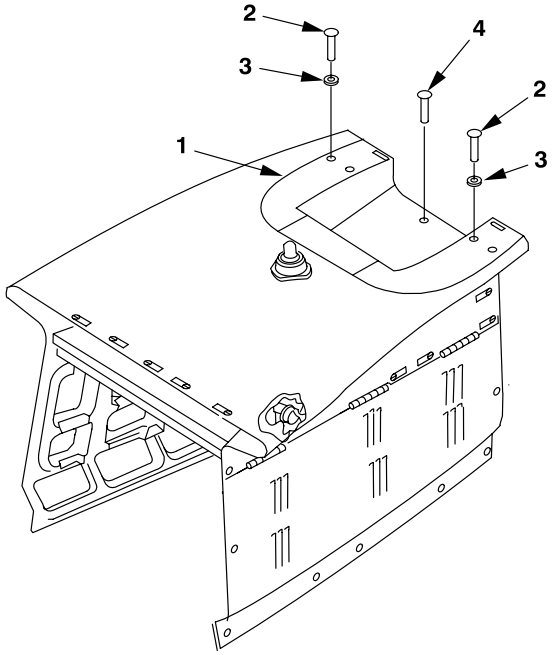
References:
TM 1-1500-204-23

GO TO NEXT PAGE

2-2-54. ENGINE COWL ASSEMBLY EXHAUST DUCT (AVIM) — REMOVAL/CLEANING/INSPECTION/ REPAIR/INSTALLATION (CONT)

REMOVE

1. Remove engine cowling exhaust duct (1) by removing rivets (2) and washers (3) attaching duct to cowling, and rivets (4) attaching cowling to mid and aft frames (TM 1-1500-204-23).



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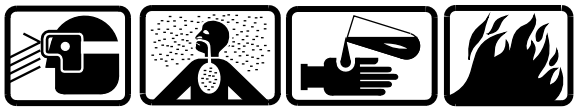
CLEAN



Drycleaning Solvent

2. Use drycleaning solvent (D199) and wiping rags (D164) to clean upper engine cowl assembly exhaust duct (1) for inspection.

3. Use wiping rags (D164) to dry upper engine cowl assembly exhaust duct (1).

INSPECT

NOTE

Damage which cannot be repaired without inhibiting normal usage of exhaust cowling requires replacement of part.

4. Inspect engine cowl assembly exhaust duct (1) for the following:

a. Cracks.

b. Breaks, punctures, or chips that cause exhaust blow-by, indicated by discoloration/ damage to the fiberglass cowling.

REPAIR

5. Replace exhaust duct (1) if crack exceeds **5 inches** in length.

6. Temporarily repair cracks less than **5 inches** in length by stopdrilling with a No. 40 drill bit. The temporary repair will be inspected for further cracking at the end of each flight day. Complete repair shall be accomplished at next scheduled down time.

7. Breaks, punctures, or chips that cause exhaust blow-by require replacement of exhaust duct (1).

GO TO NEXT PAGE

2-2-54. ENGINE COWL ASSEMBLY EXHAUST DUCT (AVIM) — REMOVAL/CLEANING/INSPECTION/ REPAIR/INSTALLATION (CONT)

8. Cracks less than **5 inches** may be repaired as follows:

a. Cut stainless steel sheet, P/N QQ-S-766D, to dimensions of **5 inches** by **23 inches**.

b. Mark from both ends of metal sheet approximately **3 1/4 inches**. Roll ends of metal sheet in roller.

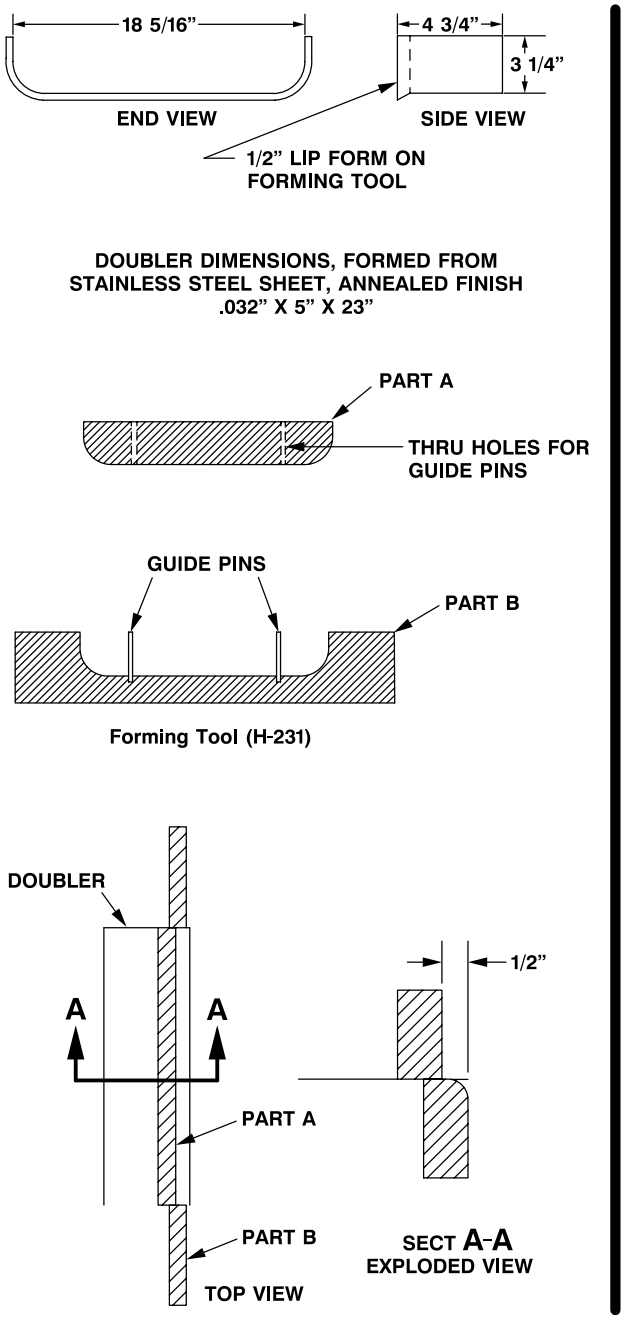
c. Insert metal sheet in forming tool (H-229). Use Part A of forming tool to complete side bends of doubler. Measure **1/2 inch** from Part A of forming tool to edge of doubler.

d. Insert guide pins in Part A of forming tool (H-229) and punch mark for drilling guide pin holes through doubler. Remove doubler from forming tool and drill holes through doubler using **1/8 inch** drill bit.

e. Reinstall doubler in forming tool (H-229) and insert guide pins through assembly. Check for **1/2 inch** protrusion of doubler from Part A of forming tool and adjust as necessary.

f. Insert entire assembly in vise (B211) with part to be formed facing up. Using mallet (B96), roll edge of doubler in forming tool (H-229) using caution not to split ends.

g. Remove doubler from forming tool (H-229) and remove burrs and rough edges with sandpaper (D175). Plug holes drilled for guide pins with rivets (TM 1-1500-204-23).



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2-2-54. ENGINE COWL ASSEMBLY EXHAUST DUCT (AVIM) — REMOVAL/CLEANING/INSPECTION/ REPAIR/INSTALLATION (CONT)

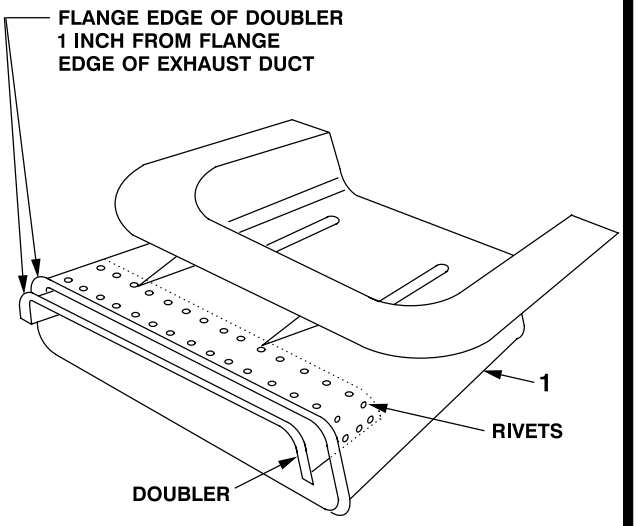
h. Position doubler in upper portion of exhaust duct (1) and measure **1 inch** from flange edge of exhaust duct to flange edge of doubler along centerline.

i. Using C-clamps, clamp doubler into exhaust duct (1). Ensure **1 inch** extension of doubler is maintained. Drill two pilot holes through exhaust duct and doubler using a No. 40 drill bit at outer spot welds of stiffener angle.

j. Using a No. 30 drill bit, drill a row of rivet holes along stiffener angle continuing around each side to seam of exhaust duct (1) spacing each rivet hole approximately **1 inch** apart. Drill a second row of rivet holes approximately **1/4 inch** from trailing edge of doubler same as above.

k. Rivet doubler in place using rivets P/N M7885/8-4-04 (TM 1-1500-204-23).

l. If crack was stop drilled, drill rivet holes and rivet the length of the crack on both sides to reinforce repair (TM 1-1500-204-23).

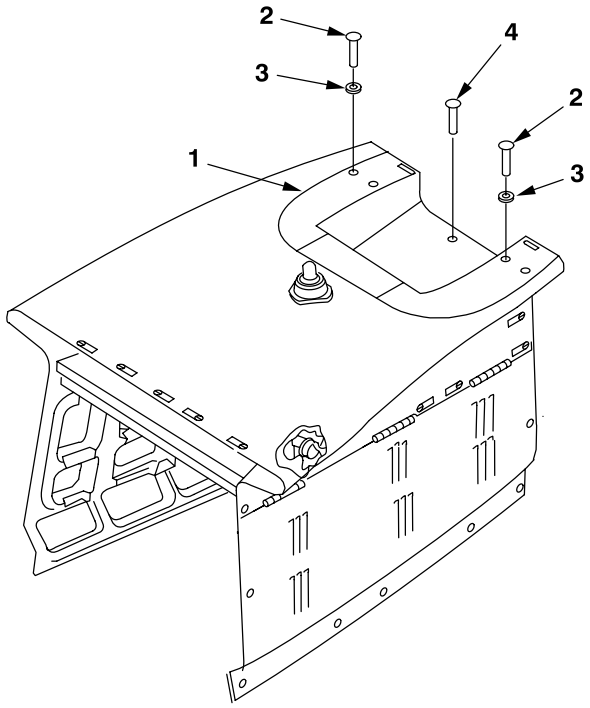


INSTALL

CAUTION

- When installing, extra care shall be exercised to ensure engine cowling exhaust duct is not preloaded. Duct shall be prefitted to ensure there is no gap at the joints.
- Using fasteners to pull parts into position is unacceptable. Fastener holes shall be deburred. No distortion is permitted around rivets securing duct.

9. Install engine cowling exhaust duct (1) on the engine cowling and attach with rivets (2) and washers (3). Attach to mid and aft frames with rivets (4) (TM 1-1500-204-23).



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INSPECT

END OF TASK

2-2-55. AFT FAIRING ASSEMBLY — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (B162)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-55. AFT FAIRING ASSEMBLY — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Place maintenance stand (B162) at aft fairing assembly (1).

2. Loosen fasteners (2) attaching aft fairing assembly (1) to helicopter.

3. Slide aft fairing assembly (1) back approximately **4 inches**, lift up, and remove from helicopter.

INSTALL

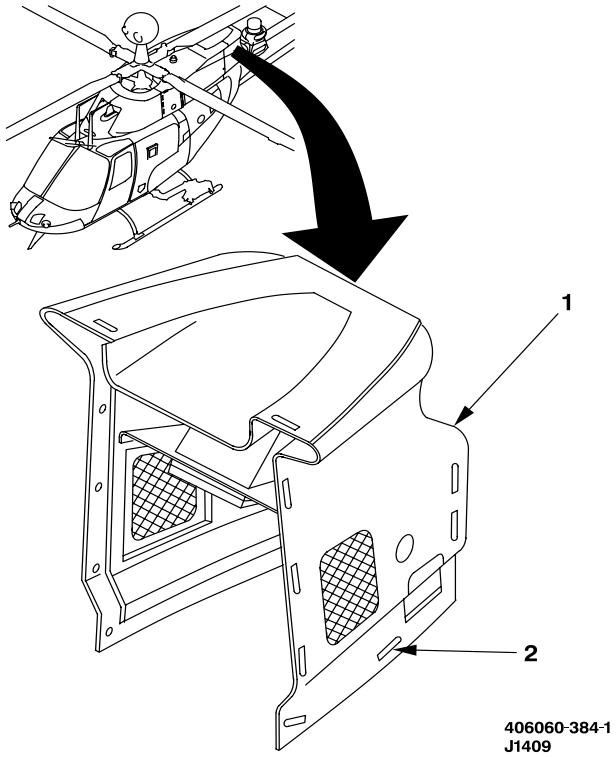
NOTE

It may be necessary to loosen Dzus fasteners on aft engine cowl assembly to align and fit the aft fairing in place.

4. Place aft fairing assembly (1) on helicopter and slide forward to align fasteners. Secure with fasteners (2).

INSPECT

5. Remove maintenance stand.



END OF TASK

2-2-56. AFT FAIRING EXTENSION — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
AN/ALQ-144 IR Jammer Mount Removed (Task 2-3-13)
Aft Fairing Removed (Task 2-2-55)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-56. AFT FAIRING EXTENSION — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove four screws (1) and split doubler (2).

2. Route IR jammer wires through opening in aft fairing extension (3).

3. Loosen Dzus fasteners (4) attaching aft fairing extension (3).

4. Lift aft fairing extension (3) from fuselage.

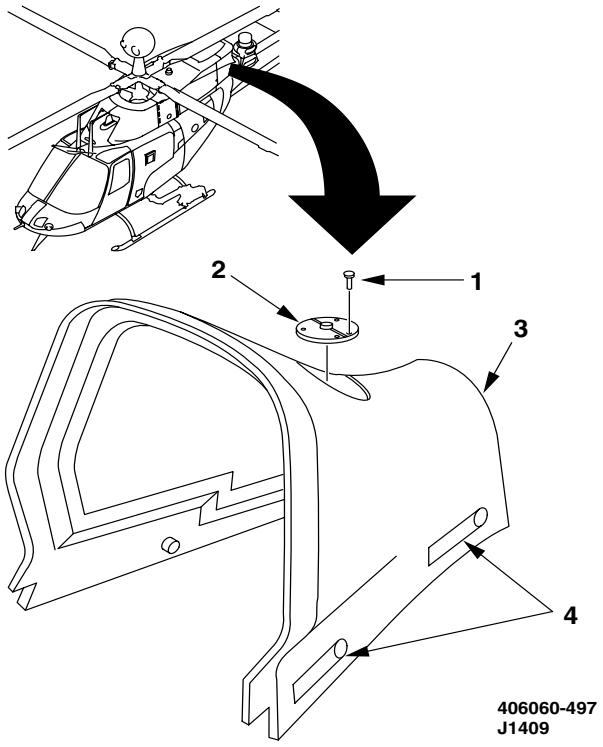
INSTALL

5. Place aft fairing extension (3) on fuselage.

6. Secure aft fairing extension (3) in place with Dzus fasteners (4).

7. Route IR jammer wires through opening in aft fairing extension (3).

8. Install split doubler (2) and secure with four screws (1).



INSPECT

FOLLOW-ON MAINTENANCE

Install AN/ALQ-144 IR jammer mount (Task 2-3-13).

Install aft fairing assembly (Task 2-2-55).

END OF TASK

2-2-57. AFT FAIRING ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Polyurethane Top Coating (D150)
Wiping Rags (D164)
Polyurethane Conductive Coating (D71)
Rubber Gloves (D111)

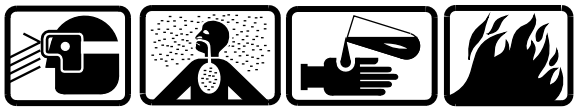
Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

GO TO NEXT PAGE

2-2-57. AFT FAIRING ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN



Drycleaning Solvent

1. Use drycleaning solvent (D199) and wiping rags (D164) to clean aft fairing assembly (1) for inspection.

2. Use wiping rags (D164) to dry aft fairing assembly (1).

INSPECT

NOTE

Damage which cannot be repaired without inhibiting normal usage of the aft fairing assembly requires replacement of part.

3. Inspect aft fairing assembly (1) for the following damage:

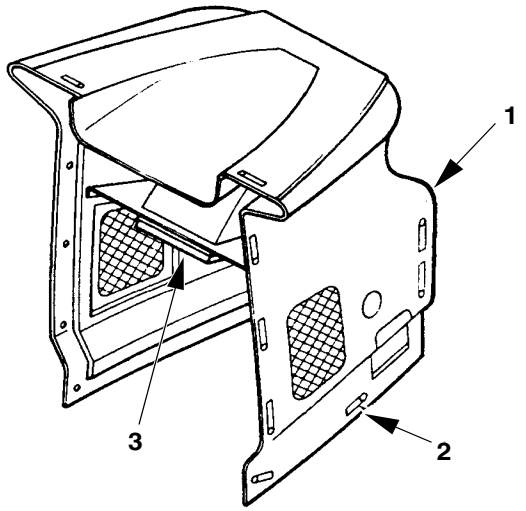
a. Cracks — Cracks which extend within **0.50 inch** of any fastener, edge, or opening must be repaired. Other cracks must be repaired if lengths exceed **0.25 inch**.

b. Breakage — Broken part requires repair/replacement.

c. Punctures and chipped areas — Punctures or chipped areas within **0.50 inch** of any fastener, edge, or opening must be repaired. Other punctures or chipped areas with a diameter greater than **0.25 inch** must be repaired. Two punctures or chipped areas within **1.00 inch** of each other are considered to be one puncture or chipped area.

d. Bond separation (voids) — Voids with an area larger than **0.50 sq. in.** must be repaired. Voids within **3.00 inches** of each other, any fitting, structural member, or any edge must be repaired. Voids within **1.00 inch** of each other are considered to be one void.

e. Loose, missing, or damaged Dzus fasteners, grommet, and/or ejector (2) must be replaced.



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NOTE

Stiffeners added across upper surface of ejector bellmouth by field modification are riveted. Production installed stiffeners are spotwelded.

f. Inspect stiffener (3) for cracks, security, broken spotwelds, or loose or missing rivets (if installed).

g. Loose, broken, or damaged engine oil service door (not shown).

REPAIR

4. Repair aft fairing assembly (1) in accordance with TM 1-1500-204-23.

5. Repair stiffener (3) in accordance with TM 1-1500-204-23.

6. Replace engine oil service door (Task 2-2-59).

7. Replace Dzus fasteners, grommet, and/or ejector (2).

GO TO NEXT PAGE

2-2-57. AFT FAIRING ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

FINISH

8. Touch up exterior finish as follows:

a. Apply one coat of epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

b. Apply one coat of copper filled polyurethane conductive coating (D71) (Task 2-2-64).

c. Apply two coats of aliphatic polyurethane top coating (D150) (Task 2-2-65).

9. Touch up interior finish by applying epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

INSPECT

END OF TASK

2-2-58. AFT FAIRING EXTENSION — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Polyurethane Top Coating (D150)
Wiping Rags (D164)
Polyurethane Conductive Coating (D71)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

GO TO NEXT PAGE

2-2-58. AFT FAIRING EXTENSION — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Use drycleaning solvent (D199) and wiping rags (164) to clean aft fairing extension (1) and split doubler (2) for inspection.

2. Use wiping rags (D164) to dry aft fairing assembly (1) and split doubler (2).

INSPECT

NOTE

Damage which cannot be repaired without inhibiting normal usage of the aft fairing extension requires replacement of the part.

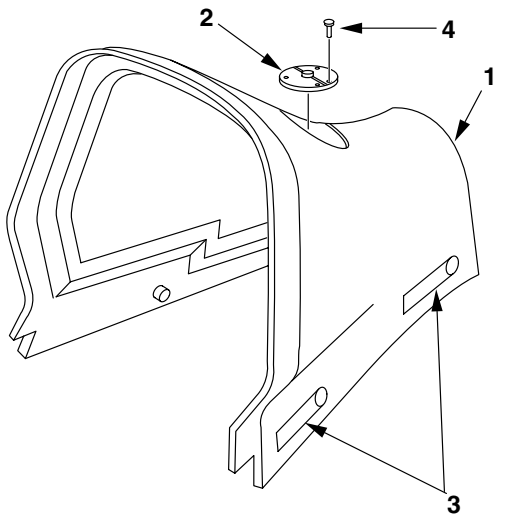
3. Inspect aft fairing extension (1) and split doubler (2) for the following damage:

a. Cracks — Cracks which extend within **0.50 inch** of any fastener, edge, or opening must be repaired. Other cracks must be repaired if lengths exceed **0.25 inch**.

b. Breakage — Broken part requires repair/replacement.

c. Punctures and chipped areas — Punctures or chipped areas within **0.50 inch** of any fastener, edge, or opening must be repaired. Other punctures or chipped areas with a diameter greater than **0.25 inch** must be repaired. Two punctures or chipped areas within **1.00 inch** of each other are considered to be one puncture or chipped area.

d. Bond separation (voids) — Voids with an area larger than **0.50 sq. in.** must be repaired. Voids within **3.00 inches** of each other, any fitting, structural member, or any edge must be repaired. Voids within **1.00 inch** of each other are considered to be one void.



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J0368

e. Loose, missing, or damaged Dzus fasteners, grommet, and/or ejector (3) must be replaced.

f. Loose, missing, or damaged screws (4).

REPAIR

4. Repair aft fairing extension (1) and split doubler (2) in accordance with TM 1-1500-204-23.

5. Replace Dzus fasteners, grommet, ejector (3), and screws (4).

GO TO NEXT PAGE

2-2-58. AFT FAIRING EXTENSION — CLEANING/INSPECTION/REPAIR (CONT)

FINISH

6. Touch up exterior finish as follows:

a. Apply one coat of epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

b. Apply one coat of copper filled polyurethane conductive coating (D71) (Task 2-2-64).

c. Apply two coats of aliphatic polyurethane top coating (D150) (Task 2-2-65).

7. Touch up interior finish by applying epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

INSPECT

END OF TASK

2-2-59. AFT FAIRING ASSEMBLY ENGINE OIL SERVICE DOOR — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (B162)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

REMOVE

1. Place maintenance stand (B162) at aft fairing assembly (1) adjacent to engine oil service door (2).

2. Open engine oil service door (2).

3. Straighten ends of hinge pin (3) and remove.

4. Remove engine oil service door (2).

INSTALL

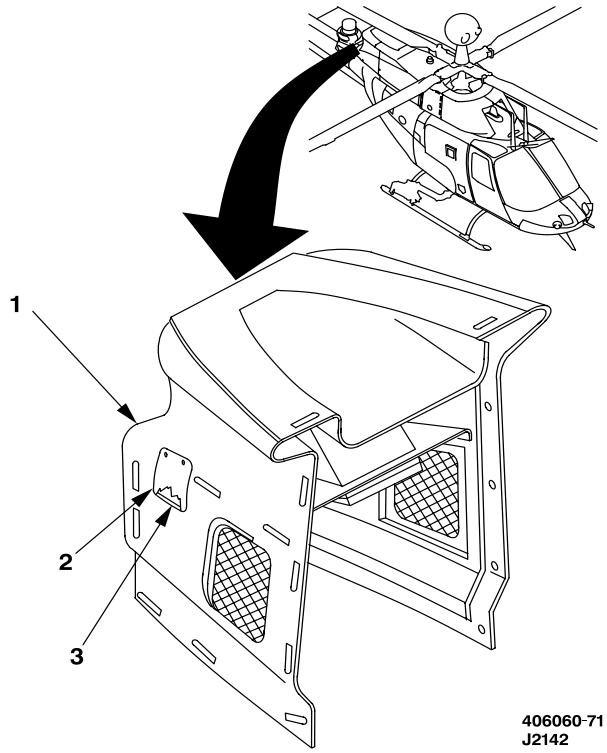
5. Place engine oil service door (2) on aft fairing assembly (1).

6. Install hinge pin (3). Bend ends of hinge pin (3) approximately 15 degrees inboard.

INSPECT

7. Close engine oil service door (2).

8. Remove maintenance stand.



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END OF TASK

2-2-60. LOWER WIRE CUTTER (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-60. LOWER WIRE CUTTER (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Support lower wire cutter assembly (1).

2. Remove quick-disconnect pins (2, 3, and 4).

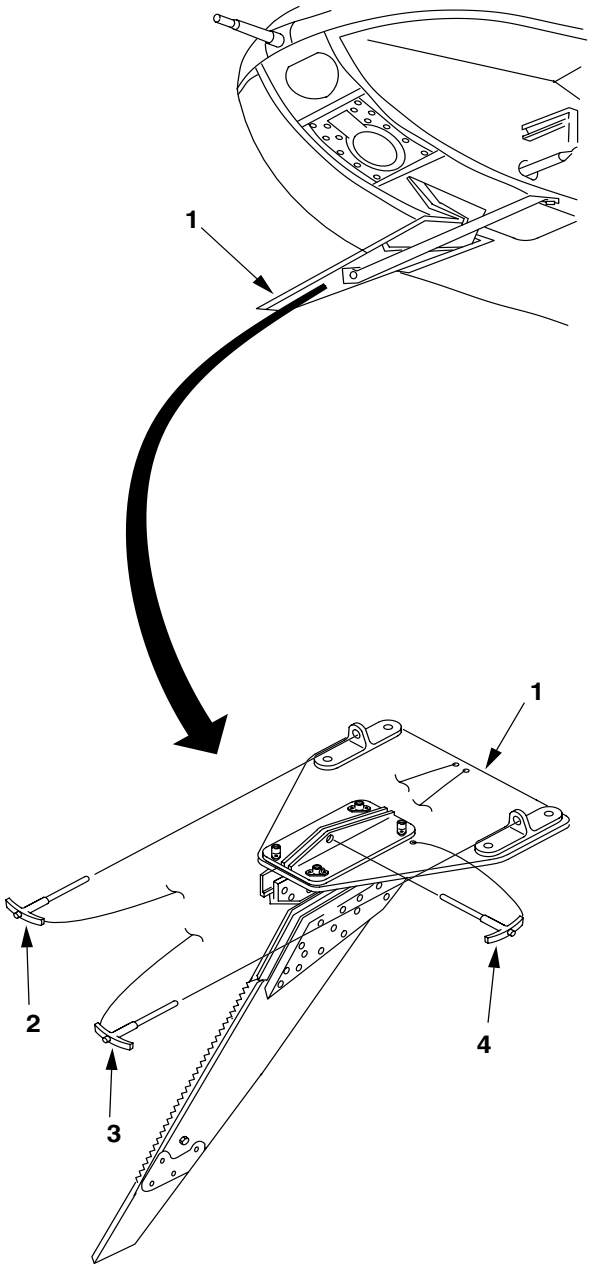
3. Remove lower wire cutter assembly (1) from helicopter.

INSTALL

4. Support lower wire cutter assembly (1) in place on helicopter.

5. Install quick-disconnect pins (2, 3, and 4) with handle facing forward.

INSPECT



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END OF TASK

2-2-61. LOWER WIRE CUTTER (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Paint Spray Gun (B61)
Torque Wrench (B235)

Material:
Sealing Compound (D184)
Epoxy Primer Coating (D98)
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)
Acetone (D2)
Masking Tape (D216)
Sandpaper (D173)
Paint (D150)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23
TM 1-1500-344-23
TM 1-1500-204-23

GO TO NEXT PAGE

2-2-61. LOWER WIRE CUTTER (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Use drycleaning solvent (D199) and wiping rags (D164) to clean lower wire cutter assembly as required for inspection.

2. Use wiping rags (D164) to dry parts.

INSPECT

3. Inspect cutter deflector sawtooth blade (1) for:

   a. Impact damage.

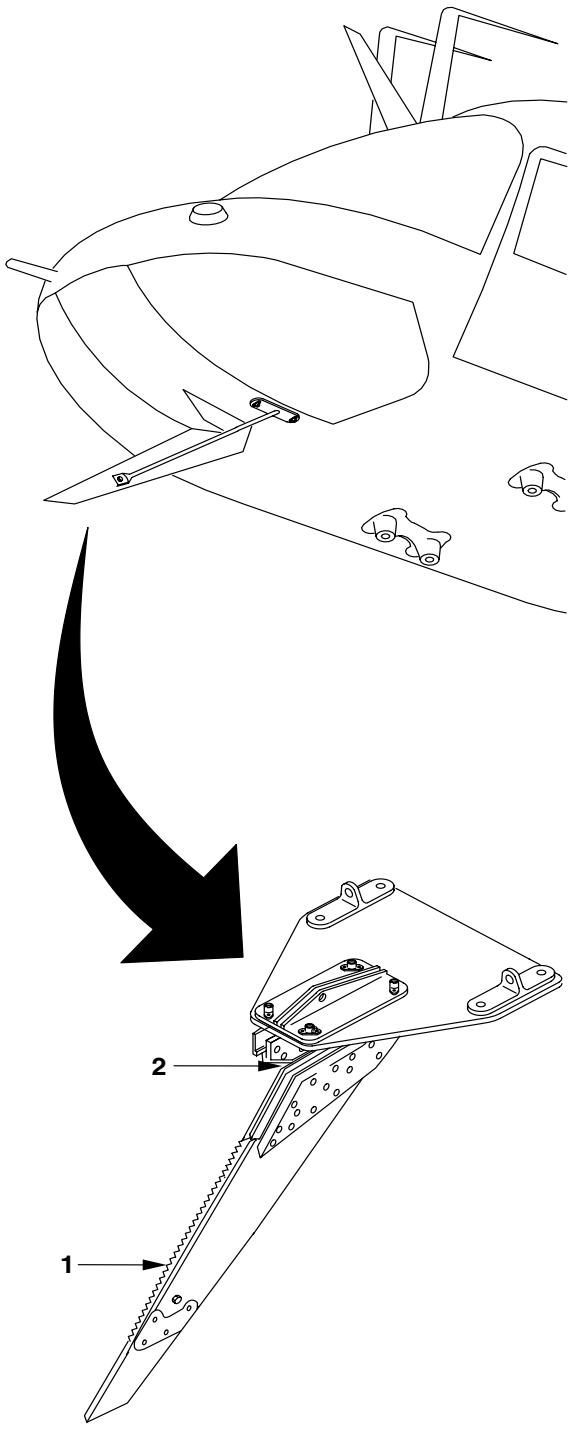
   b. Missing or damaged rubber coating.

   c. Missing or damaged teeth. Any damaged or missing teeth requires replacement of sawtooth blade (1).

4. Inspect cutter blades (2) for:

   a. Evidence of reduced sharpness due to nicks or abrasions. Any nicks or abrasions require replacement of cutter blades (2).

   b. Missing or damaged rubber coating.



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J0422

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5. Inspect struts (3) for:

a. Paint deterioration, scratches, and corrosion. No moderate or heavy corrosion allowed.

b. Cracks, particularly in the welded area and the formed tab ends. Any evidence of cracks requires replacement of strut (3).

c. Deformation of the strut/deflector attachment area and the foot pad area. Any evidence of permanent deformation requires replacement of strut (3).

d. Tube straightness. Maximum allowable bow over strut (3) length is **0.060 inch**. Any strut (3) exceeding this maximum must be replaced.

e. Security. Any loose rivets must be replaced.

6. Inspect deflector assembly (4) for:

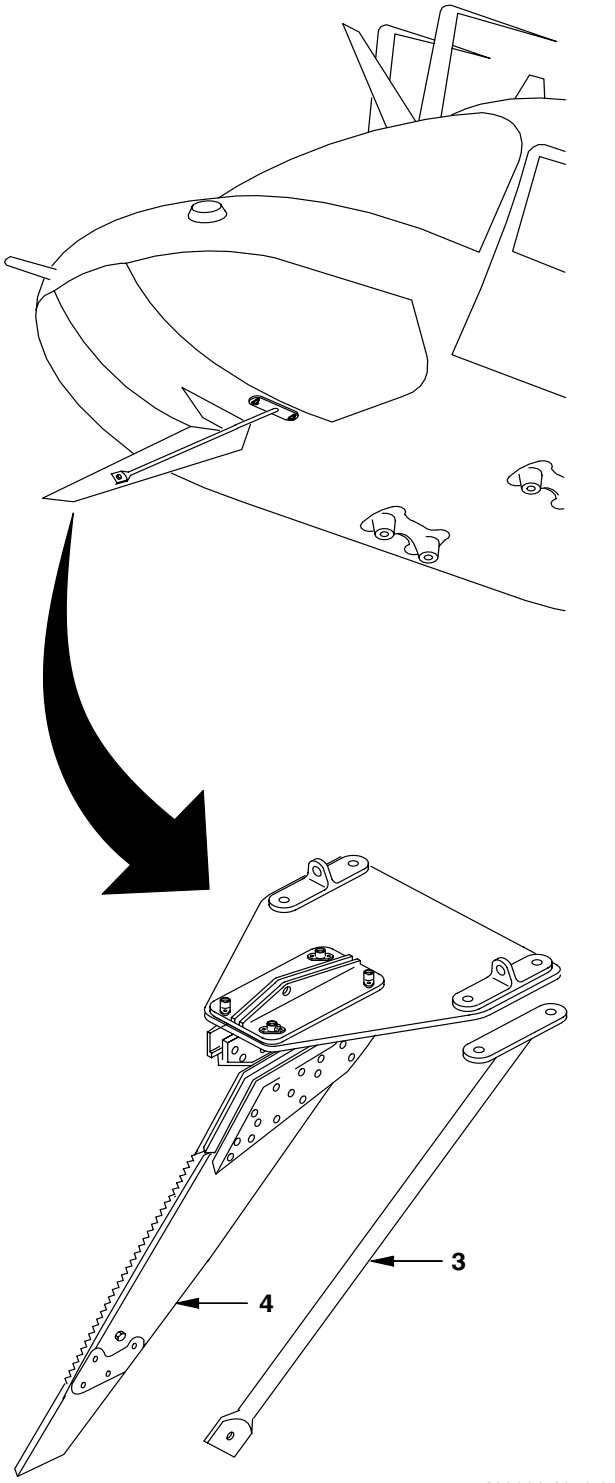
a. Cracks. Any crack requires replacement of deflector assembly (4).

b. Deformation. Any permanent deformation requires replacement of deflector assembly (4).

c. Security. Any loose rivets or bolts must be replaced.

d. Paint deterioration and corrosion. No moderate or heavy corrosion allowed.

e. Nicks, scratches, and gouges not exceeding maximum depth of **0.010 inch** after repair may be repaired. Any excess of this depth requires replacement of deflector assembly.



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7. Inspect breakaway tip (5) for:

a. Paint deterioration, superficial paint scratches, and light corrosion. No moderate or heavy corrosion allowed.

b. Scratches, nicks, and gouges not exceeding depth of **0.006 inch** may be repaired. Any damage exceeding this depth requires replacement of breakaway tip (5).

c. Security. If there is evidence of loose rivets, replace entire breakaway tip (5).

8. Inspect doubler (6) for:

a. Paint deterioration, paint scratches, and light corrosion. No moderate or heavy corrosion allowed.

b. Nicks, scratches, and gouges. Nicks, scratches, and gouges not exceeding **0.006 inch** in depth may be repaired. Any damage exceeding this depth requires replacement of doubler (6).

c. Deformation. Any evidence of permanent deformation requires replacement of doubler (6).

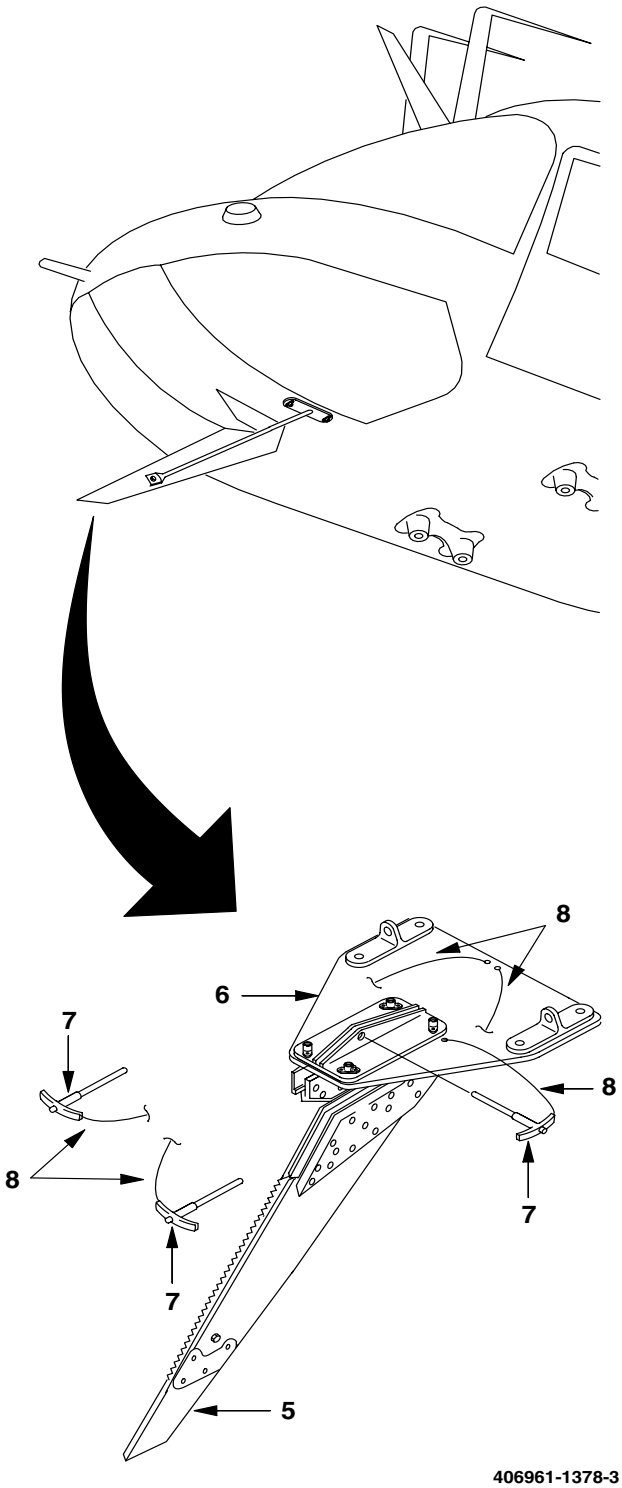
d. Cracks. Any cracks require replacement of doubler (6).

9. Inspect pins (7) for:

a. Operation of securing mechanism. Any failure requires replacement of pins (7).

b. Nicks, scratches, gouges, and cracks. Any damage that keeps pins from securing in brackets requires replacement of pins (7).

c. Lanyards (8) for fraying or broken wire strands. Any damage requires replacement.



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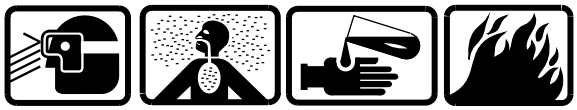
10. Replace cutter deflector sawtooth blade (9) as follows:

a. Remove five rivets (10) securing sawtooth blade (9) (TM 1-1500-204-23).



Acetone

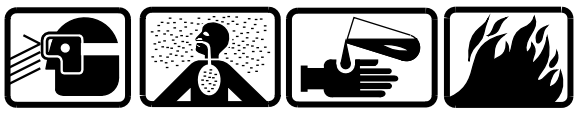
b. Remove sawtooth blade (9) from deflector assembly (4). Clean sealing compound from sawtooth blade (9) and deflector assembly (4) with acetone (D2).

c. Install sawtooth blade (9) in deflector assembly (4) with teeth facing cutter throat.

d. Secure sawtooth blade (9) to deflector assembly (4) with five rivets (10) (TM 1-1500-204-23).

Drycleaning Solvent

e. Mask deflector assembly (4) with masking tape (D216). Apply a light coat of sealing compound (D184) to teeth of sawtooth blade (9). Allow sealing compound to set before removing masking tape.



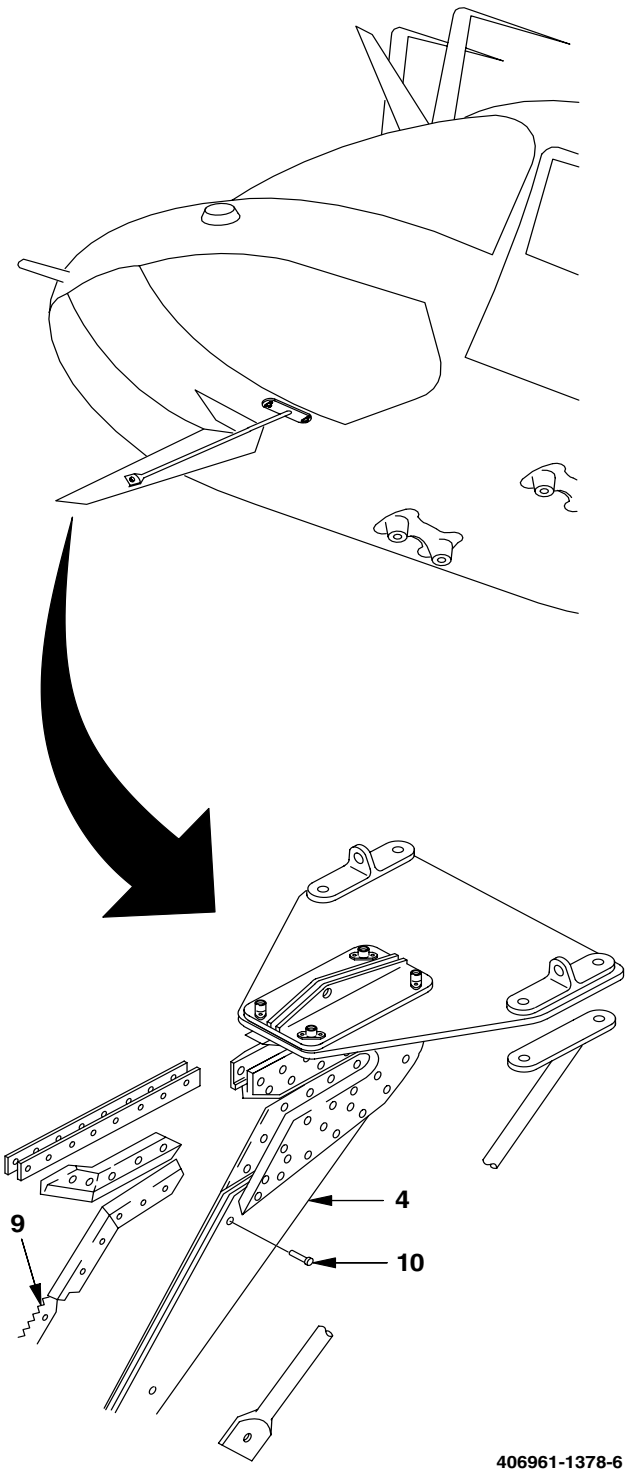
Sealing Compound

f. Missing rubber coating on sawtooth blade (9) will be repaired by applying a light coat of sealing compound (D184).

g. Prime repaired areas with epoxy primer coating (D98) (TM 55-1500-345-23).

h. Apply paint (D150) to primed areas (TM 55-1500-345-23).

INSPECT



406961-1378-6
J0422

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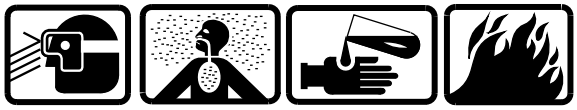
2-2-61. LOWER WIRE CUTTER (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)

11. Replace cutter blades (11) as follows:

a. Remove 9 nuts (12), 18 washers (13), and 9 bolts (14) securing guide blades (15) and cutter blades (11).

b. Remove guide blades (15), cutter blades (11), and shims (16 and 17) from deflector assembly (4). Note position of shims (16 and 17) for reinstallation.



Acetone

c. Clean sealing compound from blades, shims, and deflector assembly with acetone (D2).

Sealing Compound

d. Apply sealing compound (D184) to cutter blade (11) and guide blades (15). Position blades in deflector assembly (4) with shims (16 and 17) in same position they were when removed.

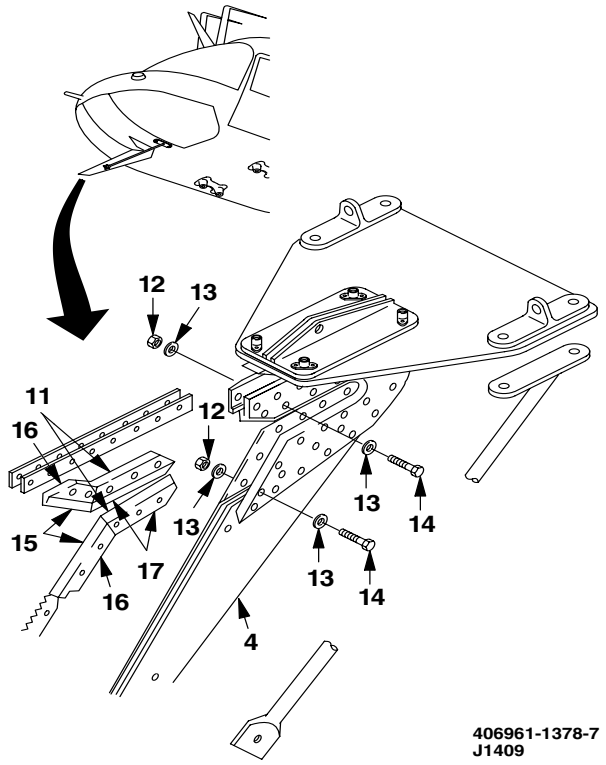
e. Install 9 bolts (14), 18 washers (13), and 9 nuts (12) to secure blades (11) and (15). Torque nuts (12) **12 TO 15 INCH-POUNDS**.

f. Check gap of junction at aft portion of cutter blades. Maximum allowable gap is **0.020 inch**.

Acetone

g. Clean excess sealing compound with acetone (D2).

h. Prime repaired areas with epoxy primer coating (D98) (TM 55-1500-345-23).



i. Apply paint (D150) to primed areas (TM 55-1500-345-23).

Sealing Compound

j. Replace missing or deteriorated rubber coating with sealing compound (D184).

INSPECT

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12. Repair deflector assembly (4) as follows:

a. Clean and repair light corrosion (TM 1-1500-344-23).

Sanding Operations

b. Use 240 grit sandpaper (D173) to polish out scratches and nicks not exceeding **0.010 inch** deep after repair.

c. Prime repaired areas with epoxy primer coating (D98) (TM 55-1500-345-23).

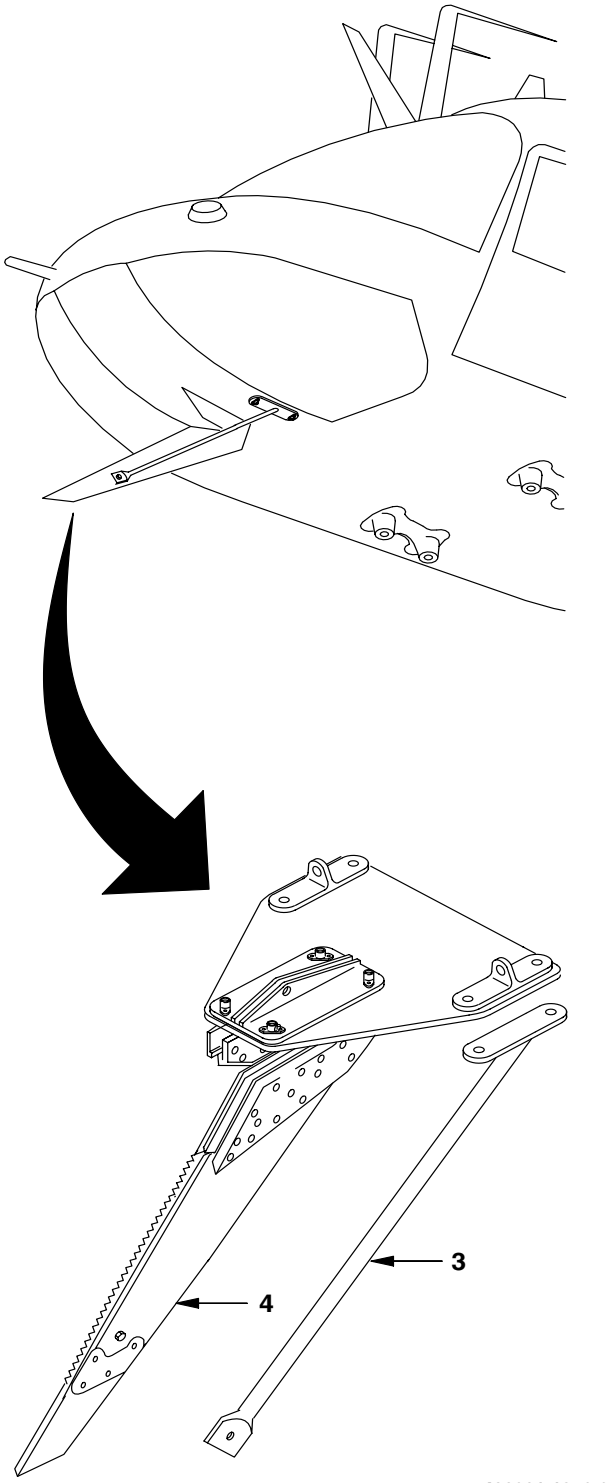
d. Apply paint (D150) to primed areas (TM 55-1500-345-23).

e. Replace deflector assembly (Task 2-2-60).

13. Repair struts (3) as follows:

a. Clean and repair light corrosion (TM 1-1500-344-23).

b. Repair deteriorated or scratched paint (TM 55-1500-345-23).



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c. Replace struts as follows:

(1) Remove two screws (18), two washers (19) and two countersunk screws (20).

(2) Remove nut (21), two washers (22), two spacers (23), bolt (24), and remove two struts (3).

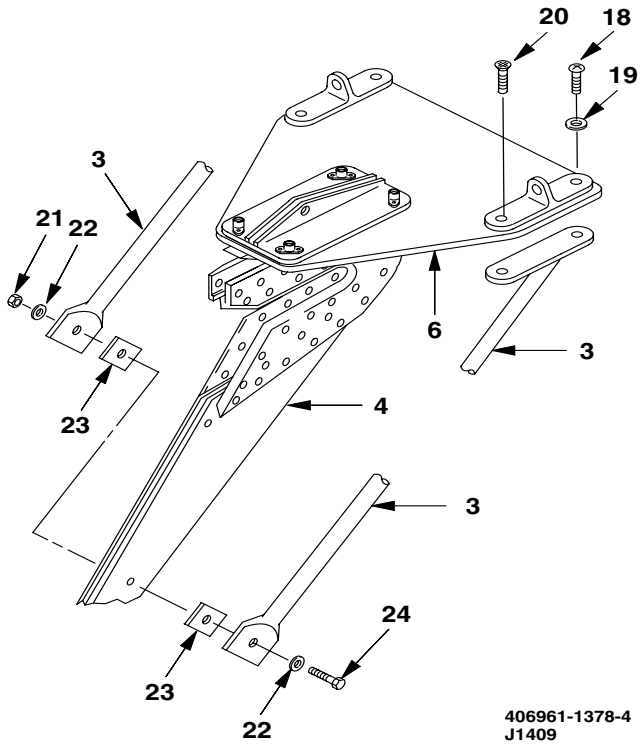
(3) Place two struts (3) on deflector assembly (4).

(4) Install bolt (24), two spacers (23), two washers (22), and nut (21).

(5) Place upper end of two struts (3) on doubler (6).

(6) Install two countersunk screws (20), two washers (19), and two screws (18).

INSPECT



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2-2-61. LOWER WIRE CUTTER (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)

14. Replace breakaway tip (5) as follows:

a. Remove two nuts (25), washers (26), and bolts (27). Remove breakaway tip (5).

b. Place breakaway tip (5) on deflector assembly (4), and install two bolts (27), washers (26), and nuts (25).

Sanding Operations

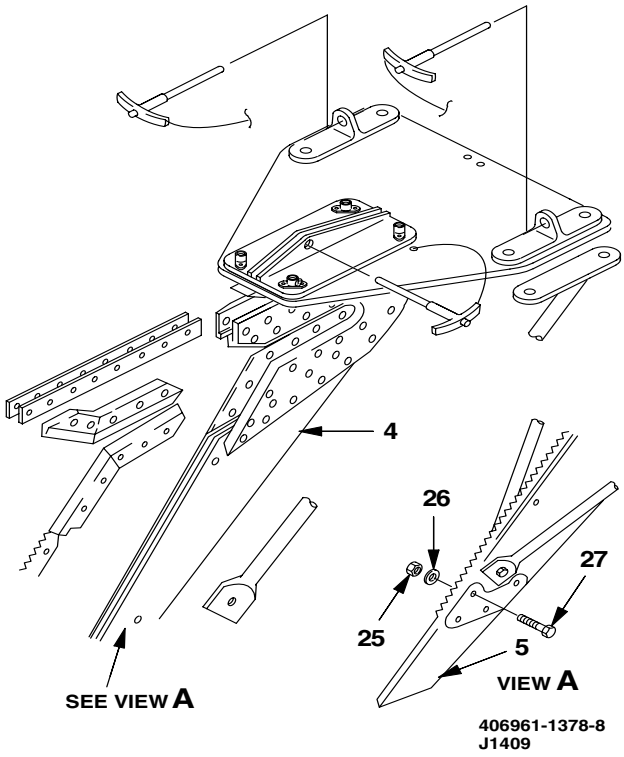
c. Use 240 grit sandpaper (D173) to polish out scratches not exceeding **0.006 inch** deep after repair.

INSPECT

d. Prime repaired areas with epoxy primer coating (D98) (TM 55-1500-345-23).

e. Apply paint (D150) to primed areas (TM 55-1500-345-23).

INSPECT



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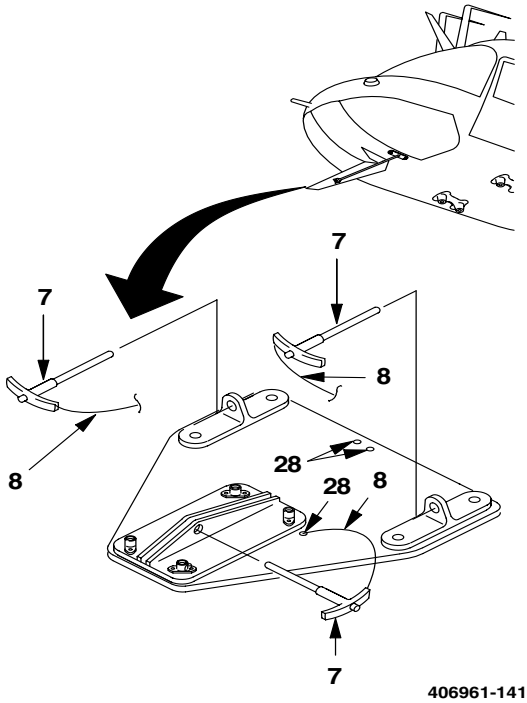
2-2-61. LOWER WIRE CUTTER (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)

15. Replace three pins (7) and lanyards (8) as follows:

a. Remove three rivets (28) (TM 1-1500-204-23).

b. Install three pins (7) and lanyards (8) with three rivets (28) (TM 1-1500-204-23).

INSPECT



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16. Repair doubler (6) as follows:

a. Clean and treat light corrosion in accordance with TM 1-1500-344-23).

Sanding Operations

b. Use 240 grit sandpaper (D173) to polish out nicks and scratches not exceeding **0.006 inch** deep after repair.

INSPECT

c. If bracket (29) is damaged, replace it (Task 2-2-60).

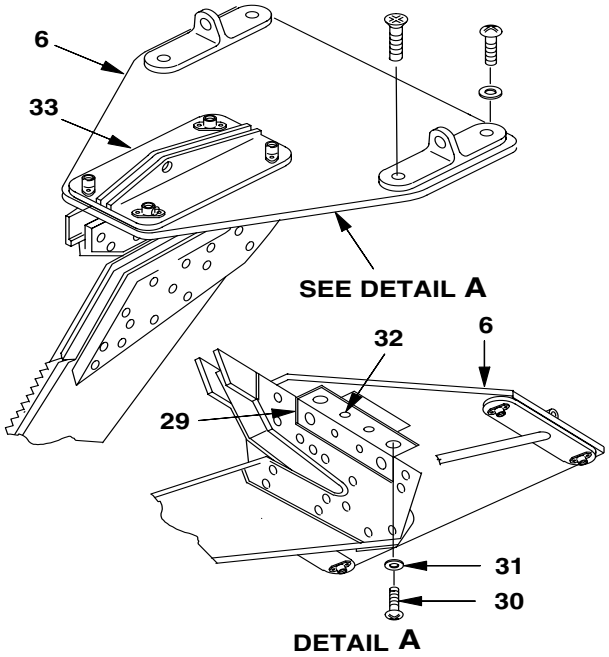
d. Prime repaired areas with epoxy primer coating (D98) (TM 55-1500-345-23).

e. Apply paint (D150) to primed areas (TM 55-1500-345-23).

INSPECT

17. Replace doubler (6) as follows:

a. Remove four screws (30), four washers (31), and four rivets (32) attaching bracket (29) to doubler (6) and remove fitting (33) (TM 1-1500-204-23).



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b. Remove two screws (18), two washers (19), two countersunk screws (20), and two fittings (34).

c. Remove doubler (6) from deflector assembly (4).

d. Place bracket (29) attached to deflector assembly (4) on doubler (6).

e. Place fitting (33) on doubler (6) and install four screws (30) and four washers (31).

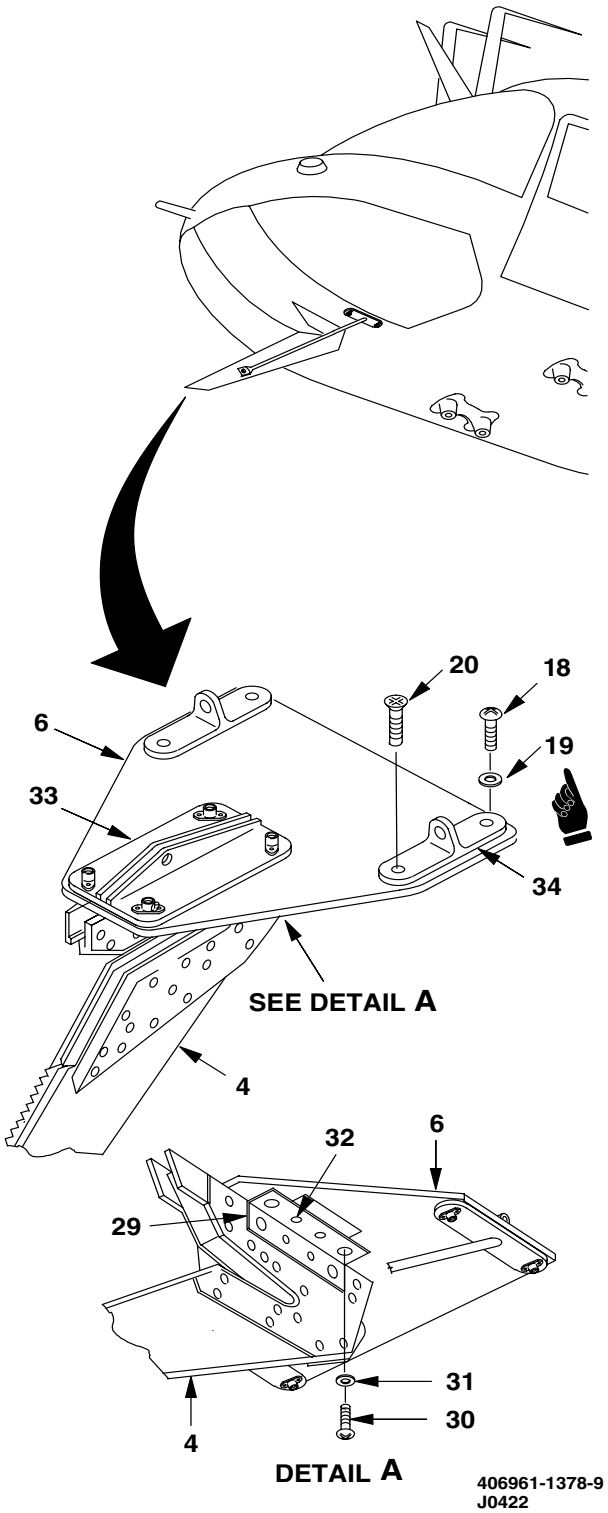
f. Install four rivets (32) (TM 1-1500-204-23).

g. Place two fittings (34) on doubler (6) and install two countersunk screws (20), two washers (19), and two screws (18).

h. Prime repaired areas with epoxy primer coating (D98) (TM 55-1500-345-23).

i. Apply paint (D150) (TM 55-1500-345-23).

INSPECT



END OF TASK

2-2-62. UPPER WIRE CUTTER — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
Plastic Scraper (B123)

Material:
Sealing Compound (D181)
Sealing Compound (D184)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-62. UPPER WIRE CUTTER — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove 6 nuts (1), 12 washers (2), and 6 screws (3) securing windshield deflector sawtooth blade (4) to channel (5).

2. Remove sawtooth blade (4) from channel (5).

3. Remove three rivets (6), and collars (7) from plates on each side of center strut (8) (TM 1-1500-204-23).

4. Remove collar (9), rivet (10), and two washers (11) attaching side struts (12) to wire cutter assembly (13) (TM 1-1500-204-23).

5. Remove 11 collars (14), 11 rivets (15), and 22 washers (16) (TM 1-1500-204-23).

6. Use plastic scraper (B123) and remove sealant between doublers (17) and base of wire cutter assembly (13).

7. Remove wire cutter assembly (13).

INSTALL

8. Place wire cutter assembly (13) between doublers (17) on top of cabin.

9. Align holes in doublers (17) and wire cutter assembly (13).

10. Loosely install 11 rivets (15), 22 washers (16), and 11 collars (14) (TM 1-1500-204-23).

11. Place left and right side struts (12) on wire cutter assembly (13).

12. Align holes in side struts (12) and wire cutter assembly (13).

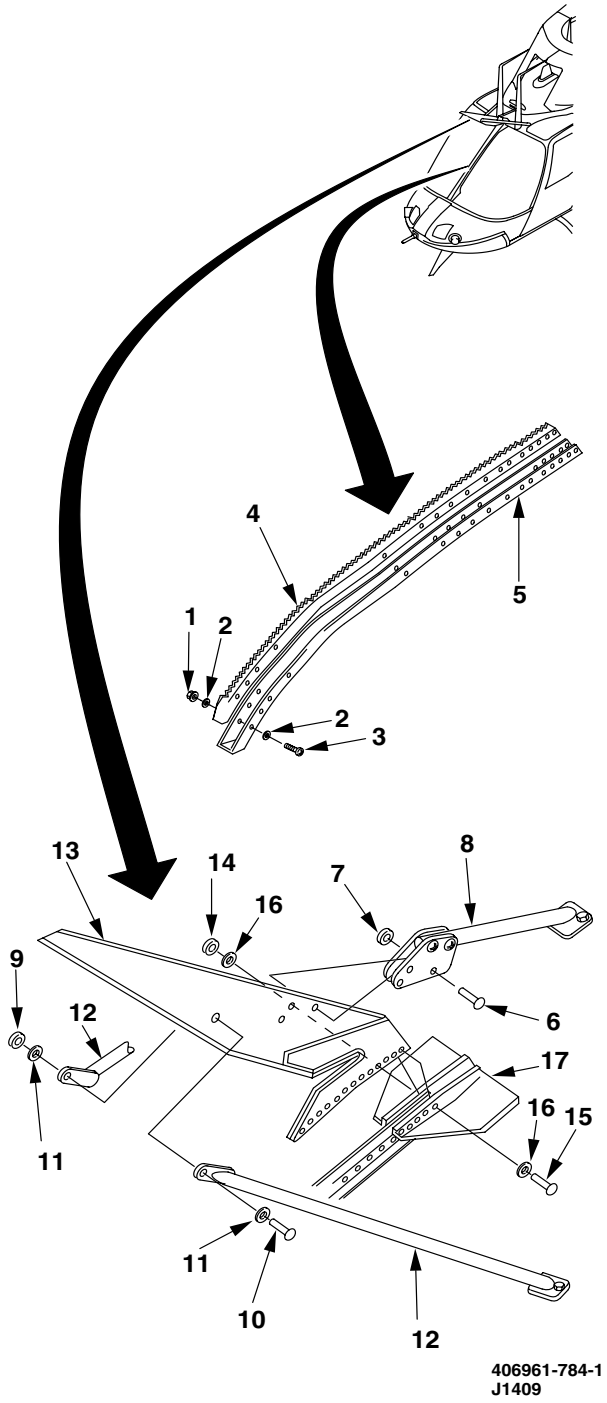
13. Loosely install rivet (10), two washers (11), and collar (9) (TM 1-1500-204-23).

14. Place center strut (8) on wire cutter assembly (13).

NOTE

Wire cutter assembly is not predrilled for center strut mounting. New wire cutter assemblies must be drilled using the center strut mount plates as locators at time of installation. If wire cutter assembly has previously been drilled, go to step 18.

15. Drill three **0.187 to 0.189 inch** diameter holes as required using center strut assembly (8) mount plate holes for location (TM 1-1500-204-23).



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2-2-62. UPPER WIRE CUTTER — REMOVAL/INSTALLATION (CONT)

16. Move center strut assembly (8) and deburr drilled holes in wire cutter assembly (13).

17. Place center strut (8) on wire cutter assembly (13).

18. Align holes in center strut (8) and wire cutter assembly (13).

19. Install three collars (7) with three rivets (6) to secure center strut (8) (TM 1-1500-204-23).

20. Tighten 11 collars (14) to secure 22 washers (16), 11 rivets (15), and wire cutter assembly (13) (TM 1-1500-204-23).

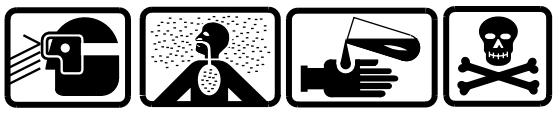
21. Tighten collar (9) to secure two washers (11), rivet (10), and side struts (12) (TM 1-1500-204-23).

Sealing Compound

22. Apply a bead of sealing compound (D184) at base of wire cutter assembly (13) and between doublers (17) to ensure adequate drainage at drain hole.

23. Install sawtooth blade (4) in channel (5).

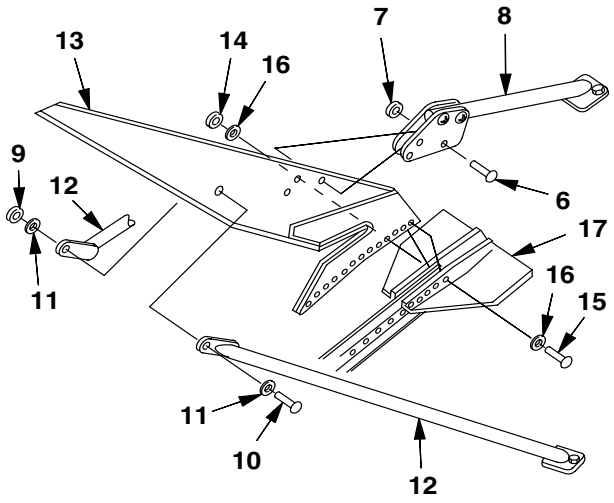
24. Secure windshield deflector sawtooth blade (4) to channel (5) with 6 screws (3), 12 washers (2), and 6 nuts (1).

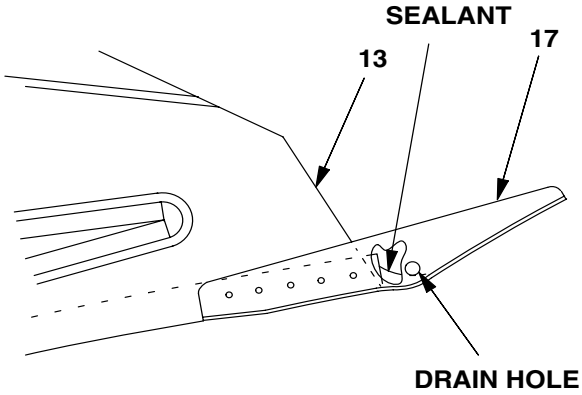


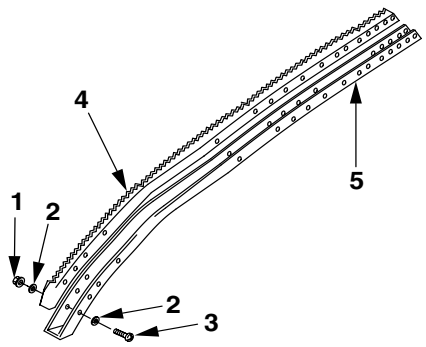
Adhesive

25. Apply a bead of sealing compound (D181) to faying surfaces or channel (5) and windshield deflector sawtooth blade (4).

INSPECT







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END OF TASK

2-2-63. UPPER WIRE CUTTER — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Torque Wrench (B235)
Work Aid (H6)
Work Aid (H20)

Material:
Acetone (D2)
Sealing Compound (D184)
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)
Masking Tape (D216)
Epoxy Primer Coating (D98)
Polyurethane Top Coating (D150)
Sandpaper (D173)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 1-1500-344-23
TM 55-1500-345-23
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

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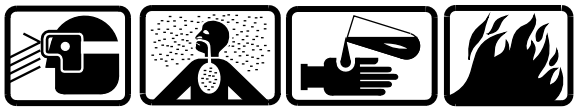
2-2-63. UPPER WIRE CUTTER — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN



Drycleaning Solvent

1. Use drycleaning solvent (D199) and wiping rags (D164) to clean upper wire cutter as required for inspection.

2. Use wiping rags (D164) to dry parts.

INSPECT

3. Inspect cutter deflector blade (1) for:

   a. Impact damage.

   b. Shedding of the rubber coating.

4. Inspect cutter blade (2) for:

   a. Evidence of reduced sharpness due to nicks or abrasions. Any nicks or abrasion require replacement of cutter blade.

   b. Shedding of the rubber coating.

5. Inspect strut assemblies (3) for:

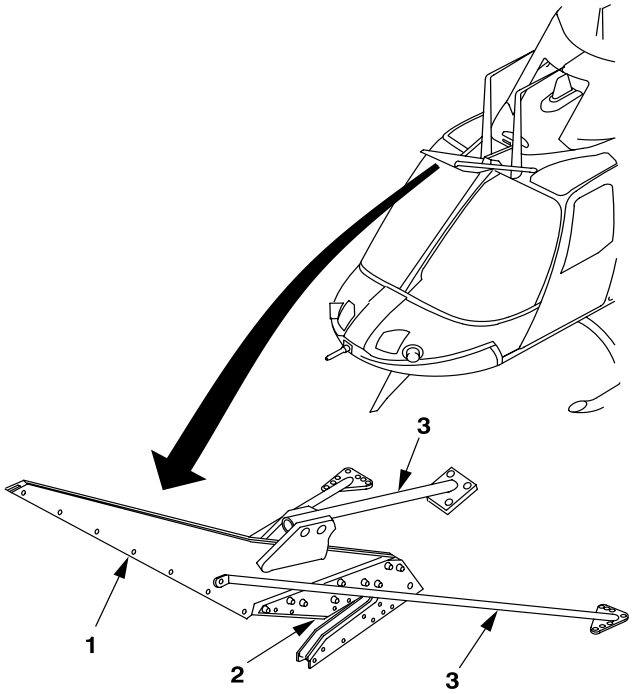
   a. Paint deterioration, superficial paint scratches and light corrosion. No moderate or heavy corrosion allowed.

   b. For cracks, particularly in the welded areas and the formed tab ends. Any evidence of cracks requires replacement.

   c. For deformation at the strut/deflector attachment area and the foot pad area. Evidence of permanent deformation requires replacement.

   d. For straightness. Maximum allowance bow over strut length is **0.060 inch**. Any bow exceeding this maximum requires strut replacement.

   e. For security. Any loose rivets must be replaced in accordance with TM 1-1500-204-23.



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2-2-63. UPPER WIRE CUTTER — CLEANING/INSPECTION/REPAIR (CONT)

6. Inspect deflector assembly (4) for:

a. Paint deterioration and light corrosion. No moderate or heavy corrosion allowed.

b. Scratches, nicks, and gouges. Scratches, nicks, or gouges not exceeding a depth of **0.010 inch** will be repaired.

c. Cracks and permanent deformation. Any cracks or permanent deformation require replacement.

d. Security, any loose rivets must be replaced.

7. Inspect the surrounding support structure for evidence of permanent deformation. If permanent structural deformation exists replace the complete cutter assembly.

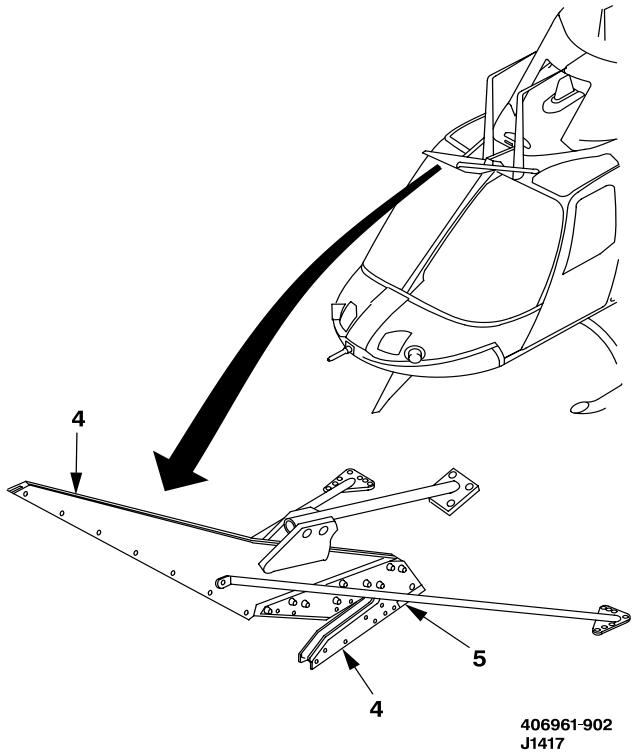
8. Inspect the doublers (5) for:

a. Paint deterioration and light corrosion. No moderate or heavy corrosion is allowed.

b. Scratches, nicks or gouges. Scratches, nicks, or gouges not exceeding **0.006 inch** may be repaired.

c. Cracks and permanent deformation. Any evidence of cracks and/or permanent deformation requires replacement.

d. Security, any loose rivets must be replaced.



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2-2-63. UPPER WIRE CUTTER — CLEANING/INSPECTION/REPAIR (CONT)

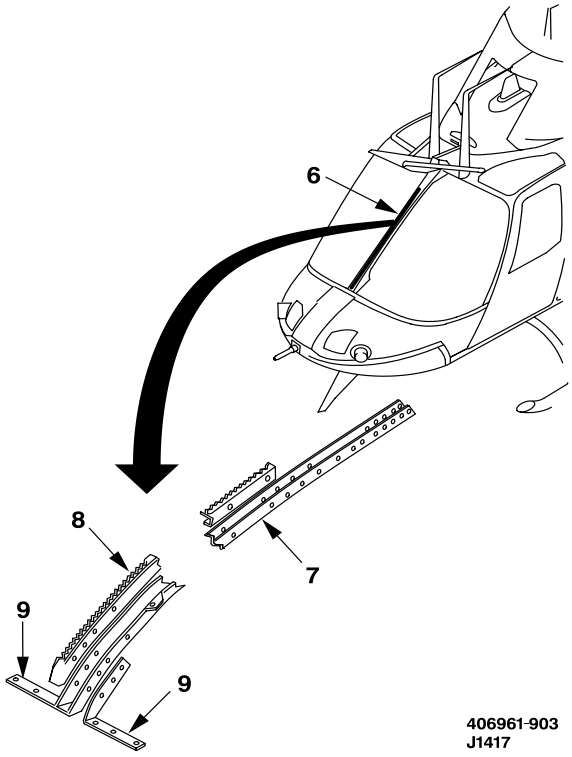
9. Inspect windshield deflector assembly (6) for:

a. Paint deterioration and light corrosion. No moderate or heavy corrosion allowed.

b. Scratches, nicks, and gouges in channel (7) and sawtooth insert (8). Scratches, nicks, and gouges not exceeding a depth of **0.010 inch** may be repaired.

c. Security and deformation, paying particular attention to clips (9) at bottom of windshield for cracks and gaps between clips and windshield. Any crack or deformation requires replacement. No gaps are permitted. Trim or replace as required.

d. Sawtooth insert (8) for impact damage or shedding of rubber coating. Missing or deformed teeth. Any missing or deformed teeth require replacement.



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2-2-63. UPPER WIRE CUTTER — CLEANING/INSPECTION/REPAIR (CONT)

REPAIR

10. Replace cutter deflector sawtooth blade (10) as follows:

Drilling Operations

a. Remove seven rivets (11) securing sawtooth blade (10) to deflector (4).

b. Remove sawtooth blade (10) from deflector (4).

Acetone

c. Clean sealing compound and paint from deflector (4) with acetone (D2).

d. Install sawtooth blade (10) in deflector (4) and secure with seven rivets (11) (TM 1-1500-204-23).

Sealing Compound

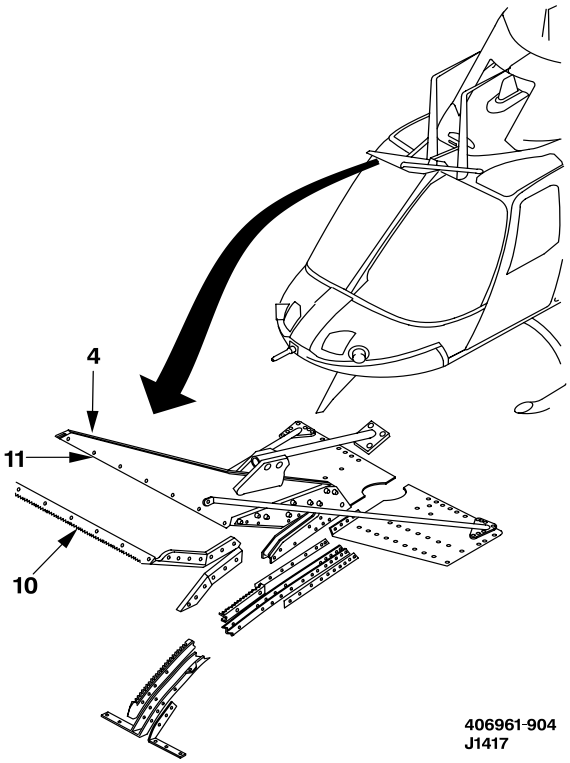
e. Mask deflector (4) with tape (D216) and coat teeth of sawtooth blade (10) with a minimal coat of sealing compound (D184). Allow sealing compound to set prior to removing tape.

f. Prime repaired area with epoxy primer coating (D98) (TM 55-1500-345-23).

g. Apply aliphatic polyurethane top coating (D150) to primed areas (TM 55-1500-345-23).

h. Replace deteriorated rubber coating with sealing compound (D184).

INSPECT



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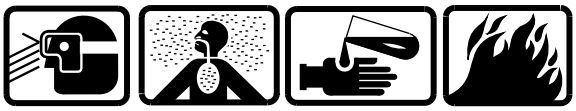
2-2-63. UPPER WIRE CUTTER — CLEANING/INSPECTION/REPAIR (CONT)

11. Replace cutter blades (12) as follows:

a. Remove 12 nuts (13), 24 washers (14), and 12 bolts (15).

b. Remove guide blades (16), cutter blades (12), and shims (17) from deflector (4). Note position of shims (17) for reinstallation.

c. Clean sealing compound from shims (17) and deflector (4) in blade area.



Sealing Compound

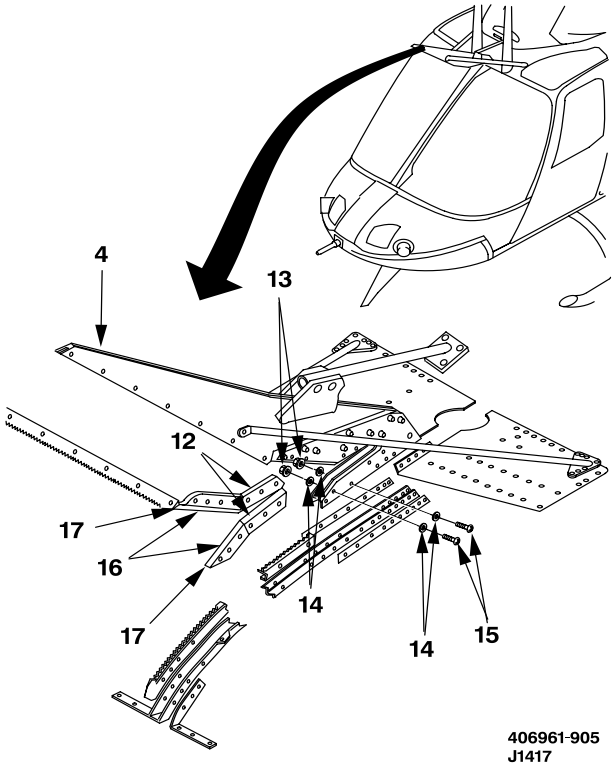
d. Apply sealing compound (D184) to guide blades (16), cutter blades (12), and shims (17) and place components in deflector (4) with shims in same position removed from.

e. Install 12 bolts (15), 24 washers (14) and 12 nuts (13). Check gap at aft junction of cutter blades. Maximum gap allowable is **0.020 inch**.

f. Prime repaired area with epoxy primer coating (D98) (TM 55-1500-345-23).

g. Apply aliphatic polyurethane top coating (D150) to primed areas (TM 55-1500-345-23).

h. Repair damaged or missing rubber coating with a thin coat of sealing compound (D184).



INSPECT

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12. Repair struts (3) as follows:

a. Repair deteriorated paint and superficial scratches (TM 55-1500-345-23).

b. Clean and treat light corrosion (TM 1-1500-344-23).

c. Remove and replace struts (3) (Task 2-2-62).

INSPECT

13. Repair doublers (5) as follows:

a. Paint deterioration and superficial paint scratches (TM 55-1500-345-23).

b. Clean and treat light corrosion (TM 1-1500-344-23).

Sanding Operations

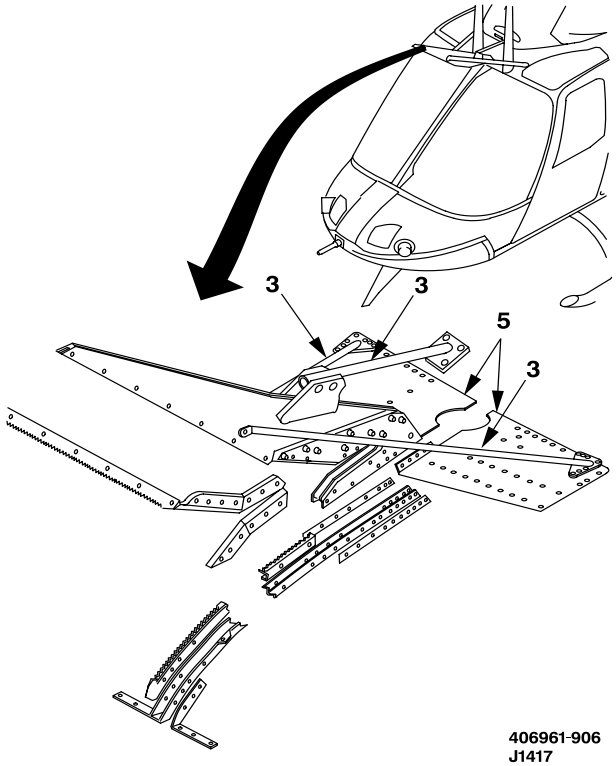
c. Using 240 grit sandpaper (D173) polish out scratches to a maximum depth of **0.006 inch**.

INSPECT

d. Prime sanded surface with epoxy primer coating (D98) (TM 55-1500-345-23).

e. Apply aliphatic polyurethane top coating (D150) to primed surfaces (TM 55-1500-345-23).

INSPECT



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14. Replace doublers (5) as follows:

a. Remove struts (3) (Task 2-2-62).

b. Remove 5 nuts (18), 10 washers (19), and 5 bolts (20).

c. Remove right and left upper soundproofing blankets.

d. Cover windshield and overhead windows with suitable material to prevent damage. Mask edges.

e. Remove FM homing antennas (TM 11-1520-248-23). Mask mounting holes.

f. Cover back of circuit breaker panel to prevent metal particles from entering electrical area. Mask over cable access holes to instrument panel and the ram air inlet grill.

Drilling Operations

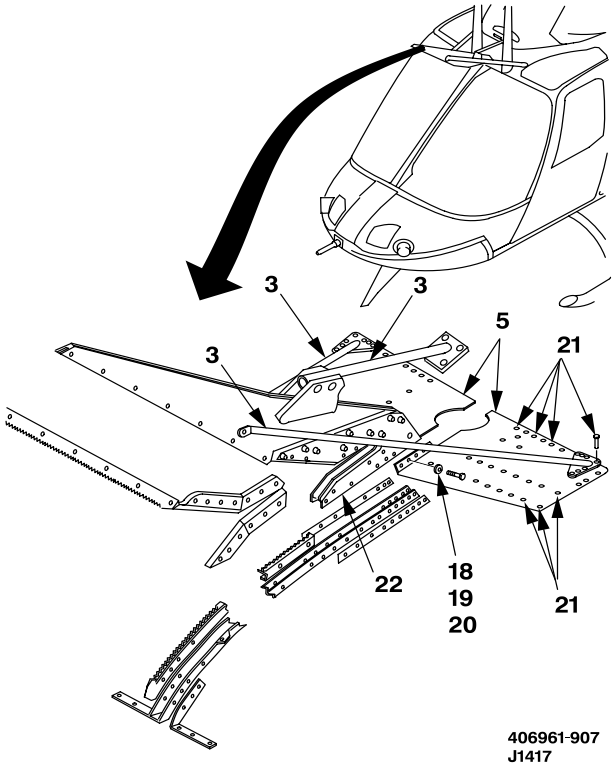
CAUTION

To prevent damaging electrical wiring, care must be taken when drilling out rivets.

g. Remove rivets (21) attaching doublers (5) to airframe.

h. Position doubler (5) so that flanges cover bolt holes in cutter cheek plates (22). Ensure that edge distance is maintained.

i. Trim the doubler flanges as required to match cutter assembly and to clear FM homing antenna base.



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Drilling Operations

j. Position one doubler (5), and holding firmly in place, drill the forward hole through the doubler flange by back drilling through cutter cheek plates (22). Repeat for other doubler.

k. Secure doublers (5) in place with one bolt (20) and nut (18).

l. From inside crew compartment, locate and mark the FM homing antenna cable access holes. Locate all other rivet holes with a hole finder and drill.

m. Remove one doubler (5) and hold the other doubler (5) firmly in position with Clecos. Drill the remaining holes in double flange by back drilling through cutter cheek plates (22). Repeat for other doubler.

n. Remove the doublers. Cut and dress the antenna cable access hole and enlarge the antenna mounting bolt holes.

Sealing Compound

o. Apply sealing compound (D184) to base of doublers and position using Cleco fasteners.

p. Install 5 bolts (20), 10 washers (19), and 5 nuts (18). Torque nuts (18) **12 TO 15 INCH-POUNDS**.

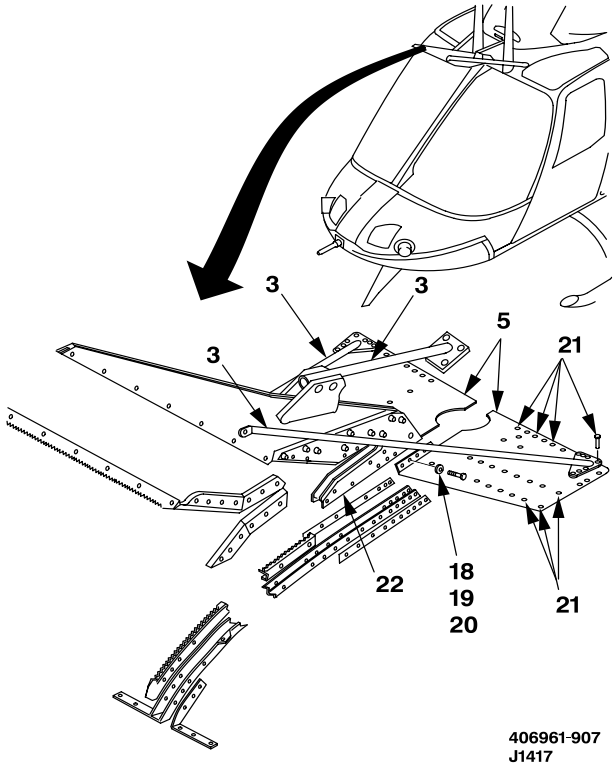
q. Install rivets (21) securing doublers (5) to airframe.

Acetone

r. Clean excess sealing compound from doublers with acetone (D2).

s. Install FM homing antennas (TM 11-1520-248-23).

t. Install struts (3) (Task 2-2-62).



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u. Prime repaired area with epoxy primer coating (D98) (TM 55-1500-345-23).

v. Apply aliphatic polyurethane top coating (D150) to primed areas (Task 2-2-65).

w. Install right and left upper sound proofing blankets.

x. Remove all covers and masking that was installed and clean crew area.

INSPECT

15. Repair windshield deflector assembly (6) as follows:

a. Replace sawtooth insert (8) (Task 2-2-62).

Sanding Operations

b. Polish out nicks, scratches, and gouges in channel (7), clips (9), and sawtooth insert (8) not exceeding **0.010 inch** depth with 240 grit sandpaper (D173).

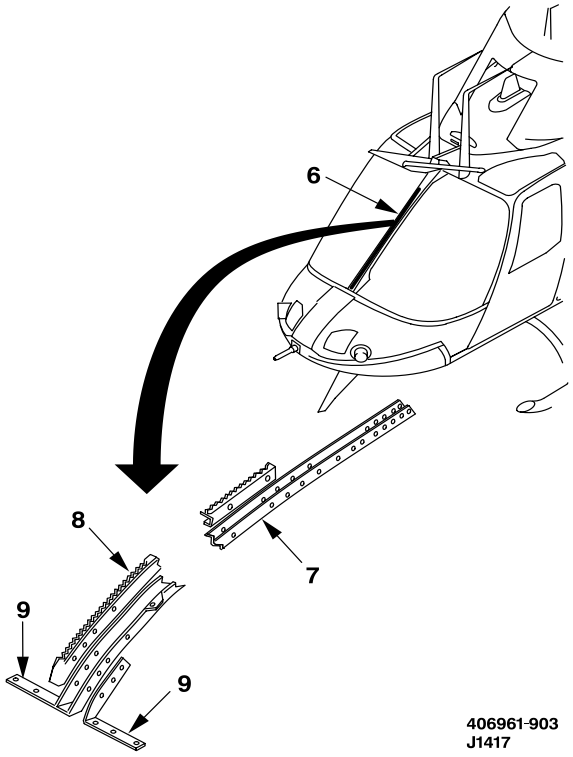
Sealing Compound

c. Replace missing rubber coating on sawtooth insert (8) with sealing compound (D184).

d. Prime repaired areas with epoxy primer coating (D98) (TM 55-1500-345-23).

e. Apply aliphatic polyurethane top coating (D150) to primed areas (TM 55-1500-345-23).

INSPECT



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16. Replace channel (7) and clips (9) as follows:

a. Remove upper wire cutter assembly (Task 2-2-62).

b. Remove windshield deflector sawtooth blade insert (Task 2-2-62).

c. Cover windshield and overhead windows to prevent damage.

d. Remove all cable clamps from wire bundles on windshield center post and the forward clamp on the circuit breaker panel. Lower bundles as far as possible without disconnecting.

e. Cover back of circuit breaker panel to prevent metal particles from entering electrical area. Use tape (D216) to mask cable access holes to instrument panel and ram air inlet grill.

Drilling Operations

f. Remove rivet (23) at lower end and rivets (24) at upper end of channel (7).

g. Remove nuts (25), washers (26), and screws (27) attaching channel (7) to airframe.

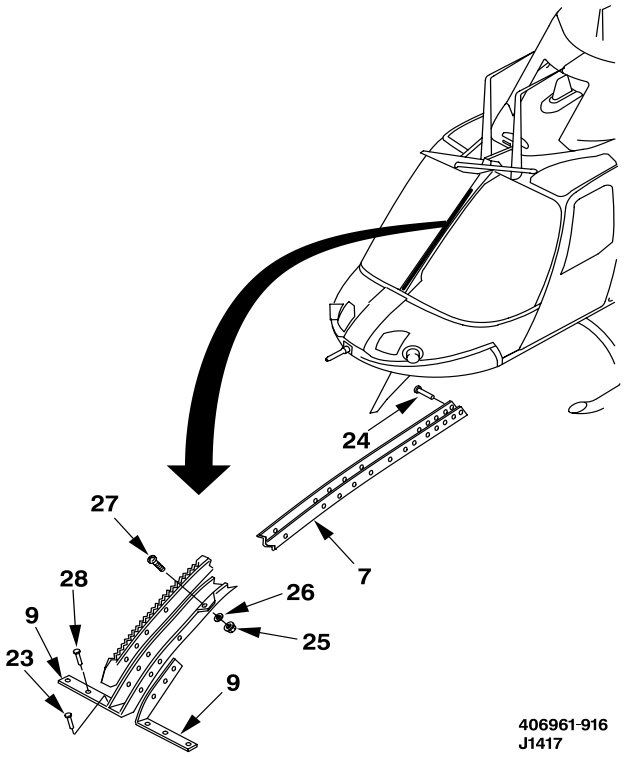
h. Remove three each rivets (28) attaching two clips (9). Remove clips (9).

Acetone

i. Clean sealing compound from airframe, channel (7), and clips (9) using acetone (D2).

j. Using a work aid template (H-204) and a hole finder, locate and drill the lower 12 holes in the windshield center post through the template.

k. Position template (H-203) onto channel (7) and transfer holes from the template to the channel (7).



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Drilling Operations

l. Place channel (7) on the windshield center post and secure with Cleco fasteners. Assure that channel (7) is centrally located. Back drill the remaining holes in channel (7).

m. Countersink holes to accommodate retaining screws (27).

n. Locate existing hole at lower end of channel (7). Countersink for NAS rivet.

o. Locate two existing holes at upper end of channel. Countersink for NAS rivet.

p. Remove the channel (7), deburr, and clean out all metal particles.

q. Reposition channel (7) using screws (27) as temporary dowel pins. Trim lower end of channel (7) to clear ram air inlet grill.

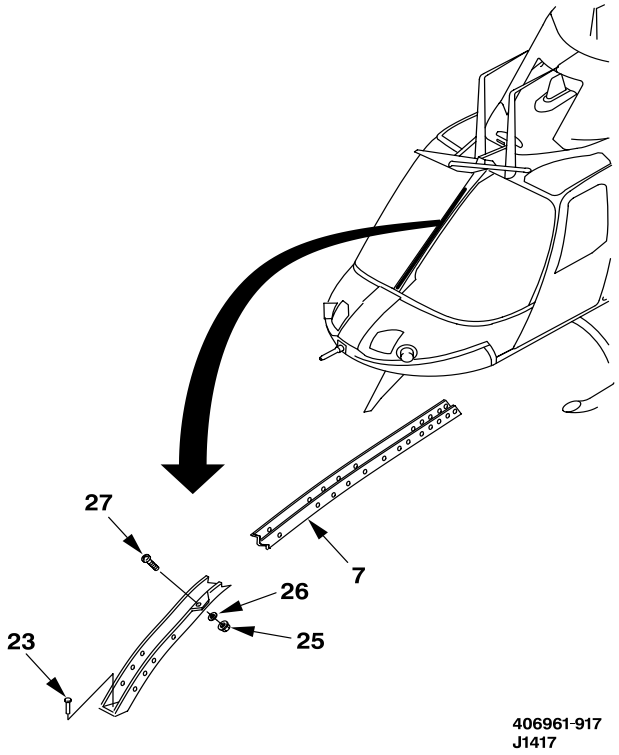
r. Trim upper end at channel to match cutter assembly/doubler as required.

Sealing Compound

s. Apply a bead of sealing compound (D184) to channel (7) along its entire mounting surface.

NOTE

Windshield retainer shall be examined for signs of separation from the windshields. If separation exists, retainer shall be removed and resealed using sealing compound (D184). Sealant shall be allowed to cure until tack free.



t. Install channel (7) using screws (27), washers (26), and nuts (25). Start at lower end of channel (7) and move up.

u. Apply sealing compound (D184) to head of rivet (23) and install in lower end of channel (7) in accordance with TM 1-1500-204-23.

GO TO NEXT PAGE

v. Apply sealing compound (D184) to head of rivets (24) and install in upper end of channel (7) in accordance with TM 1-1500-204-23.

Drilling Operations

w. Position clips (9) firmly against channel (7), use a hole finder to locate the six lower windshield retaining strip rivet positions and drill through.

x. Remove, clean, and Cleco one clip into position and locate the three holes in channel (7).

y. Remove and drill through. Repeat for other clip (9).

z. Apply sealing compound (D184) to clips (9) mounting surfaces and install with three rivets (28).

Acetone

aa. Clean excess sealing compound with acetone (D2).

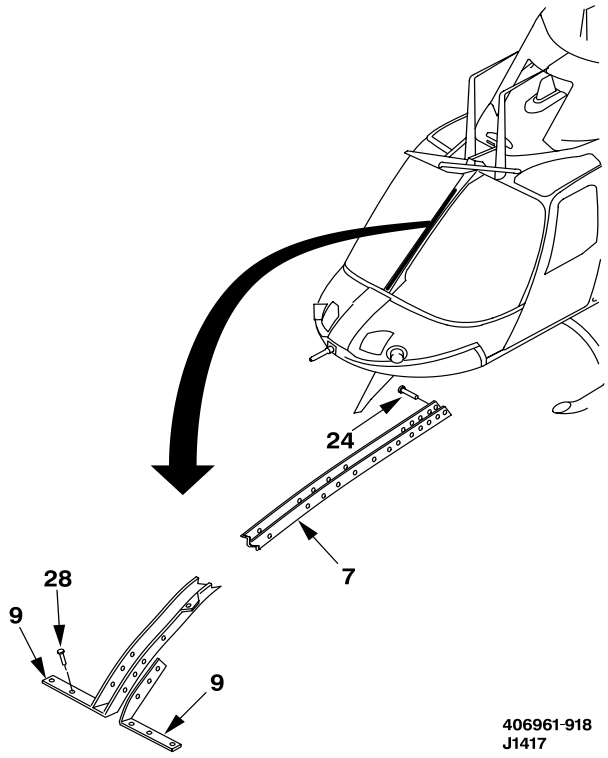
ab. Install upper wire cutter assembly (Task 2-2-62).

ac. Install windshield deflector sawtooth blade (Task 2-2-62).

ad. Prime repaired areas with epoxy primer coating (D98) (TM 55-1500-345-23).

ae. Apply polyurethane top coating (D150) to primed areas (Task 2-2-65).

af. Position wire bundles in center post and install clamps. Remove all coverings in helicopter interior to remove all metal particles.



INSPECT

END OF TASK

2-2-64. COPPER FILLED POLYURETHANE CONDUCTIVE COATINGS (AVIM) — USE

This task covers: Preparation and Application of Copper Filled Polyurethane Conductive Coatings

INITIAL SETUP

Applicable Configurations:
All

Tools:
Ohmmeter (B99)
Paint Spray Gun (B61)
Zahn No. 2 Viscosimeter (B210)

Material:
Epoxy Primer Coating (D98)
Copper Filled Polyurethane Conductive Coating (D71)
Masking Tape (D216)
Aliphatic Naphtha (D141)
Sandpaper (D175)
Rubber Gloves (D111)
Aliphatic Polyurethane Coating Thinner (D222)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

GO TO NEXT PAGE

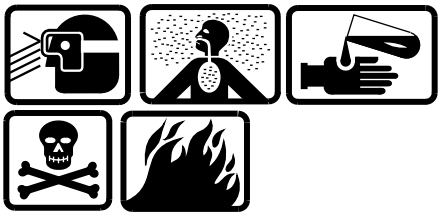
2-2-64. COPPER FILLED POLYURETHANE CONDUCTIVE COATINGS (AVIM) — USE (CONT)

GENERAL INFORMATION

1. Copper filled polyurethane conductive coating (D71) is intended for use as a lightning strike protective coating and a static charge bleedoff coating on composite parts.

2. Copper filled polyurethane conductive coating (D71) shall be applied to a properly prepared and primed surface, and overcoated with compatible finish for protection.

SURFACE PREPARATION



Epoxy Primer Coating

3. Clean surfaces and apply epoxy primer coating (D98) (TM 55-1500-345-23).

APPLICATION OF COPPER FILLED POLYURETHANE CONDUCTIVE COATING

NOTE

Copper filled polyurethane conductive coating (D71) is a two-component material supplied in kit form, and shall be applied within 1 to 4 hours after primer has been applied.

4. Allow materials to reach room temperature (65° to 95°F) and mix catalyst with base in accordance with manufacturer's instructions.

Thinner

5. Ensure that viscosity of copper filled polyurethane conductive coating (D71) after mixing is 16 ± 2 seconds using a Zahn No. 2 cup (B210). If viscosity is not correct, thin with aliphatic polyurethane coating thinner (D222) or add copper filled polyurethane conductive coating (D71) to obtain the right viscosity as stated above.

6. Mask areas not to be sprayed using masking tape (D216).

CAUTION

To prevent copper from settling to bottom of containers and spray equipment, material shall be agitated repeatedly during spraying. If copper settles, then intercoat adhesion failure can result.

7. Adjust spray equipment and control the rate of stroke. Apply one wet cross coat of copper filled polyurethane coating to provide a dry film coating.

NOTE

When more than one **0.001 inch** coat of copper filled polyurethane coating is required, drying time between coats is 20 minutes minimum and 24 hours maximum.

8. Apply subsequent coats of copper filled polyurethane coating (D71) using spray strokes in a cross pattern to previous coat.

9. After drying for 1 hour, check final coat of copper filled polyurethane conductive coating for runs, sags, streaks, blisters, lifting, or other defects.

APPLICATION OF OVERCOATING

NOTE

Overcoating of copper filled polyurethane conductive coating shall be accomplished after 1 hour minimum and 24 hour maximum curing time.

10. Using compatible polyurethane protective top coating, apply overcoating to copper filled polyurethane conductive coating (D71). Refer to Task 2-2-65 for application of protective coating.

GO TO NEXT PAGE

2-2-64. COPPER FILLED POLYURETHANE CONDUCTIVE COATINGS (AVIM) — USE (CONT)

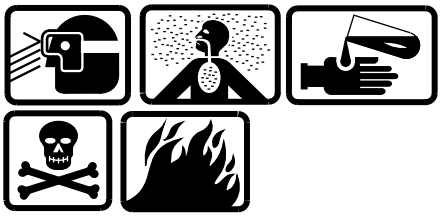
INSPECT

11. After minimum 2 hour cure time, conduct a resistance test of copper filled polyurethane conductive coating (D71) using an ohmmeter (B99). Use care not to damage coating, since 2 hours do not constitute full cure. Resistance shall not exceed 2 ohms when tested point to point **1 inch** apart on the copper filled polyurethane coating. Resistance of 2 ohms or less concludes that desired conductivity of coating has been achieved.

NOTE

Failure of resistivity test indicates that copper content of copper filled polyurethane conductive coating was insufficient or too few coats have been applied.

12. After minimum 72 hour cure time, apply **1 inch** wide strip of masking tape (D216) to a selected area. Press tape onto surface with firm finger pressure. Grasp end of tape and, while holding at approximately 90 degrees from surface, remove tape with one abrupt motion. Loss of adhesion shall result in further adhesion tests at random of the entire copper filled polyurethane conductive coating area.



Naphtha/Naphthalene, TT-N-97

NOTE

In both following repair and touchup procedures, aliphatic naphtha (D141) shall be used for cleanup of sanding residue.

13. Repair small areas of damage or isolated areas of adhesion loss down to basic structure (below primer) by fairing in with surrounding surfaces using 400 grit sandpaper (D175). The substrate shall be chemically retreated as applicable, reprimed, and one wet cross coat of copper filled polyurethane conductive coating (D71) applied. After minimum 1 hour or maximum 24 hour cure time, apply two coats of applicable overcoating, in accordance with Task 2-2-65.

Sanding Operations

14. Repair small areas of damage or isolated area of adhesion loss down to the primer, or between coats of copper filed polyurethane conductive coating, by fairing in with surrounding surfaces using 400 grit sandpaper (D175). Apply one wet cross coat of copper filled polyurethane conductive coating (D71). After minimum 1 hour or maximum 24 hour cure time, apply two coats of applicable overcoating in accordance with Task 2-2-65.

INSPECT

END OF TASK

2-2-65. ALIPHATIC POLYURETHANE TOP COATINGS (AVIM) — USE

This task covers: Preparation and Application of Aliphatic Polyurethane Top Coatings Conforming to MIL-C-46168

INITIAL SETUP

Applicable Configurations:
All

Tools:
Paint Spray Gun (B99)
Viscosimeter (Zahn No. 2) (B210)

Material:
Epoxy Primer Coating (D98)
Sandpaper (D174), (D175)
Tack Rag (D209)
Low-Lint Cleaning Cloth (D67)
Masking Tape (D216)
Acetone (D2)
Aliphatic Naphtha (D141)
Aliphatic Polyurethane Top Coating (D150)
Aliphatic Polyurethane Coating Thinner (D222)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

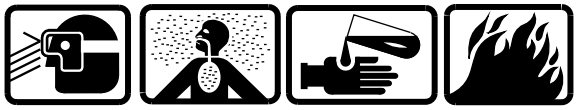
GENERAL INFORMATION

1. Plastic laminates shall not be vapor degreased; they shall be solvent cleaned.

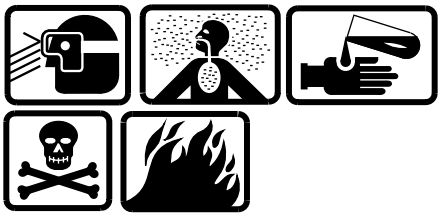
2. Aliphatic polyurethane top coating (D150), also known as chemical agent resistant coating (CARC), is intended for use over epoxy primer coating (D98) to provide surfaces that may be easily and effectively decontaminated after exposure to liquid chemical agents.

3. Successful application of aliphatic polyurethane top coating (D150) depends greatly upon proper application of the epoxy primer coating (D98) undercoating. Apply in accordance with TM 55-1500-345-23.

SURFACE PREPARATION



Acetone



Naphtha/Naphthalene, TT-N-97

4. Clean surfaces with acetone (D2) or aliphatic naphtha (D141), as appropriate, using low-lint cleaning cloth (D67). Wipe dry; do not allow solvent to air dry.

5. Rinse surfaces with clean water, and check for water break-free surface. If flashout of water surface occurs within 25 seconds after flow of water is stopped, repeat cleaning and testing procedure until successful.

6. Wipe surfaces briskly with tack rag (D209).

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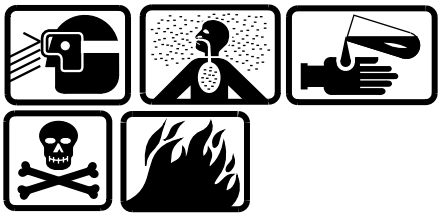
2-2-65. ALIPHATIC POLYURETHANE TOP COATINGS (AVIM) — USE (CONT)

PRIMER APPLICATION



Epoxy Primer Coating

NOTE

Epoxy primer coating (D98) is a two component primer. Only components from the same kit shall be used and shall be mixed in accordance with manufacturers instructions.

7. Add one volume of convert to one volume pigmented resin component and mix thoroughly.

8. Strain mixed primer through a paint strainer.

9. Allow mixed and strained primer to stand at room temperature for 1 hour minimum. Shake or stir mixed primer prior to use.

NOTE

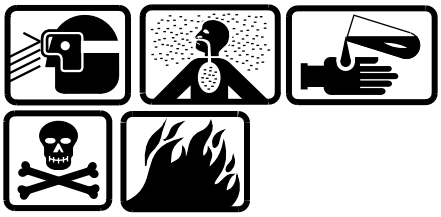
Catalyzed primer shall be discarded if not used within 24 hours after mixing.

10. Adjust spray equipment and control the rate of stroke to apply a film of primer to form a dry film thickness of **0.40 to 0.9 mil**.

NOTE

Primer shall be overcoated in not less than 1 hour and not more than 8 hours. Clean primed surfaces which have cured for longer than 8 but less than 24 hours shall be wiped with tack rag (D209) and given a mist coat of primer prior to overcoating. If primer coat has cured for 24 hours or longer, cleaning, water rinse, and drying procedure must be repeated and a mist coat of primer applied prior to overcoating.

APPLICATION OF ALIPHATIC POLYURETHANE TOP COATING



Polyurethane Coating

Thinner

NOTE

Aliphatic polyurethane chemical agent resistant coating (CARC) is a two-component material supplied in kit form.

11. Mix CARC (D150) base and activator in accordance with manufacturer's instructions. Agitate thoroughly and check viscosity using a Zahn No. 2 viscosimeter (B210). Spray viscosity should be 22 to 24 seconds. Reduce as required with aliphatic polyurethane coating thinner (D222).

12. Drain CARC (D150) mixture and allow to stand at room temperature for one-half hour prior to application.

NOTE

Pot life of mixed CARC is 8 hours.

13. Mask areas not to be sprayed with CARC (D150).

GO TO NEXT PAGE

APPLICATION OF CARC

14. Immediately before spraying, wipe surfaces with tack rag (D209).

15. Adjust fluid delivery to 17 to 20 ounces per minute (for pressure of 55 to 60 psi) at the gun. Shake or stir mixed CARC in spray equipment or containers, then use a controlled rate of stroke to apply a wet film of CARC (D150).

NOTE

For adequate camouflage effectivity, it is necessary to apply two coats of camouflage CARC.

16. Allow a minimum of 30 minutes and maximum of 24 hours between subsequent coats of CARC (D150).

NOTE

A minimum of 8 hours air dry shall be allowed after final coat prior to masking marking. Heat curing at 120 °F ± 10 °F for 2 hours may be used in lieu of air dry, provided a minimum of 1 hour air dry is accomplished prior to heat curing.

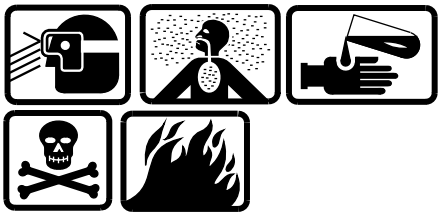
17. After drying, check coating for runs, sags, streaks, blushing, blisters, and lifting. Allow completed CARC (D150) to air dry a minimum of 48 hours. There shall be no loss of CARC adhesion when tested per instructions in step 18. Small areas requiring touchup shall be performed per instructions in step 19. or 20. Large areas requiring repainting due to runs, sags, streaks, blushing, blisters, or lifting shall be performed per instructions in steps 4., 10., and 14.

INSPECT

18. After a minimum 24 hour cure time, apply **1 inch-wide** strip of masking tape (D216) to a selected area. Press tape onto surface with firm finger pressure. Grasp one end of tape, and while holding at approximately 90 degrees from CARC (D150) surface, remove tape with one abrupt motion. Loss of CARC adhesion shall result in further adhesion tests at random of the entire CARC area. If these additional tests indicate generally poor adhesion of CARC, the area shall be stripped to prime or base material and finished per instructions in steps 4., 10., and 14. as applicable. If the additional tests indicate isolated areas of nonadhesion of CARC, the areas shall be refinished per instructions in step 19. or 20.

REPAIR AND TOUCHUP

Sanding Operations



Polyurethane Coating

19. Repair small areas of damage or adhesion loss down to basic structure (below primer coat) by fairing in with surrounding surfaces, using 320, 400 grit sandpaper (D174), (D175). The surface shall be chemically retreated as applicable and reprimed in accordance with previous steps in this task and recoated with CARC (D150).

20. Repair small areas of damage or adhesion loss down to the primer by fairing with surrounding surfaces, using 320, 400 grit sandpaper (D174), (D175). Where CARC (D150) has been removed from primer, the primer shall be reapplied in accordance with previous steps in this task, followed by reapplication of CARC. Where CARC has not been removed or damaged down to the primer, the primer need not be reapplied.

INSPECT

END OF TASK

2-2-66. HEAT RESISTANT ADHESIVE AND STRUCTURAL BONDING (AVIM) — USE

This task covers: Preparation and Application of Adhesive Conforming to MMM-A-132, Type 1, Class 3

INITIAL SETUP

Applicable Configurations:
All

Material:
Sandpaper (D172)
Low-Lint Cleaning Cloth (D67)
Acetone (D2)
Release Agent (D165)
Release Agent (D166)
Rubber Gloves (D111)
White Gloves (D112)
Heat Resistant Adhesive (D19)
4 Mil Glass Thread (D224)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

GENERAL INFORMATION

1. Adhesive (D19) conforming to specification MMM-A-132, Type I, Class 3 is classified as liquid epoxy resin. Adhesives of this type meet requirements of military specifications for continuous service between -67 °F and 180 °F.

2. Materials that may be bonded together or in combinations are metals, plastics, and rubber parts. Silicone materials cannot be bonded successfully with adhesives of this type. Fluorocarbon (Tedlar) may be bonded, but requires special treatment prior to bonding.

SURFACE PREPARATION

Acetone

3. Remove paint and primer from surfaces to be bonded, using acetone (D2).

Sanding Operations

4. Burnish areas to be bonded using 180 grit sandpaper (D172).

Acetone

5. Clean sanded surfaces with acetone (D2) and low-lint cleaning cloth (D67). Wipe dry with clean low-lint cleaning cloth. Do not allow acetone to air dry on surface to be bonded.

PROCEDURE REQUIREMENTS

NOTE

- Bonding shall be done in an area where temperature and humidity are controlled. Temperature shall be maintained between 65 °F and 85 °F and the relative humidity shall not exceed 75 percent.
- If lag time between surface preparation and adhesive (D19) application has been such that bonding surfaces may be contaminated with dust and fingerprints, surfaces shall be recleaned with acetone (D2) and wiped dry with low-lint cleaning cloth (D67).
- Bonding process will not always require use of tool. Tools, if required, will be fiberglass or metal.

Frekote 44-NC

6. If metal tool is used, apply release agent Frekote 44NC (D165) to tool to prevent adhesive bonding to tool.

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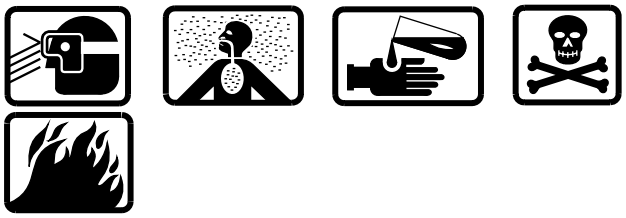
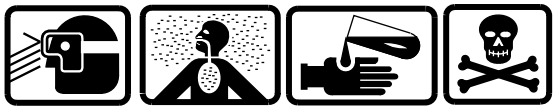


Mono-Coat E150 N-ODS

7. If fiberglass tool is used, apply release agent Mono-coat E150 N-ODS (D166) to tool to protect them from adhesive during curing cycle, and ensure no stress to bonded parts by tool removal.

ADHESIVE APPLICATION



Adhesive

8. Wearing clean white cotton gloves (D112), apply adhesive (D19) to all faying surfaces of parts to be bonded. Adhesive may be applied with wooden applicator, spatula, knife, trowel, pressure gun, potting syringe, or any clean practical applicator for the task.

9. Ensure that adhesive (D19) is applied in smooth, even layer to provide a cured thickness of **3 to 8 mils**. If bonded area exceeds 2 square inches, use **4 mil** glass thread (D224) as a spacer within the bondline to prevent total squeeze out of adhesive. Space threads **1 inch** apart and arrange to support the edge of bond surface, but in no case shall the thread spacer extend within **1/8 inch** of bond edge.

NOTE

Glass threads spacers are not required in bonding rod ends or tubes.

10. If configuration of parts requires injection or fillet application, lower the viscosity of adhesive by heating to 125 °F — 130 °F, and use within 10 minutes.

NOTE

- Thinner or solvent shall not be used to lower viscosity of adhesive.
- Pot life for MMM-A-132, Type I, Class 3 adhesive (D19) is 40 minutes at 75 °F, but parts should be bonded as soon as possible after application of adhesive at ambient temperature. Heated adhesive, however, shall be applied within 10 minutes. Adhesive should be refrigerated to maintain nonsag properties until ready for use.

11. If desired, apply bondline pressure ranging from firm contact to 10 psi pressure. Pressure shall be evenly applied to entire bonded area.

CURING SCHEDULE

12. Apply heat uniformly to bonded area, using oven, or any properly regulated heat source. Apply heat at 320° to 340 °F for 55 to 65 minutes. Start timing after bondline reaches curing temperature.

NOTE

If pressure other than firm contact was applied to bonded parts, bondline pressure shall be maintained after cure until unit has cooled to 150°F or below.

INSPECT

13. Remove part from tool if applicable, using care to avoid unnecessarily stressing part during removal.

14. Check bonded area for voids and defects. No void (unbonded area) larger than **1/2 inch** is permitted. No more than two void areas of any size shall be permitted within a **6 inch** circle when the center of the circle is located at the center of one void area. No edge voids shall be permitted.

15. Perform nondestructive testing of bonded panels by tapping for resonant sounds of voids, and by visual inspection of bond quality. Other inspection methods, such as ultrasonic, vacuum box, or X-ray shall be used as deemed necessary by the Technical Inspector.

INSPECT

END OF TASK

2-2-67. CHEMICAL CONVERSION COATING FOR ALUMINUM — USE

This task covers: Preparation and Application of Chemical Conversion Coatings Conforming to MIL-C-81706

INITIAL SETUP

Applicable Configurations:
All

Material:
Abrasive Mat (D1)
Rubber Gloves (D111)
Wiping Cloth (D164)
Water Soluble Cleaner (D65)
Chemical Conversion Coating (D57), (D58)
Nitric Acid, Technical O-N-350 (D144)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

GENERAL INFORMATION

1. The treatment covered by this specification is chemical conversion coating (D57 or D58) which increases the corrosion resistance of aluminum alloy surfaces and improves the adhesion of organic finish systems to these surfaces. This treatment may also be used on the interior surfaces of tanks, tubing and similar structures where organic finishes are not required or permitted.

2. The "Brush" treatment may be used for touchup of anodic coatings to reestablish corrosion resistance. However, it will not restore the abrasion resistance of a damaged anodic coating. The abrasion resistance of the chemical film is relatively low and the corrosion protective properties can be destroyed by wear and abrasion.

BRUSH PROCEDURE

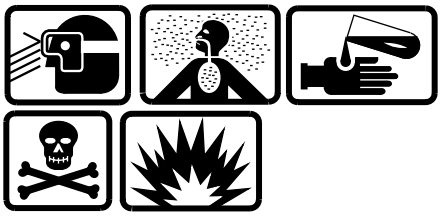
3. Scrub area to be treated using abrasive pad (D1) and a solution of cleaner (D65) mixed 10 percent to 15 percent (volume) in water. Cleaning shall be followed by a thorough water rinsing.

NOTE

When preparing the surface of metal rotor blades or other adhesive bonded assemblies, water soluble cleaner (D65) may be used full strength or diluted as necessary to provide suitable cleaning. The solution shall be rinsed from the surface within 10 minutes after application.

4. Spray a mist of distilled water onto the surface being tested. If the water droplets form a continuous film, the surface shall have passed the test. If the water gathers into distinct droplets within 25 seconds, the surface shall have failed the test and shall be cleaned and retested. Water break may also be tested by observing the rinse operation as indicated.

5. Prepare the brush chemical conversion coating (D57 or D58) as follows:



Nitric Acid

Form II (D58) — (Dry Powder)	3 oz. by weight chemical conversion material and 0.5 fluid oz. of nitric acid (D144) shall be added to one gallon of water. Mix thoroughly prior to use. Store in plastic containers.
Form III (D57) — (Premixed Liquid)	Use in accordance with manufacturer's recommendation.

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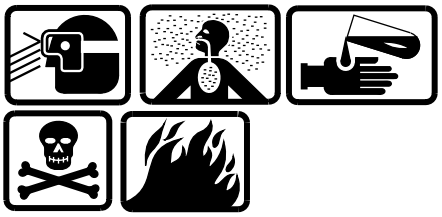


Chemical Conversion Materials

6. Apply chemical conversion coating (D57 or D58) to be as uniform in appearance as is practical. It shall be continuous and free from powdery or loose film areas. The color of the coating shall range from golden iridescent to brown, and it shall be free from breaks, scratches, flaws, and other defects which would reduce the protective value and paint bonding characteristics. Mottled areas and streaks caused by the surface condition of the metal will be allowed. Racking marks are acceptable provided the area does not exceed one square inch.

Compressed Air

7. Allow surfaces to air dry or force dry with compressed air and/or clean, dry cloths (D164).

STRIPPING OLD OR UNSATISFACTORY FINISHES

8. Scrub area to be stripped using water soluble cleaner (D65) mixed 10 percent to 15 percent (volume) in water, and abrasive mat (D1).

9. Rinse thoroughly with water.

10. Ensure that coated parts meet the visual requirements of step 6.

INSPECT

11. Check parts treated with chemical conversion coating (D57 or D58) after drying by rubbing the coated surface lightly with a clean, dry cloth (D164). There shall be no evidence of coating or powder removal.

INSPECT

END OF TASK

2-2-68. FLAME SPRAY COATING (AVIM) — USE

This task covers: Flame Spray Coating (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Flame Spray Gun (B57)

Material:
Aluminum Wire, MIL-W-6712 Type II (D228)
Aliphatic Naphtha (D141)
Sandpaper (D172)
Cheesecloth (D56)
Epoxy Primer Coating (D98)
Acetylene (D3)
Welding Oxygen (D146)
Masking Tape (D216)
Abrasive Pad (D1)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

Sanding Operations

1. Abrade area to be flame sprayed using 180 grit sandpaper (D172) or abrasive pad (D1).

Toluene

2. Clean area with cheesecloth (D56) dampened with naphtha (D141), room temperature. Air dry 3 hours, or force-dry at 120 °F maximum for 45 minutes.

3. Mask all areas not to be primed after flame spraying using masking tape (D216).

4. Apply epoxy primer coating (D98) to areas to be flame sprayed. Drying time for primer shall be not less than 1 hour nor more than 2 hours. Apply in accordance with TM 55-1500-345-23.

FLAME SPRAY

WARNING

To prevent spontaneous combustion, extreme caution shall be used to prevent oxygen from coming in contact with any petroleum product or hydrocarbon compound.

5. Apply aluminum wire (D228) coating using flame spray gun (B57). Establish flow and pressure setting as listed below: (Chart recommended for Metco Gun Model No. 10E.)

Gas	Pressure	Flow
Oxygen (D146)	30 lbs ± 3.0 lbs	44 ± 0.5 CFM
Acetylene (D3)	15 lbs ± 3.0 lbs	40 ± 0.5 CFM
Air	55 to 70 lbs	53 ± 3.0 CFM

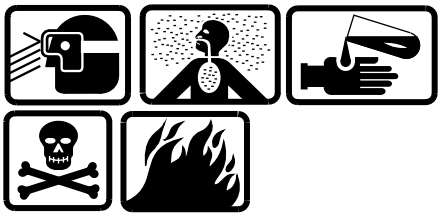
GO TO NEXT PAGE

2-2-68. FLAME SPRAY COATING (AVIM) — USE (CONT)

NOTE

- Compressed air shall be oil and water free. Recommended wire feed 10 ± 1 FT/MIN using **3/32 (0.0938) inch** diameter wire.
- During flame spray operation, the distance of gun to part, speed of movement of gun over surface of part, wire feed rate, and acetylene-oxygen-air flow rates shall be maintained so as not to cause excessive part heat-up and to avoid delamination of part, while depositing a uniform, smooth coating of aluminum of minimal porosity and oxidation.

6. Mask areas not to be primed after flame spraying using masking tape (D216).



Epoxy Primer Coating

7. Apply seal coat of epoxy primer coating (D98) to surface of flame sprayed coating.

INSPECT

END OF TASK

2-2-69. CENTER POST DUCT AND PANELS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Access Door Removed (Task 2-2-6)
Avionics Equipment Removed as Required (TM 11-1520-248-23)

GO TO NEXT PAGE

2-2-69. CENTER POST DUCT AND PANELS — REMOVAL/INSTALLATION (CONT)

REMOVE

CAUTION

To prevent damage to wiring, care must be used when moving harness assemblies.

1. Remove screw (1), washer (2), and clamp assembly (3).

2. Remove screw (4), washer (5), and clamp assembly (6).

3. Remove screw (7), washer (8), and clamp assembly (9).

4. Remove eight screws (10) and eight washers (11).

CAUTION

To prevent damage to wiring, care shall be exercised when duct assembly (12) is removed from helicopter.

NOTE

Wire bundles clamped to surface of duct assembly (12) may be moved as necessary to facilitate removal of duct assembly.

5. Remove duct assembly (12).

6. Remove nine screws (13) and nine washers (14).

7. Remove three nuts (15) and three washers (16).

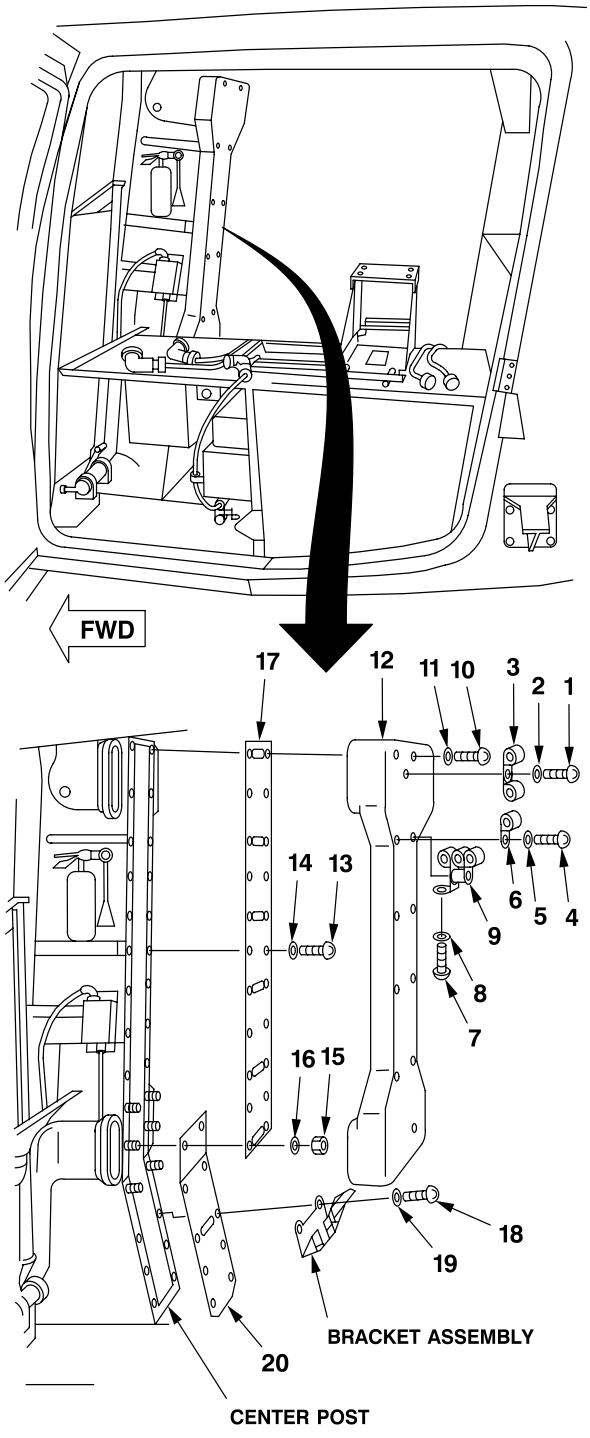
CAUTION

To prevent damage to helicopter, structural panel (17) shall be properly installed before helicopter may be moved or jacked.

8. Remove panel (17).

9. Remove eight screws (18) and eight washers (19).

10. Move bracket assembly and wiring so removal of panel (20) will not be obstructed.



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2-2-69. CENTER POST DUCT AND PANELS — REMOVAL/INSTALLATION (CONT)

CAUTION

To prevent damage to helicopter, structural panel (20) shall be properly installed before helicopter may be moved or jacked.

11. Remove panel (20).

INSTALL

12. Place panel (20) on aft side of center post.

13. Position bracket assembly.

14. Install eight washers (19) and eight screws (18).

15. Place panel (17) on aft side of center post.

16. Install three washers (16) and three nuts (15).

17. Install eight washers (14) and eight screws (13).

18. Place duct assembly (12) on surface of panel (17).

19. Install eight washers (11) and eight screws (10).

20. Position clamp assembly (9) and install washer (8) and screw (7).

21. Position clamp assembly (6) and install washer (5) and screw (4).

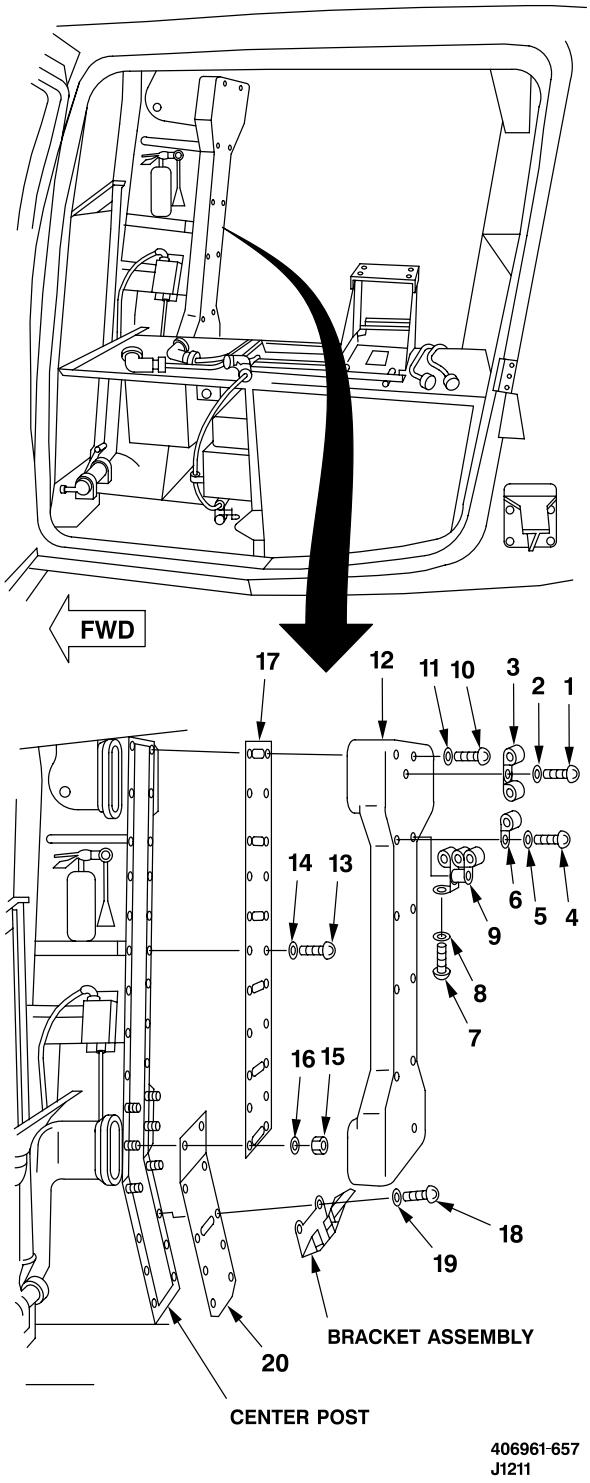
22. Position clamp assembly (3) and install washer (2) and screw (1).

INSPECT

FOLLOW-ON MAINTENANCE

Install avionics equipment (TM 11-1520-248-23).

Install access door (Task 2-2-6).



END OF TASK

2-2-70. CENTER POST DUCT AND PANELS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Sandpaper (D175)
Drycleaning Solvent (D199)
Wiping Rags (D164)
Epoxy Primer Coating (D98)
Black Acrylic Lacquer (D124)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean duct and panel surfaces with drycleaning solvent (D199).

2. Dry duct and panel surfaces with wiping rag (D164).

INSPECT

3. Inspect duct for cracks, holes, and abrasions.

4. Inspect panels for cracks, holes, scratches, distortion, and elongated screw holes.

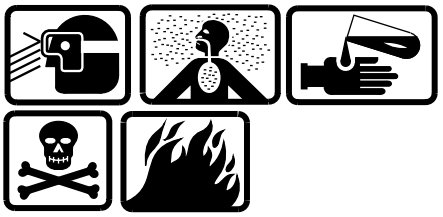
REPAIR

5. Repair cracks or holes in duct and panels in accordance with instructions in TM 1-1500-204-23.

Sanding Operations

6. Remove minor scratches in panels with 400 grit sandpaper (D175).

7. Prime repaired areas which were previously primed with epoxy primer coating (D98) (TM 55-1500-345-23).



Polyurethane Coating

8. Paint repaired areas to match with black acrylic lacquer (D124).

INSPECT

END OF TASK

2-2-71. WINDSHIELD ASSEMBLY — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Plastic Scraper (B123)
Work Aid (H6)

Material:
Masking Tape (D216)
Adhesive (D10)
Cheesecloth (D56)
Naphtha (D141)
Sandpaper (D175)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Upper Wire Cutter Assembly Removed (Task 2-2-62)

GO TO NEXT PAGE

2-2-71. WINDSHIELD ASSEMBLY — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove all cable clamps from wire bundles running down windshield center post and the forward clamp on circuit breaker panel. Lower wire bundles as far as possible without disconnecting.

2. Cover back of circuit breaker panel to prevent metal particles from entering electrical area. Cover cable access holes to instrument panel and ram air inlet grill.

Drilling Operations

3. Remove rivets (1) securing top of channel (2).

4. Remove rivet (3) securing bottom of channel (2).

5. Remove three rivets (4) each securing two clips (5) to airframe.

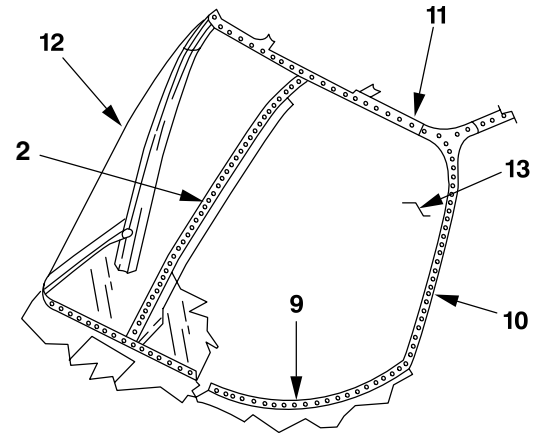
6. Remove nuts (6), washers (7), and screws (8) securing channel (2) to center post.

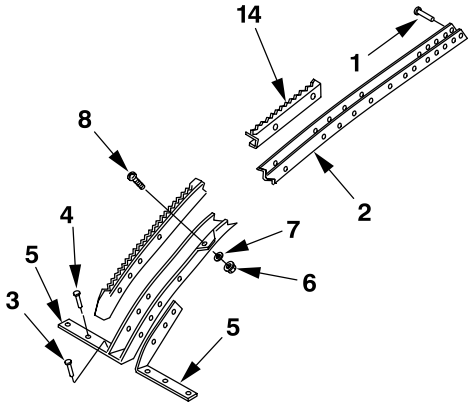
7. Remove windshield deflector sawtooth assembly (14).

8. Remove rivets from retainers (9), (10), and (11). Remove retainers.

9. If right side windshield (12) is replaced, remove free air temperature gauge (Task 8-5-5).

10. Remove right side windshield (12) or left side windshield (13) from supports. Clean all aged adhesive from supports, channel, and retainer strips with a plastic scraper (B123).





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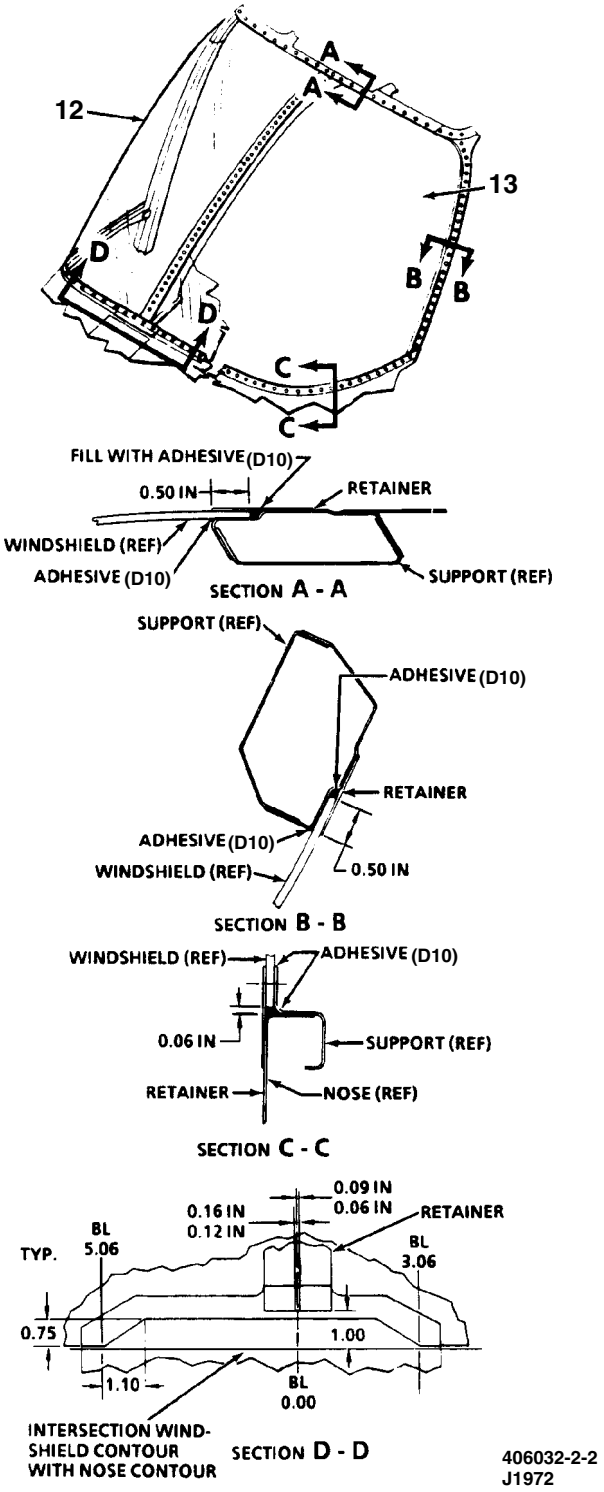
2-2-71. WINDSHIELD ASSEMBLY — REMOVAL/INSTALLATION (CONT)

INSTALL

CAUTION

- To prevent abrasion damage to windshield, windshield (12 or 13) shall be protected during installation. Deformation to retainer strips shall be avoided during installation.
- To prevent ruining windshields, inboard side shall not be trimmed. All other sides shall be trimmed to provide expansion gaps and centering of the windshield as shown in sectional views A-A through D-D.

11. Trim windshield. Ensure clearance with support radius. (See section views A-A through D-D.)



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2-2-71. WINDSHIELD ASSEMBLY — REMOVAL/INSTALLATION (CONT)

12. Place windshield (12 or 13) on supports and check fit and proper expansion gap. Remove windshield.

Sanding Operations

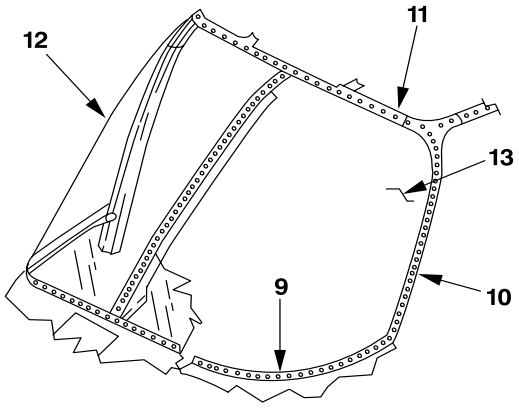
Naphtha/Naphthalene, TT-N-97

13. Lightly abrade mating surfaces of windshield with 400 grit sandpaper (D175). Remove residue with cheesecloth (D56) and naphtha (D141).

Adhesive

14. Apply a thin even coat of adhesive (D10) to mating surfaces of windshield and airframe supports. Position windshield (12 or 13) on supports. Check alignment. Temporarily tape (D216) windshield in place.

15. Fill void areas with adhesive (D10).



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NOTE

Only M7885/2-4 rivets shall be used, except for metal-to-metal splice/joints.

16. Apply a thin even coat of adhesive (D10) to mating surfaces of windshield (12 or 13) and retainers (9, 10, and 11). Remove tape and assemble retainers (9, 10, and 11) to windshield (12 or 13) and secure with suitable metal fasteners in accordance with TM 1-1500-204-23.

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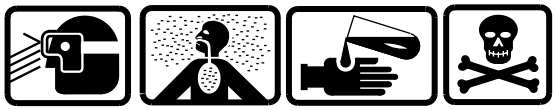
2-2-71. WINDSHIELD ASSEMBLY — REMOVAL/INSTALLATION (CONT)

17. Check retainers (9, 10, and 11) and windshield (12 or 13) for fit and alignment.



Adhesive

18. Apply bead of adhesive (D10) to channel (2). Place channel (2) on windshield center post.

19. Start at lower end of channel (2) and install screws (8), washers (7), and nuts (6).

20. Position windshield deflector sawtooth assembly (14).

21. Apply adhesive (D10) to head of rivet (3) and install rivet (3) (TM 1-1500-204-23).

22. Apply adhesive (D10) to heads of rivets (1) and using work aid (H203) install rivets (1) (TM 1-1500-204-23).

23. Apply adhesive (D10) to mounting surfaces of clips (5) and install using three rivets (4) each (TM 1-1500-204-23).

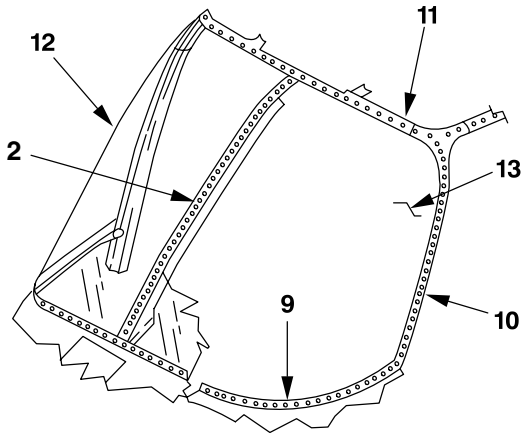
24. Remove adhesive squeeze-out with a plastic scraper (B123).

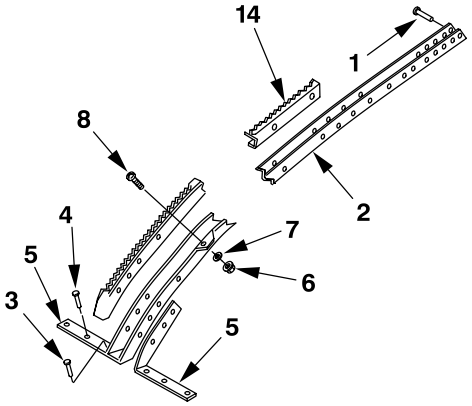
25. Install free air temperature gauge if right side windshield (12) was installed (Task 8-5-5).

26. Place wire bundles in windshield center post and install clamps.

27. Remove covers from circuit breaker panel, cable access holes, and ram air inlet grills.

28. Clean all metal particles from inside of helicopter.





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INSPECT

FOLLOW-ON MAINTENANCE

Install upper wire cutter (Task 2-2-62).

END OF TASK

2-2-72. WINDSHIELD ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Cheesecloth (D56)
Polishing Compound (D154)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

NOTE

These procedures are applicable to all windshield assemblies, including those that are scratch resistant.

CLEAN

1. Clean windshield (Task 1-4-11).

INSPECT

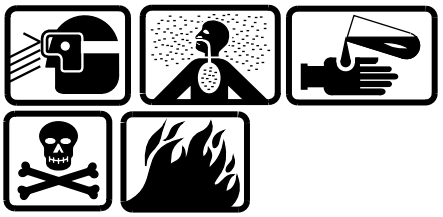
NOTE

Scratches, abrasions, and pitting in areas A and B are acceptable within limits of **0.010 inch** in depth.

2. Inspect windshield for abrasions, scratches, holes, cracks, and pitting. See figure Inspection Criteria — Windshield Assembly.

3. Inspect integrity of adhesive around edges of windshield supports.

REPAIR



Plastic Polish Compound

4. Using cheesecloth (D56) and polishing compound (D154), polish out scratches, abrasions, and pits that do not exceed limits.

5. Replace windshield if any cracks, holes, or distortion are present.

INSPECT

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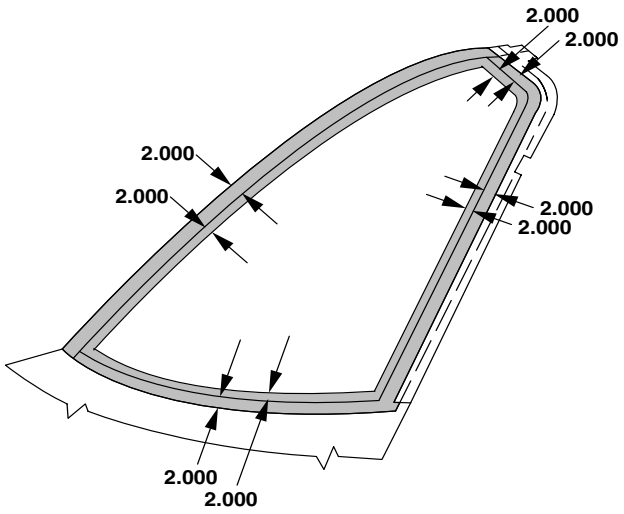
2-2-72. WINDSHIELD ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)



WINDSHIELDS

NOTE: All dimensions are in inches.

AREA A

Scratches and pits may be polished out to the extent that vision is not distorted. Distortion of vision is cause for replacement. Cracks, holes, or other damage may be temporarily repaired, if vision of crew members is not impaired, by stop drilling, patching, or other approved methods (TM 1-1500-204-23). Windows must be replaced at the earliest opportunity.

AREA B

Scratches and pits are permitted in this area provided they are not so numerous or form such a pattern as to be objectionable to the viewer. Cracks, holes, or other damage may be temporarily repaired by stop drilling, patching or other approved methods (TM 1-1500-204-23). Windows must be replaced at the earliest opportunity.

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Inspection Criteria — Windshield Assembly

END OF TASK

2-2-73. DOORFRAME/WINDSHIELD FRAME ASSEMBLY — REPAIR

This task covers: Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Hand Blind Riveter (B117)

Material:
Sandpaper (D176), (D172)
Epoxy Repair Kit (S1607-7021)
Adhesive (D10)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

Equipment Condition:
Windshield Removed (Task 2-2-71)
Cabin Roof Skylight Removed (Task 2-2-74)
Crew Door Jettison Mechanism Removed (Task 2-2-11)
Crew Door Removed (Task 2-2-10)
Copilot Seat or Copilot Seat Pan Assembly Removed (Task 2-2-33 or Task 2-2-34)
Armor Panel Under Copilot Seat Removed (Task 2-2-40)
Windshield Defog Nozzle and Outlet Duct On Copilot Side Removed (Task 12-1-12)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

Compressed Air

REPAIR

NOTE

- Repair of left and right doorframe is identical except for the doubler on the left doorframe. For this repair, only the left doorframe assembly is shown.
- Doorframes do not have to be damaged to install nutplates and nutstrips.
- Only M7885/2-4 rivets will be used except for metal-to-metal splices.
- Rivets shall not be removed from left B.L. 9.00 to right B.L. 9.00 (upper wire strike area). Skylight retainer shall be cut to follow contour of doubler.
- Hand Blind Riveter (B117) shall be used for all blind rivets.

1. Prepare doorframe for repair as follows:

Sanding Operations

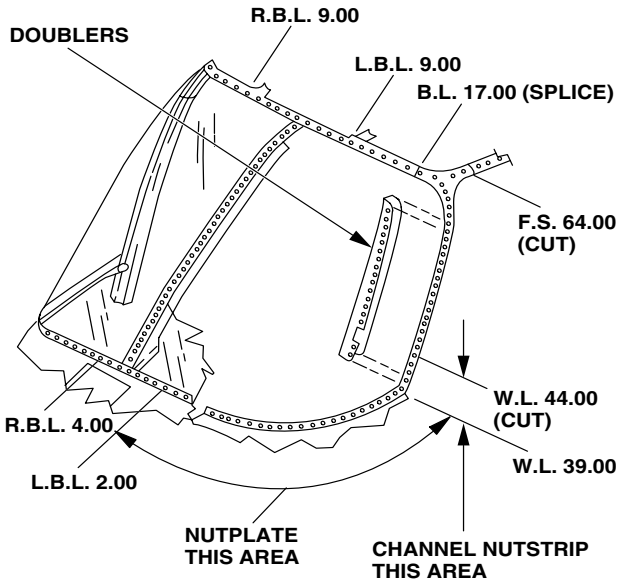
a. Remove doublers P/N 206-031-112-129/-135 from left doorframe. Remove blind rivet lockrings by grinding or filing rivet heads and removing rivets.

b. Cut door seal as required.

2. Remove fiberglass doorframe section as follows:

Drilling Operations

a. Remove rivets at B.L. 17.00 splice.



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J2142

b. Remove door upper pivot point.

c. Insert a piece of scrap metal between fiberglass section and metal doorframe.

CAUTION

To prevent damage to metal doorframe, extreme care shall be used when cutting fiberglass section.

Sanding Operations

d. Using a hacksaw, cut fiberglass doorframe section at W.L. 44.00 and F.S. 64.00. Remove fiberglass section. Use 80 to 180 grit sandpaper (D172 or D176) to polish out scratches or nicks.

GO TO NEXT PAGE

2-2-73. DOORFRAME/WINDSHIELD FRAME ASSEMBLY — REPAIR (CONT)

e. Install nutplates on bottom of windshield frame from L.B.L. 2.00, W.L. 44.00, F.S. 19.00 to F.S. 46.00, W.L. 39.00, L.B.L. 25.00, and R.B.L. 4.00, W.L. 44.00, F.S. 46.00, W.L. 39.00, R.B.L. 25.00 as follows:

Drilling Operations

(1) Enlarge existing rivet holes to match nutplate hole.

(2) Drill and countersink nutplate mounting holes.

(3) Install nutplates with CCR264SS-3-X rivets.

(4) Install nutplates to match wire strike angle clips from R.B.L. 4.00 to L.B.L. 2.00.

(5) Position channel nutstrip in center of section of frame at W.L. 39.00 to W.L. 44.00 and F.S. 46.00 and B.L. 25.00. Mark and cut.

(6) Hold channel nutstrip in place with C-clamp and drill rivet attach holes using No. 40 drill bit. Drill holes equal distance. Remove channel nutstrip and countersink attach holes.

(7) Enlarge existing rivet holes (approximately every other hole) to match nutplate hole.

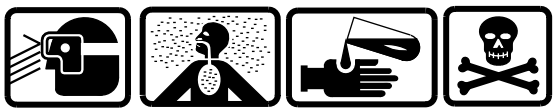
(8) Slide channel nutstrip in section of frame and install with CCR264SS-3-X rivets.

3. Install channel nutstrip and nutplates on removed fiberglass section as follows:

a. Clean removed fiberglass section.

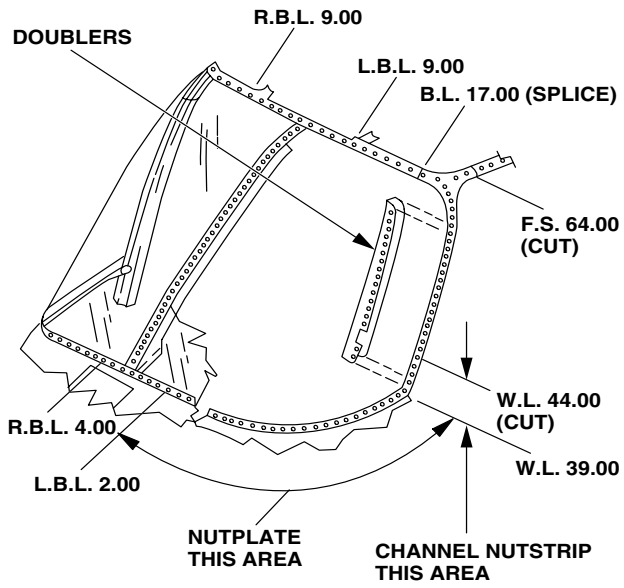
b. Inspect removed fiberglass section.

c. Repair any damage to fiberglass section (TM 1-1500-204-23).



Adhesive

d. Fill rivet holes with epoxy (D15).



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e. Position channel nutstrip in center of section of frame. Mark and cut.

f. Hold channel nutstrip in place with C-clamp and drill mounting rivet holes using No. 40 drill bit. Drill holes approximately every **6.0 inches**. Countersink mounting holes.

g. Drill holes to match channel strip.

h. Slide channel nutstrip in section of frame and install with CCR264SS-3-X rivets.

i. Install nutplates on curvature areas as follows:

(1) Enlarge every other existing rivet hole to accept nutplates.

(2) Drill and countersink nutplate mounting holes.

(3) Install nutplates using CCR264SS-3-X rivets.

j. Inspect metal doorframe for damage. If repair is required, refer to TM 1-1500-204-23.

GO TO NEXT PAGE

k. Install channel nutstrip on fiberglass frame section as follows:

(1) Position channel nutstrip in center section of frame at B.L. 9.00 to B.L. 17.00, F.S. 55.00 and W.L. 71.00. Mark and cut.

Drilling Operations

(2) Hold channel nutstrip in place with C-clamp and drill rivet attach holes using No. 40 drill. Drill holes equal distance. Remove channel nutstrip and countersink rivet attach holes.

(3) Using No. 36 drill bit enlarge existing rivet holes (approximately every other hole) to match nutplate hole.

(4) Slide channel nutstrip into section of frame and install with CCR264SS-3-X rivets.

(5) Position channel nutstrip into center section of skylight frame at F.S. 64.00 to F.S. 79.00 at W.L. 71.00 and B.L. 23.00. Mark and cut.

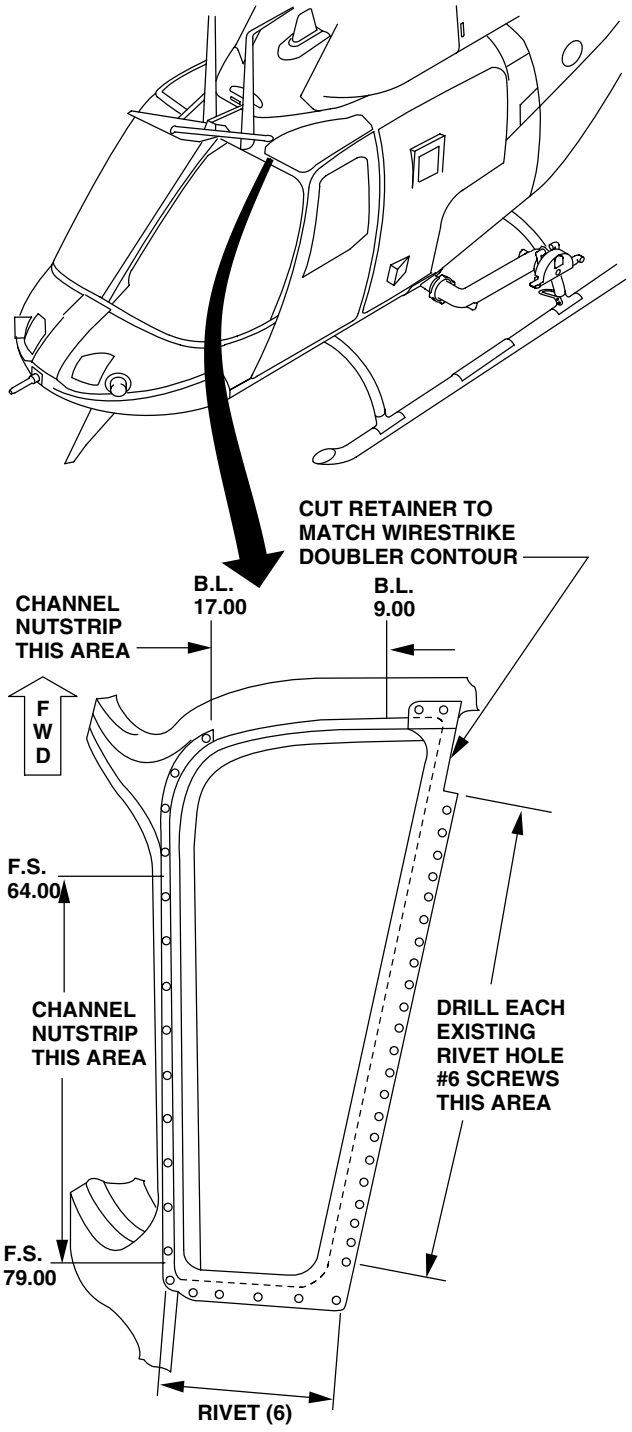
Drilling Operations

(6) Hold channel nutstrip in place with C-clamp and drill rivet attach holes using No. 40 drill bit. Drill holes equal distance. Remove channel nutstrip and countersink attach holes.

(7) Using No. 36 drill bit enlarge existing rivet holes (approximately every other hole) to match nutplate hole.

(8) Slide channel nutstrip into center section of skylight frame and install with CCR264SS-3-X rivets.

(9) On inboard of skylight frame at F.S. 54.00 to F.S. 79.00, use No. 36 drill bit to enlarge every existing rivet hole to accept a No. 6 screw.



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2-2-73. DOORFRAME/WINDSHIELD FRAME ASSEMBLY — REPAIR (CONT)

l. Clean up all repair areas by removing all clippings, filings, and sealant residue.

Epoxy Adhesive

m. Install fiberglass section, doubler, door jettison mechanism, hinge socket and splice where cut. Use Epoxy Repair Kit S1607-7021 for splice.

Adhesive

n. Install skylight and retainer (Task 2-2-74). On inboard area of retainer, install with No. 6 screws, washers, and nuts. Install six rivets at aft end of skylight retainer. Install No. 8 screws where nutplates were installed. Seal all screws with adhesive (D10).

o. Cut retainer to match wire strike doubler.

p. Touch up paint as required (TM 55-1500-345-23).

INSPECT

FOLLOW-ON MAINTENANCE

Install windshield defog nozzle and outlet duct on copilot side (Task 12-1-12).

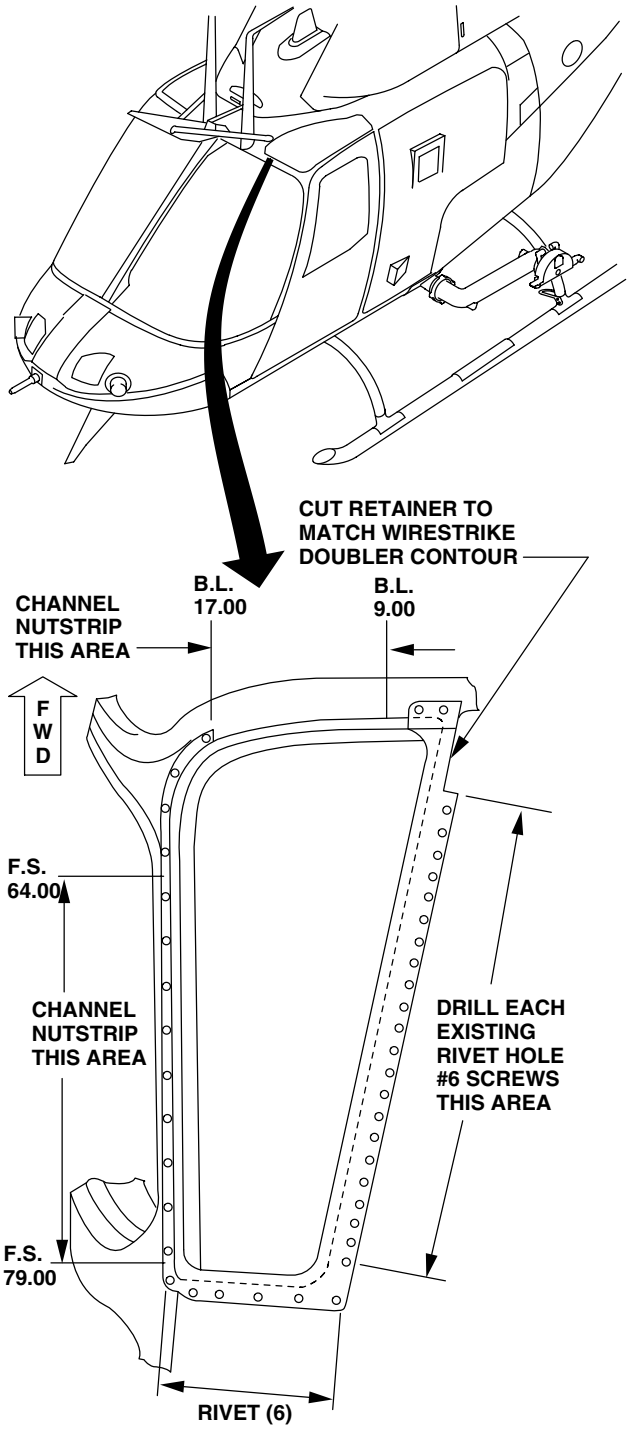
Install armor panel under copilot seat (Task 2-2-40).

Install copilot seat or copilot seat pan assembly (Task 2-2-33 or Task 2-2-34).

Install windshield and retainer (Task 2-2-71).

Install crew door (Task 2-2-10).

Check standby compass compensation (swinging) (TM 1-1500-204-23).



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END OF TASK

2-2-74. CABIN ROOF SKYLIGHT — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Plastic Scraper (B123)

Material:
Adhesive (D10)
Aliphatic Naphtha (D141)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-74. CABIN ROOF SKYLIGHT — REMOVAL/INSTALLATION (CONT)

REMOVE

Compressed Air

1. Remove strut (1) from upper wire cutter (2) (Task 2-2-62).

Drilling Operations

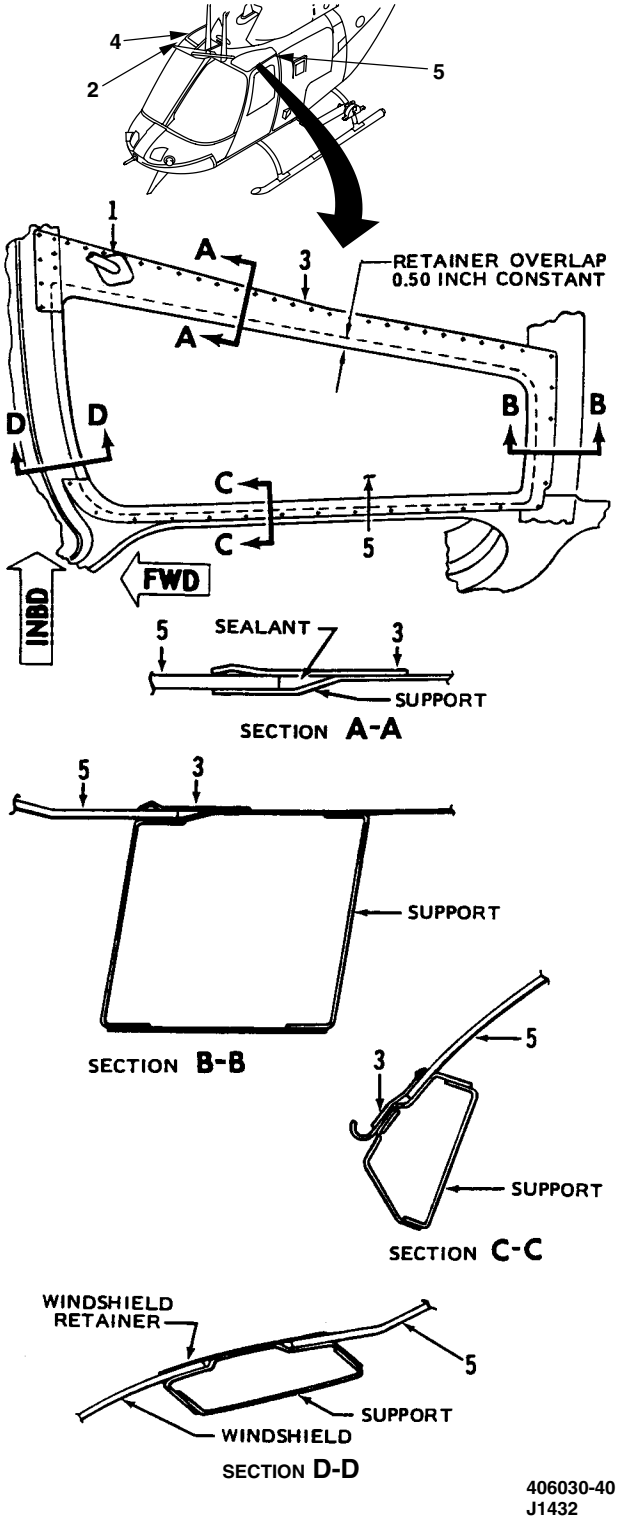
2. Remove rivets securing retainer (3) to airframe supports. Remove rivets securing windshield retainer (section D-D).

Naphtha/Naphthalene, TT-N-97

NOTE

Procedure for replacing skylight on right side is similar to procedure shown for left side.

3. Remove skylight (4) or (5). Remove aged adhesive (D10) from supports and retainer with a plastic scraper (B123). Clean surfaces with naphtha (D141).



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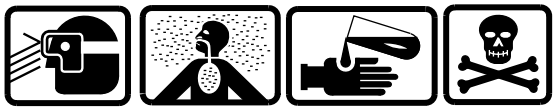
2-2-74. CABIN ROOF SKYLIGHT — REMOVAL/INSTALLATION (CONT)

INSTALL

4. Place skylight (4 or 5) on supports and check fit. Edges shall clear support radius. Trim skylight as required to clear radius and maintain **0.50 inch** overlap of retainers (3). (See sections A-A through D-D.)



Adhesive

5. Apply a thin coat of adhesive (D10) to inboard mating surface of skylight (4 or 5). Place skylight on supports and fill void areas (support radius) with adhesive. Apply a thin coat of adhesive to outboard surface of skylight that mates with retainers (3).

NOTE

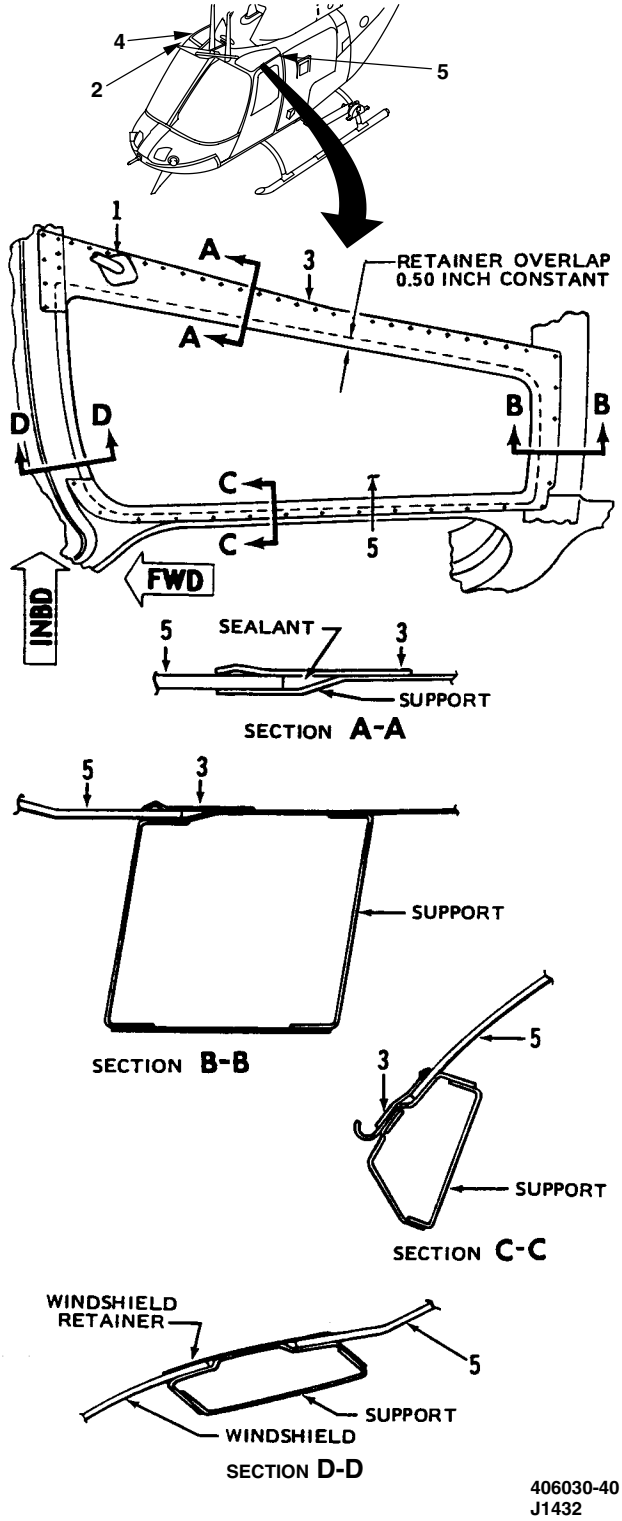
Only M7885/2-4 rivets shall be used, except for metal-to-metal splice/joints

6. Check fit of skylight and install retainers with rivets in accordance with TM 1-1500-204-23.

7. Clean adhesive squeeze-out with a plastic scraper.

8. Install strut (1) on upper wire cutter (2) (Task 2-2-62).

INSPECT



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END OF TASK

2-2-75. CABIN ROOF SKYLIGHT — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Polishing Compound (D154)
Cheesecloth (D56)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-75. CABIN ROOF SKYLIGHT — CLEANING/INSPECTION/REPAIR (CONT)

NOTE

These procedures are applicable to all cabin roof skylights, including those that are scratch resistant.

CLEAN

1. Clean skylight (Task 1-4-11).

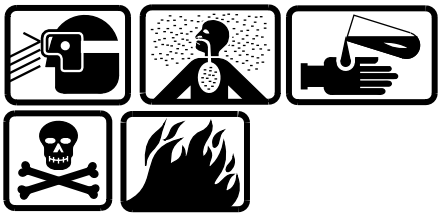
INSPECT

NOTE

Scratches shall not exceed **0.005 inch** depth and shall be less than **2.0 inches** long.

2. Inspect skylight for abrasions, scratches, pits, and cracks.

REPAIR



Plastic Polish Compound

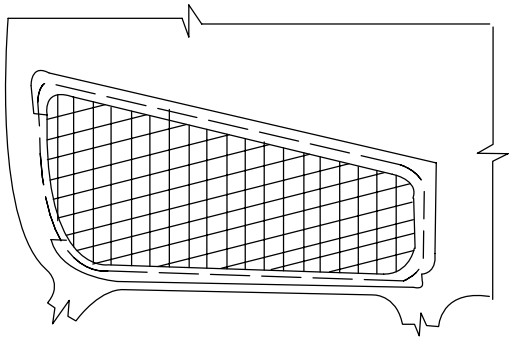
3. Using cheesecloth (D56) and polishing compound (D154), polish out scratches, abrasions, and pits that do not exceed limits.

NOTE

Procedure for replacing skylight on right side is similar to procedure shown for left side.

4. Replace skylight if scratches exceed limits or if vision is distorted by damage or repair (Task 2-2-74).

INSPECT



CABIN ROOF SKYLIGHT

Scratches and pits are permitted in this area provided the structural integrity of the window is not impaired. Cracks, holes, or other damage may be repaired by stop drilling, patching, or other approved methods (TM 1-1500-204-23). Windows need not be replaced providing vision is not impaired and window is waterproof.

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J0859

END OF TASK

2-2-76. LOWER WINDOW — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Plastic Scraper (B123)

Material:
Aliphatic Naphtha (D141)
Adhesive (D184)
Sealant (D180)
Masking Tape (D216)
Silicone Adhesive (D36)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Lower Wire Cutter Removed (Task 2-2-60)
Searchlight Removed (Task 9-5-16)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-76. LOWER WINDOW — REMOVAL/INSTALLATION (CONT)

REMOVE

NOTE

Type of rivets, screws, and washer application shall be noted before removal.

1. Remove seven screws (1) and lower skin panel (2).

Drilling Operations

2. Remove rivets and screws from retainers (3). Remove retainers (3) from airframe.

3. Pull left window (4) down from supports until vent/drain tubes are clear (not shown).

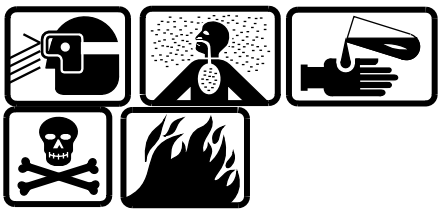
4. Remove aged adhesive from retainers (3) and airframe supports with plastic scraper (B123).

5. Remove plug (5) and doubler (6) from bottom of window (4).

6. Repeat procedure for removal of right window (7).

INSTALL

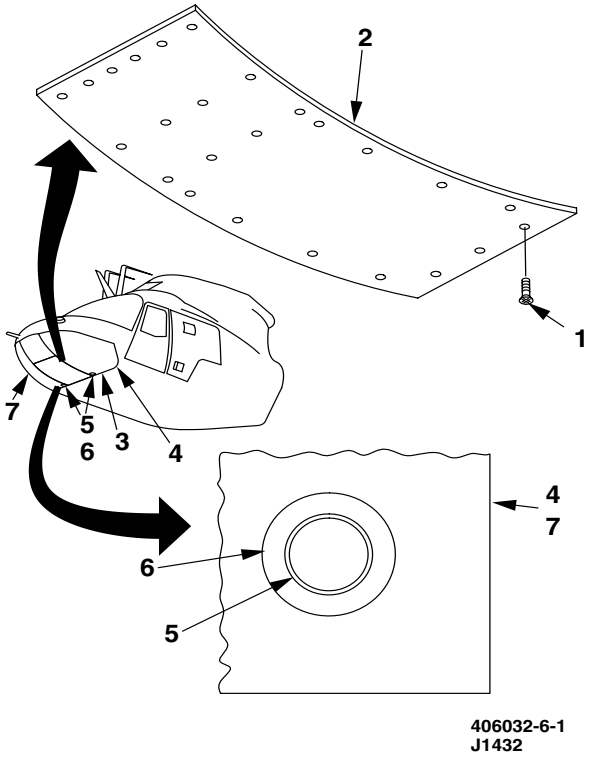
7. Install doubler (6) and plug (5) in lower aft side of window (4) using sealant (D180).



Naphtha/Naphthalene, TT-N-97

8. Clean mating surfaces of retainers (3). window (4), and airframe supports with naphtha (D141).

9. Place left window (4) on supports and check fit. Edge of window should clear support radius by **0.060 inch**. Remove window (4) and trim as required in accordance with TM 1-1500-204-23.



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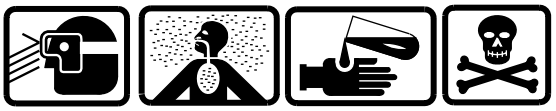
J1432



Adhesive

10. Apply a thin coat of adhesive (D36) to mating surfaces of airframe supports. Install window on supports and check fit. Temporarily secure glass to airframe with tape (D216).

Sealing Compound

11. Apply a thin, even coat of adhesive (D184) to mating surface of retainers (3). Remove tape and place retainers (3) on window (4). Retainers should overlap window by **0.560 inch**. Secure retainers (3) in place with metal fasteners.

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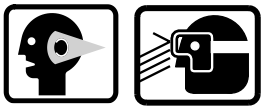
2-2-76. LOWER WINDOW — REMOVAL/INSTALLATION (CONT)

Compressed Air

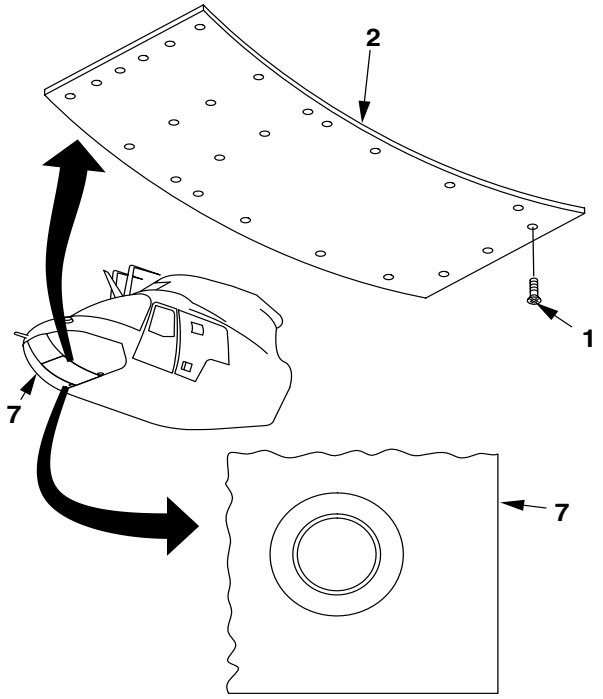


Riveting Operations

12. Rivet retainers in place with type of rivets and rivet/washer combinations in original installation. Install skin panel (2) and seven screws (1).

13. Trim adhesive squeeze-out with plastic scraper (B123).

14. Repeat procedure for installation of right window (7).



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INSPECT

FOLLOW-ON MAINTENANCE

Install lower wire cutter (Task 2-2-60).

Install searchlight (Task 9-5-19).

END OF TASK

2-2-77. LOWER WINDOW — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Polishing Compound (D154)
Cheesecloth (D56)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

NOTE

These procedures are applicable to all lower windows, including those that are scratch resistant.

CLEAN

1. Clean lower windows (1 and 2 in figure Inspection Criteria — Lower Window) (Task 1-4-11).

INSPECT

NOTE

Scratches shall not exceed **0.005 inch** depth and shall be less than **2.0 inches** long. Damage in viewing area C, other than reparable damage, is cause for window replacement.

2. Inspect lower windows (1 and 2 in figure Inspection Criteria — Lower Window) for abrasion, pits, scratches, and cracks. (See viewing areas A, B, and C of same illustration.)

REPAIR

Plastic Polish Compound

3. Using cheesecloth (D56) and polishing compound (D154), polish out scratches, abrasions, and pits that do not exceed limits.

4. Replace window if vision is distorted, cracks or holes are present, or nonreparable damage in area C is present.

INSPECT

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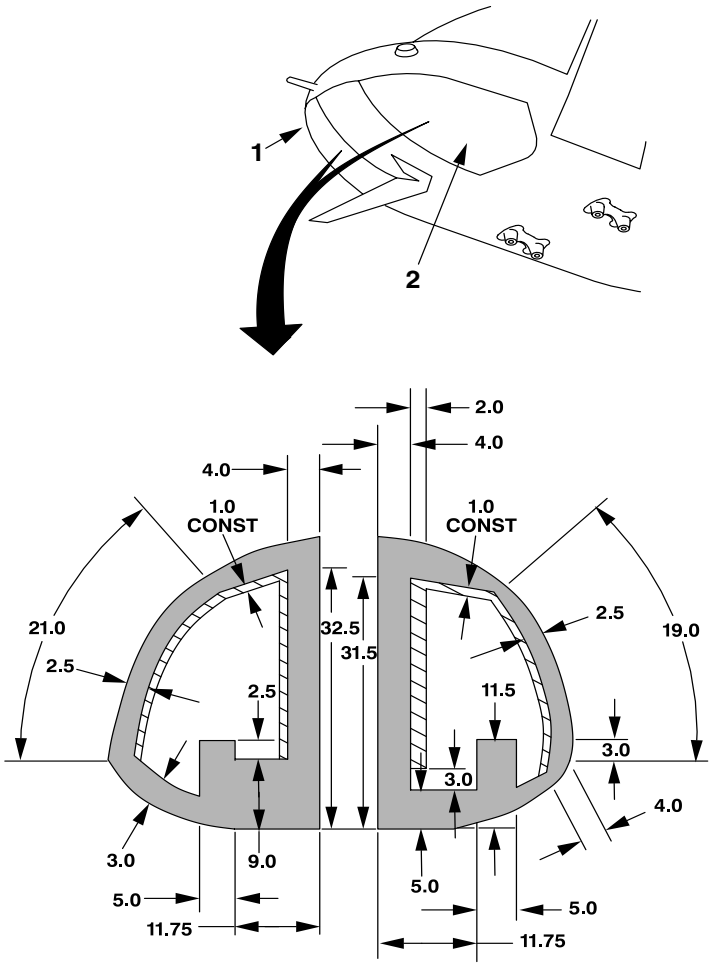

VIEW LOOKING DOWN
ALL DIMENSIONS ARE IN INCHES

AREA A

Scratches and pits may be polished out to the extent that vision is not distorted. Distortion of vision is cause for replacement.

AREA B

Scratches and pits are permitted in this area provided they are not so numerous or form such a pattern as to be objectionable to the viewer.

AREA C

Scratches and pits are permitted in this area, providing the structural integrity of the window is not impaired. Cracks, holes or other damage will not be repaired.

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Inspection Criteria — Lower Window

END OF TASK

2-2-78. MAINTENANCE STEP (LEFT SIDE) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Plastic Scraper (B123)
General Mechanic Tool Kit (B178)
Torque Wrench (B237)

Material:
Acetone (D2)
Abrasive Pads (D1)
Adhesive (D12)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

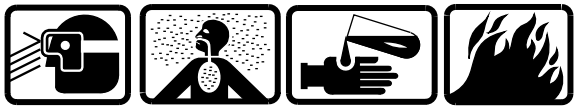
GO TO NEXT PAGE

2-2-78. MAINTENANCE STEP (LEFT SIDE) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove four bolts (1) and four washers (2) securing maintenance step (3) to fuselage.

INSTALL



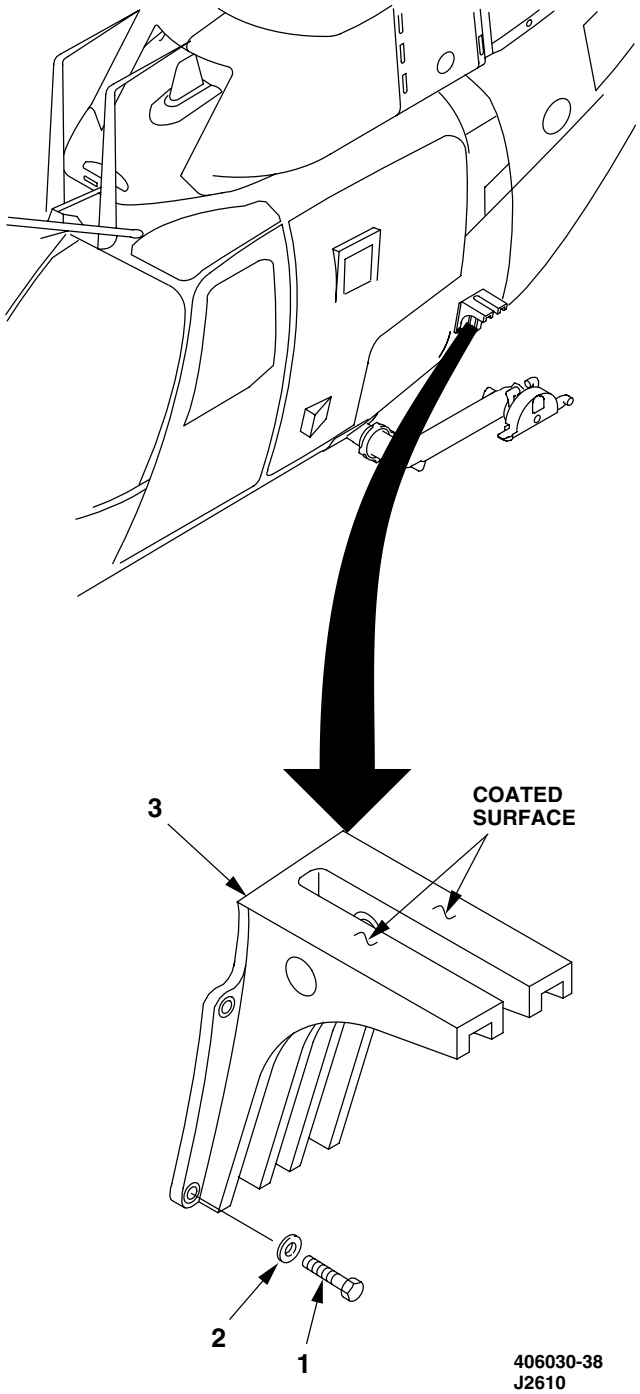
Acetone

2. Loosen adhesive by using plastic scraper (B123). Clean mating surfaces with acetone (D2) and abrasive pads (D1).

3. Place step (3), with walkway coating facing up, to left side of fuselage and secure with four washers (2) and four bolts (1). Torque bolts (1) **50 TO 70 INCH-POUNDS**.

Adhesive

4. Apply adhesive (D12) to step edge and bolt heads.



END OF TASK

2-2-79. MAINTENANCE STEP (LEFT SIDE) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)
Black Walkway Coating (D226)
Adhesive (D12)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-79. MAINTENANCE STEP (LEFT SIDE) — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

1. Brush maintenance step (1) until free of loose particles of contamination or soil.

Drycleaning Solvent

2. Clean with drycleaning solvent (D199) and wiping rags (D164).

INSPECT

3. Inspect maintenance step (1) for worn areas, exposed metal surfaces, cracks, worn attaching bolts, and loose or worn threaded inserts on fuselage.

REPAIR

4. Replace maintenance step if cracks are present.

5. Apply walkway coating (D226) to maintenance step if metal surface of maintenance step is exposed.

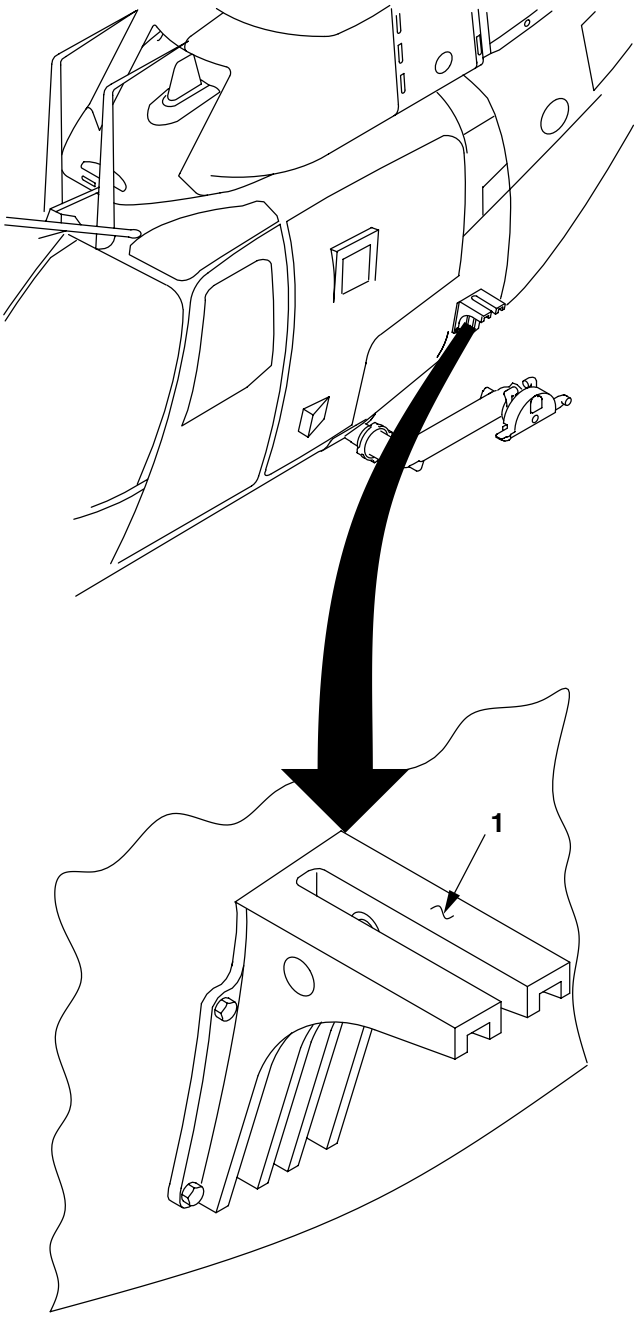
6. Replace damaged or worn attaching bolts.

7. Replace loose or damaged threaded inserts.

Adhesive

8. Apply adhesive (D12) to edges and bolt heads.

INSPECT



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J2610

END OF TASK

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION

This task covers: Cleaning and Inspection (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Wiping Rag (D164)
Pressure Sensitive Tape (D218)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
DOD 6050.5-L
TM 1-1500-204-23
TM 1-1520-266-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

NOTE

Bonded panels covered in this task consist of upper cabin roof, forward lower fuselage shell, fuel cell aft bulkhead, lower aft fuselage, fairings, electrical compartment floor oil cooler support, and fuel cell cavity panels. Refer to appropriate illustration for location of panel.

CLEAN

Drycleaning Solvent

NOTE

Cleaning procedure for honeycomb panels is standard for all panels.

1. Use drycleaning solvent (D199) with wiping rags (D164) to clean all honeycomb panels.

2. Dry panels with clean wiping rags (D164).

INSPECT

3. Inspect skin and/or honeycomb core for dents, punctures, scratches, sealant at seams, and other obvious damage. If damage to honeycomb panels is suspected refer to TM 1-1520-266-23.

CAUTION

To prevent failure of repair and/or progressive core degeneration, when internal corrosion or contamination (fuel, oil, water, etc.) is discovered, affected skins or core shall be completely cut out in accordance with limitations for prescribed panel.

GO TO NEXT PAGE

NOTE

- Sounding method for identifying bond separation should not be used within a dented area. Limits established for dents shall apply.
- Presence of bonding separation of void in a honeycomb panel can be detected by use of a sounding device (large coin or other like substitute). Tapping the metal covered surface of the panel will produce a dead or flat sound where bond separation (void) exists. The area shall be outlined using a grease pencil.
- Every effort should be made toward maintaining the highest standards of cleanliness possible and following the recommended general instruction repair procedures. In all repairs, the precautionary measures regarding inspection for water, fuel, and oil contamination and resultant correction shall be taken.

4. Classify damage found as negligible, minor, or major damage. Damage descriptions are as follows:

a. Negligible damage:

NOTE

Negligible damage does not require repair.

(1) Dents with the following restrictions:

(a) Those with no sharp edges or corners and having a depth of less than **0.25 inch** with total damage covering less than 5 percent of total panel area.

(b) Those with no sharp edges or corners and having a depth of less than **0.050 inch**, with a diameter of less than **0.500 inch** inch and with no more than three dents contained within a **4.000 inch** diameter circled area.

(c) Bends in dents must be at least **1.00 inch** away from any structural member fitting or beveled edge.

(d) Dents closer together than **1.000 inch** are considered to be one dent.

(2) Voids (bond failures) with the following restrictions:

(a) Voids less than 0.500 square inch in size with no more than two voids contained in any **4.00 inch** diameter circle area.

(b) Void edges must be at least **3 inches** away from any structural member, fitting, or beveled panel edge.

(c) Voids closer together than **1.00 inch** are considered to be one void.

NOTE

Edge separation (delamination) is never classified as negligible damage.

b. Minor damage includes: punctures, dents, creases, and edge damage which is not considered negligible and which is within the following limitations:

(1) Punctures, sharp dents, and creases.

NOTE

On fuel cavity wall panels, dents are allowed on only one skin and core.

(a) Maximum diameter of damage after cleanup does not exceed **0.500 inch**.

(b) No more than two damage areas contained within a **4.00 inch** diameter circle.

(c) Edge of cleanup area is a minimum of **3.00 inches** away from any attachment point, fitting, panel edge, or cutout.

NOTE

Damage areas closer together than **1 inch** shall be considered one damage area.

(2) Edge damage.

(a) Damage to fiberglass and core only.

GO TO NEXT PAGE

(b) Core damage not to extend further than **0.500 inch** inside of the inside bevel after cleanup.

(c) Length of damage shall not exceed **2.00 inches** after cleanup.

(d) No more than three edge repairs allowed per panel with a minimum of **2.00 inches** allowed between each repair.

c. Major damage: All damage classified as neither negligible nor minor and any damage which exceeds the following limitations:

NOTE

- Any damage which exceeds the following limitations shall not be repaired without AMCOM supervision and approval.
- Major damage limitations do not apply to fuel cavity wall panels. All repairs to fuel cavity wall panels which have damage exceeding minor damage limits requires AMCOM Engineering instruction and approval.

(1) Punctures, voids, and dents.

(a) Maximum length of cleanup is **5.00 inches** in any direction.

(b) No more than two repairs per panel allowed. A distance of **5.00 inches** is required between edges of cleanup areas.

(c) Total damage not to exceed 12.00 square inches in area if one skin and core are affected or 10 square inches in area if both skins and core are affected.

(d) Edge of cleanup area is a minimum of **3.00 inches** away from any attachment point, fitting, panel edge or cutout.

(2) Edge damage to any edge metal, skin, or doubler.

(a) Damage does not extend more than **0.500 inch** inside the inboard edge of the bevel after cleanup.

(b) Maximum length not to exceed **1.250 inches** with no more than two fasteners affected after cleanup.

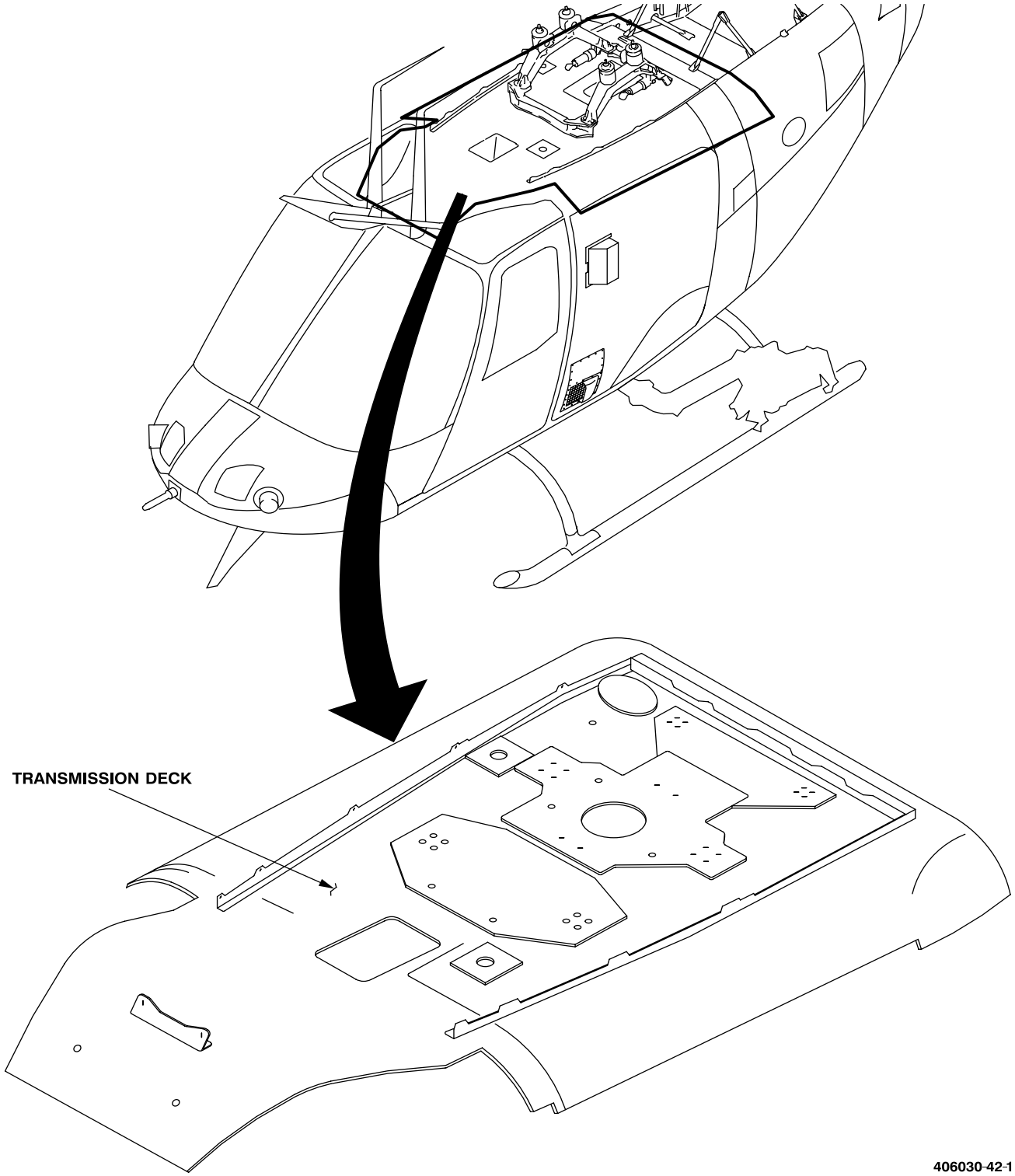
(c) No more than two repairs allowed per panel with a minimum distance of **2.00 inches** allowed between edges of cleanup.

5. Inspect bonded threaded inserts in panels for looseness, damage, and corrosion.

6. Inspect finish on panel for peeling, cracking, or other damage.

GO TO NEXT PAGE

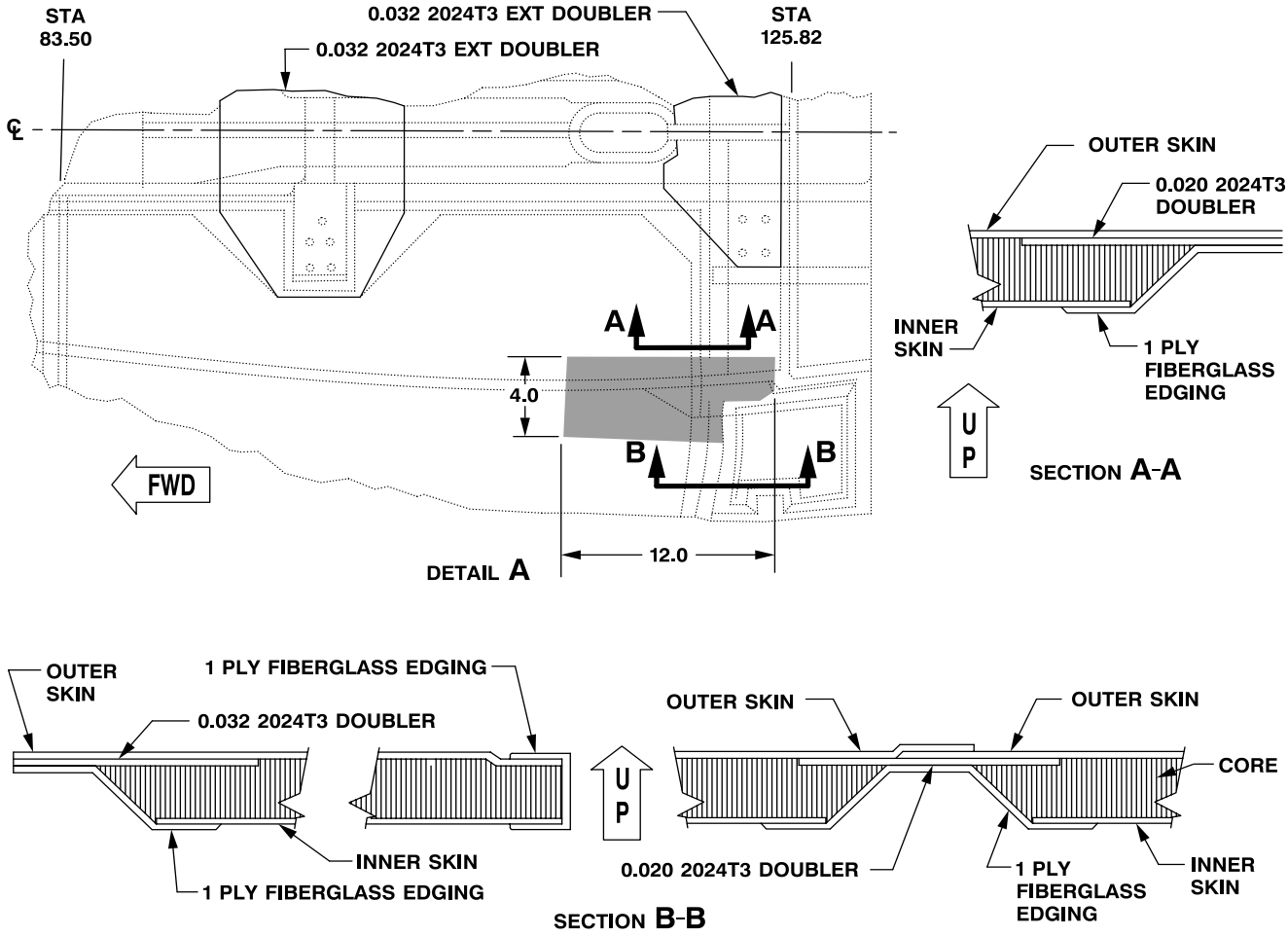
2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



Upper Cabin Roof (Sheet 1 of 2)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



DOOR EDGE

NOTE: Dimensions are in inches.

GENERAL CONSTRUCTION:

INNER SKIN	0.012 2024T3 SMOOTH
OUTER SKIN	0.008 2024T3 SMOOTH
CORE	0.500 THICK ALUMINUM HONEYCOMB
EDGING	FIBERGLASS EDGING 1 PLY

REPAIR LIMITS:

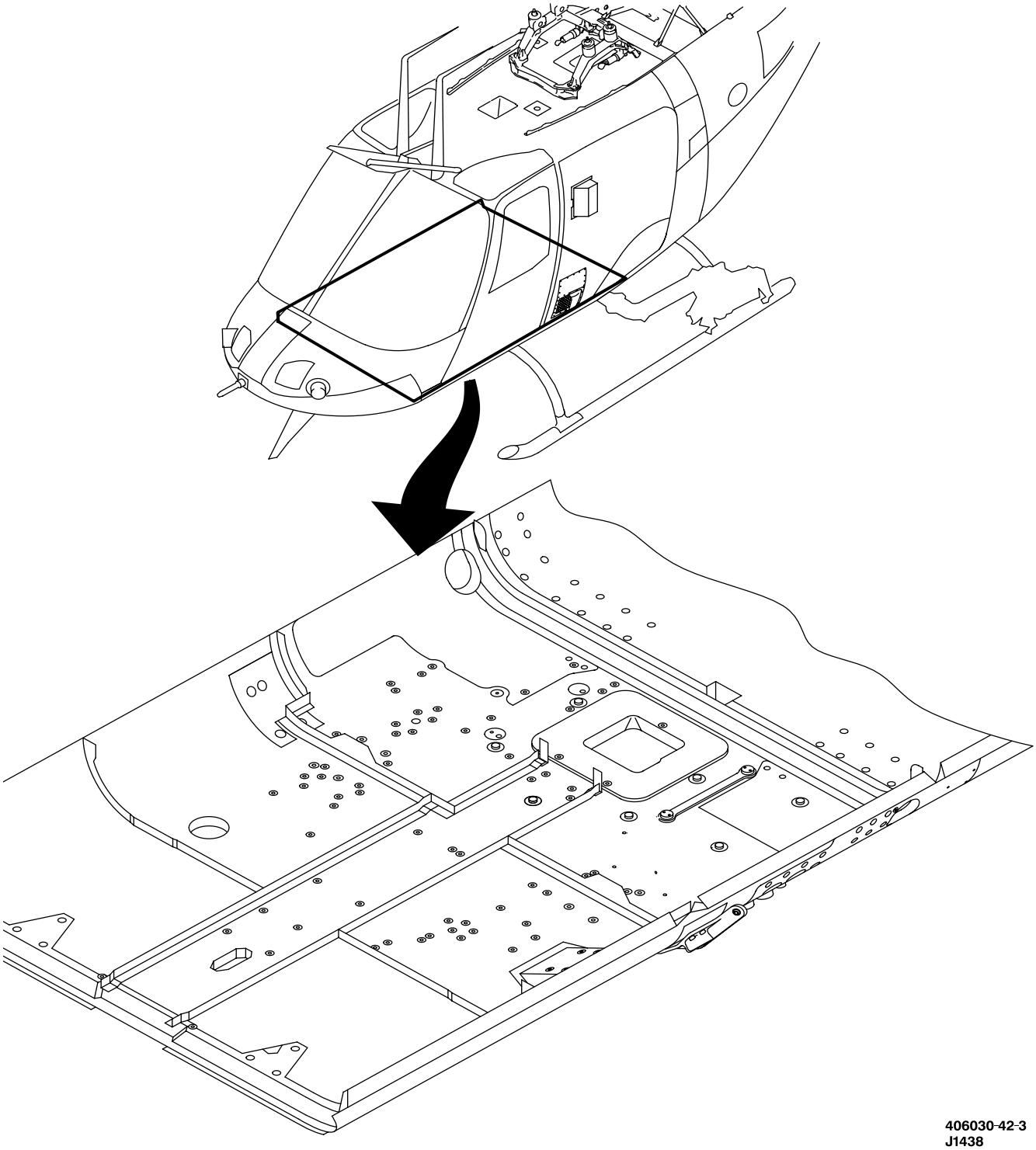
STANDARD EXCEPTIONS:
a. No major repairs in hatched areas without AMCOM engineering approval.
b. Note critical mounting surfaces.

406030-42-2
J2142

Upper Cabin Roof (Sheet 2 of 2)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)

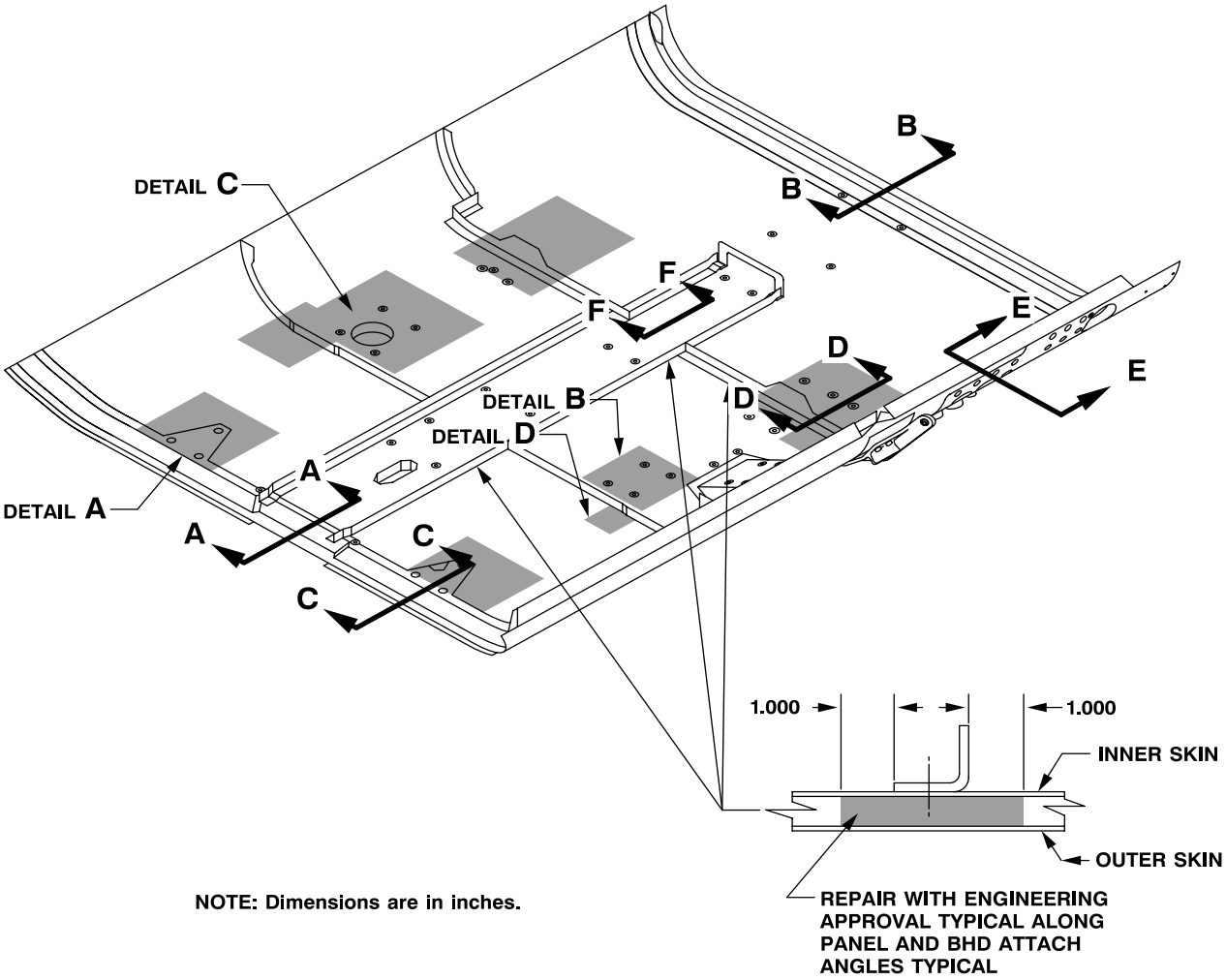


406030-42-3
J1438

Forward Lower Cabin Shell (Sheet 1 of 5)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



NOTE: Dimensions are in inches.

FORWARD HALF

GENERAL CONSTRUCTION:

INNER SKIN	0.012 X 2024T3 SHEFFIELD OR 5WL
OUTER SKIN	0.012 X 2024T3 SMOOTH
CORE	1.000 THICK ALUMINUM HONEYCOMB

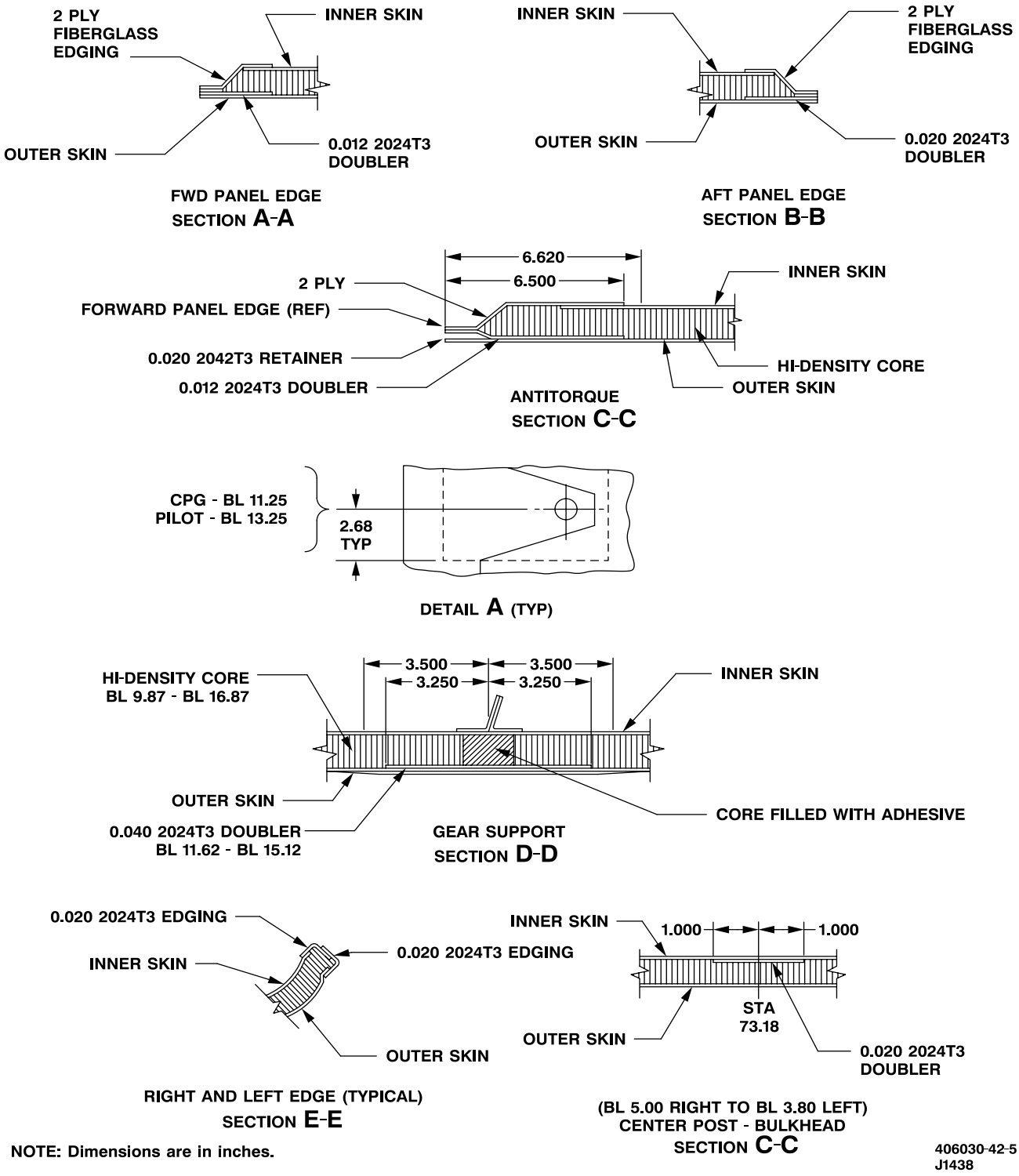
REPAIR LIMITS:

STANDARD EXCEPTIONS:
a. No major repairs in hatched area without AMCOM engineering approval.
b. Engineering approval required for repairs in typical detail.
c. Note critical mounting surfaces above and on following pages.

406030-42-4
J1438

Forward Lower Cabin Shell (Sheet 2 of 5)

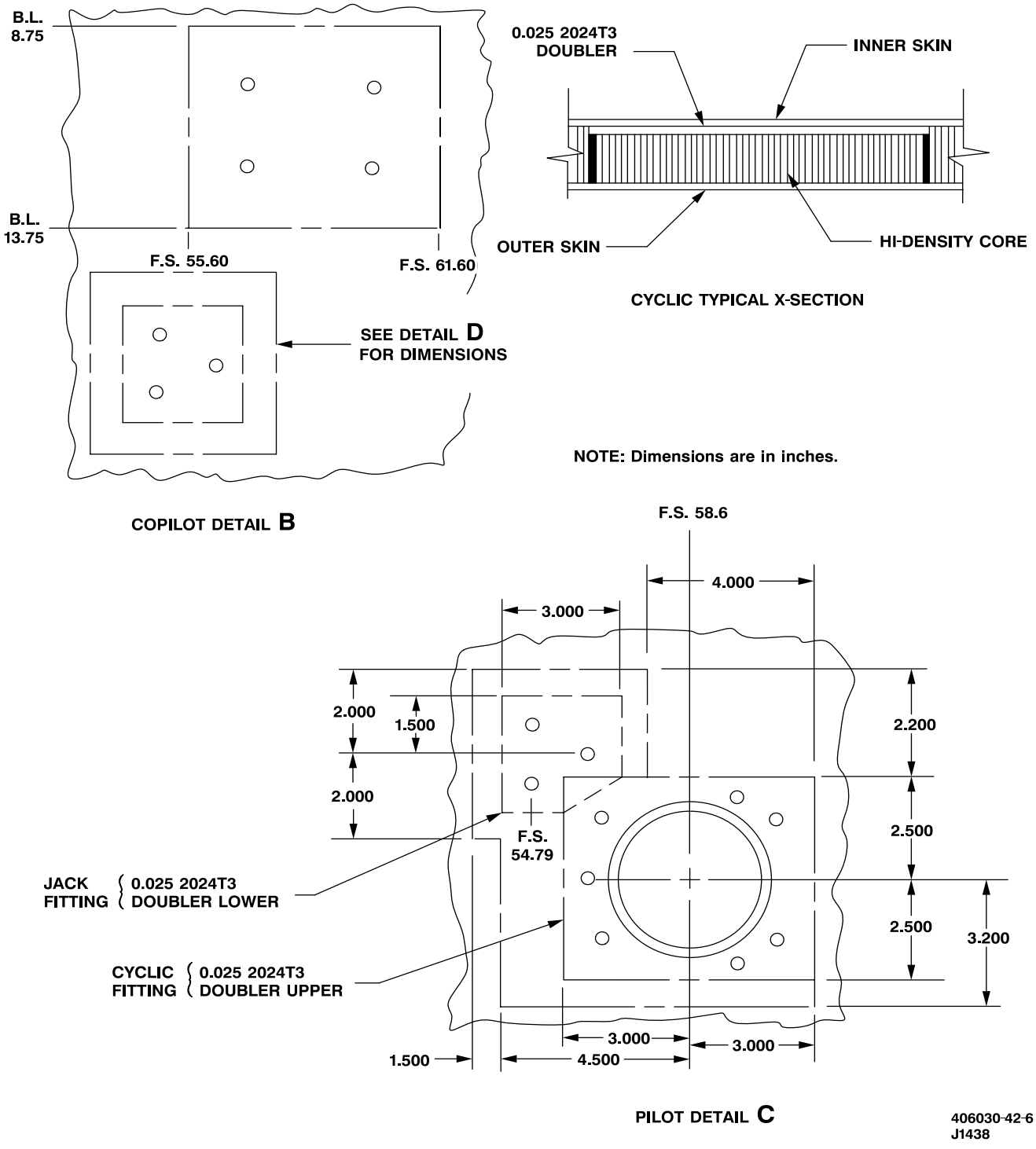
GO TO NEXT PAGE



Forward Lower Cabin Shell (Sheet 3 of 5)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



Forward Lower Cabin Shell (Sheet 4 of 5)

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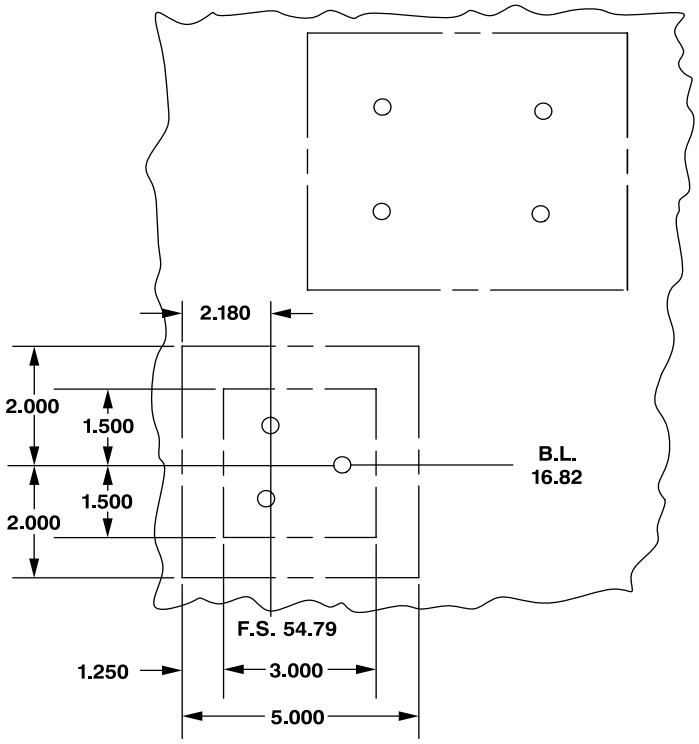
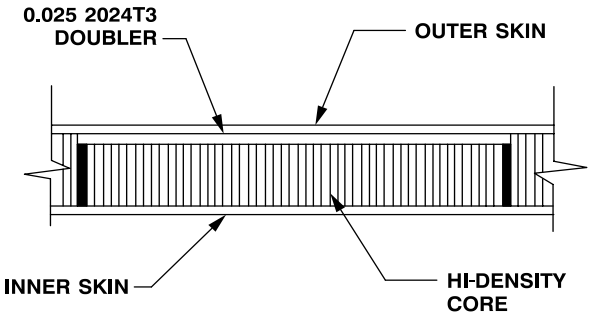


JACK POINT (LEFT SIDE) DETAIL **D**



NOTE: Dimensions are in inches.

FORCE GRADIENT MOUNTING (MAGNETIC BRAKE) - NOT SHOWN ON SKETCH

RIGHT

Four inserts to match brake mount, one located at B.L. 13.14, F.S. 68.06

LEFT

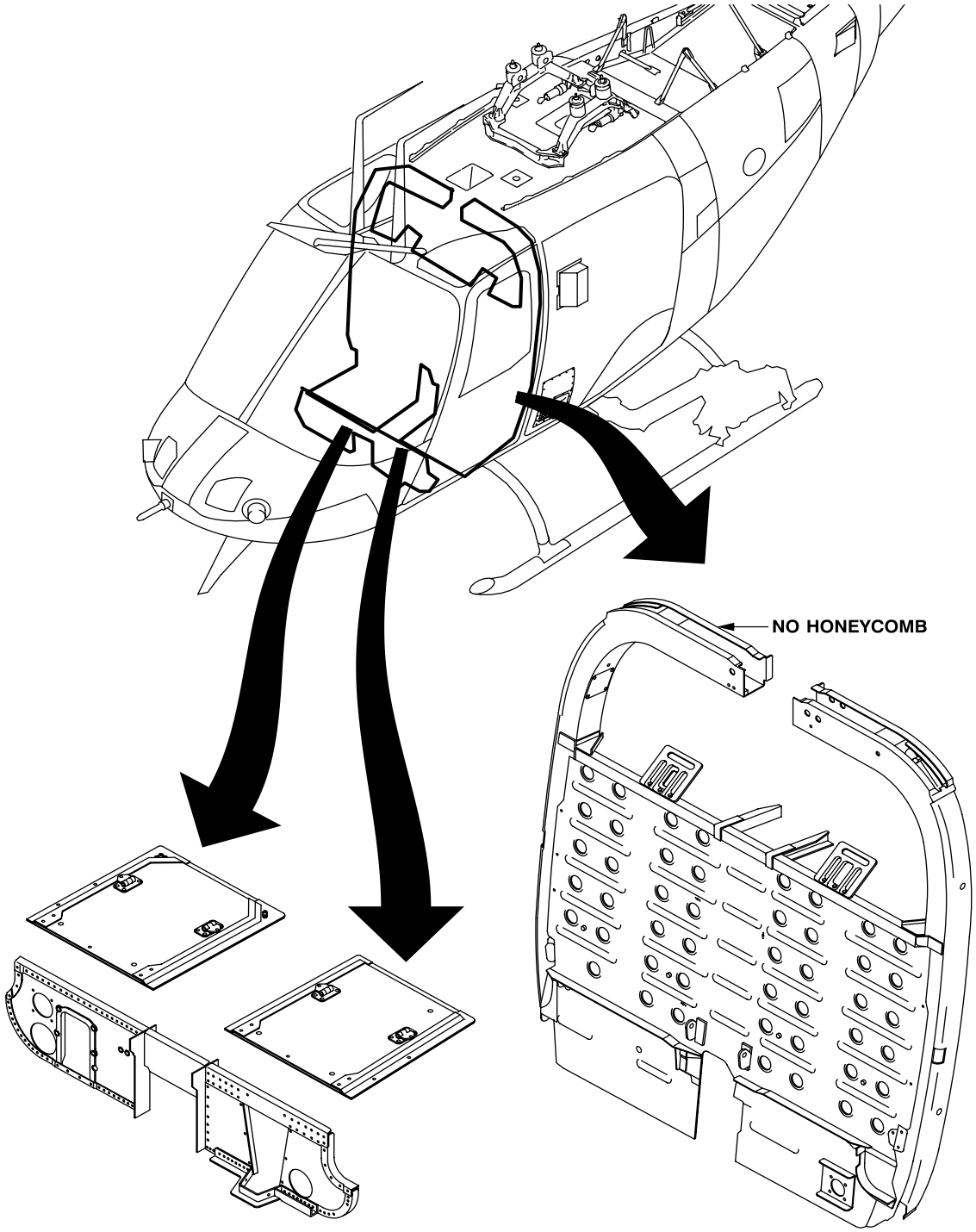
Four inserts to match brake mount, one located at B.L. 19.09, F.S. 61.03

406030-42-7
J1438

Forward Lower Cabin Shell (Sheet 5 of 5)

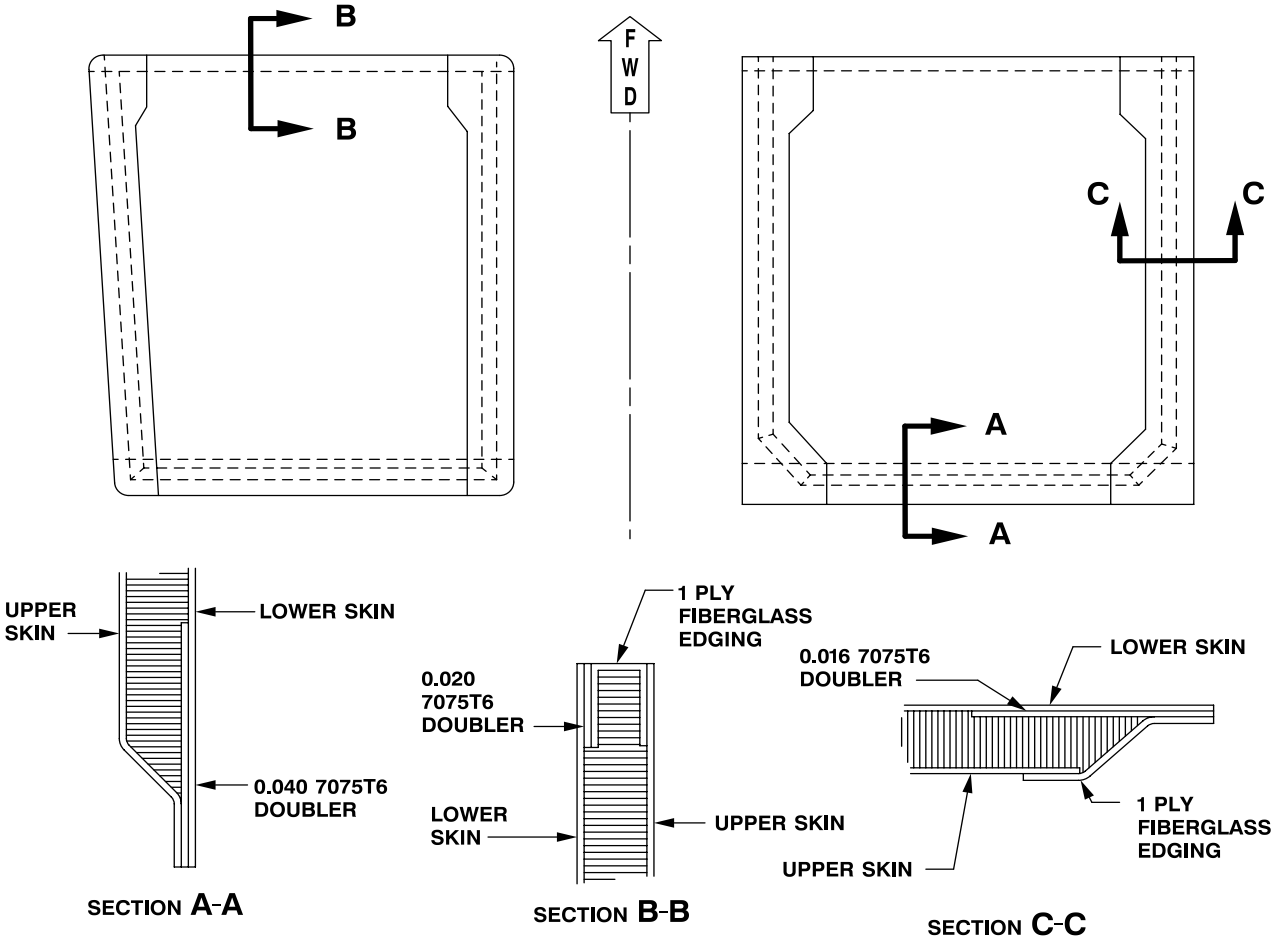
GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



Crew Seat and Bulkhead (Sheet 1 of 3)

GO TO NEXT PAGE



NOTE: Dimensions are in inches.

GENERAL CONSTRUCTION:

UPPER SKIN	0.016 7075T6 SMOOTH
LOWER SKIN	0.016 7075T6 SMOOTH
CORE	0.500 THICK ALUMINUM HONEYCOMB
EDGING	FIBERGLASS EDGING 1 PLY 2 SIDES W/45 DEGREES
	FIBERGLASS EDGING 1 PLY FWD EDGE 90 DEGREES
	0.016 UPPER SKIN AFT EDGE

REPAIR LIMITS:

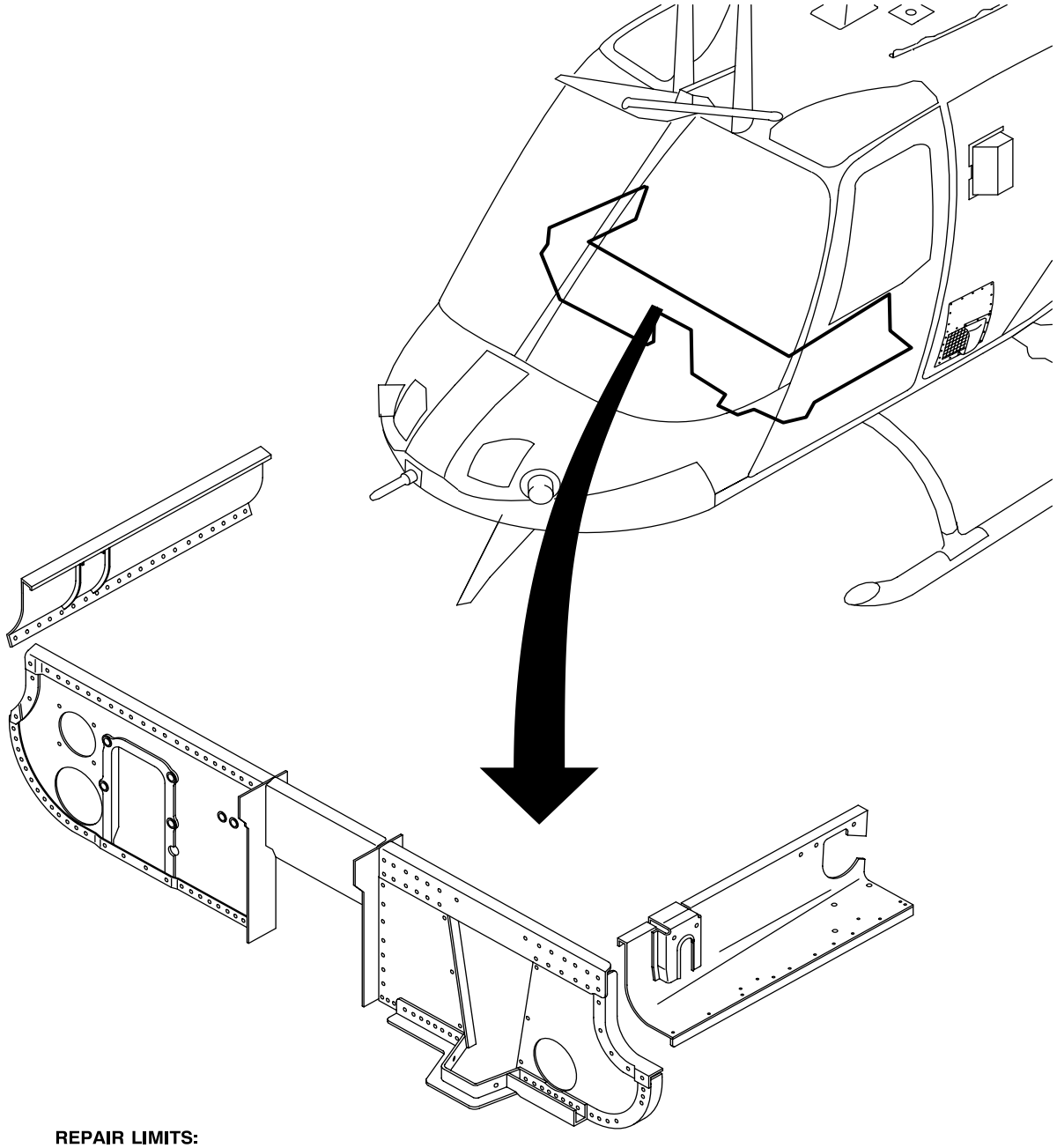
STANDARD

406030-51-2
J1438

Crew Seat and Bulkhead (Sheet 2 of 3)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



REPAIR LIMITS:

STANDARD EXCEPTIONS:

a. No major repairs without AMCOM engineering approval.

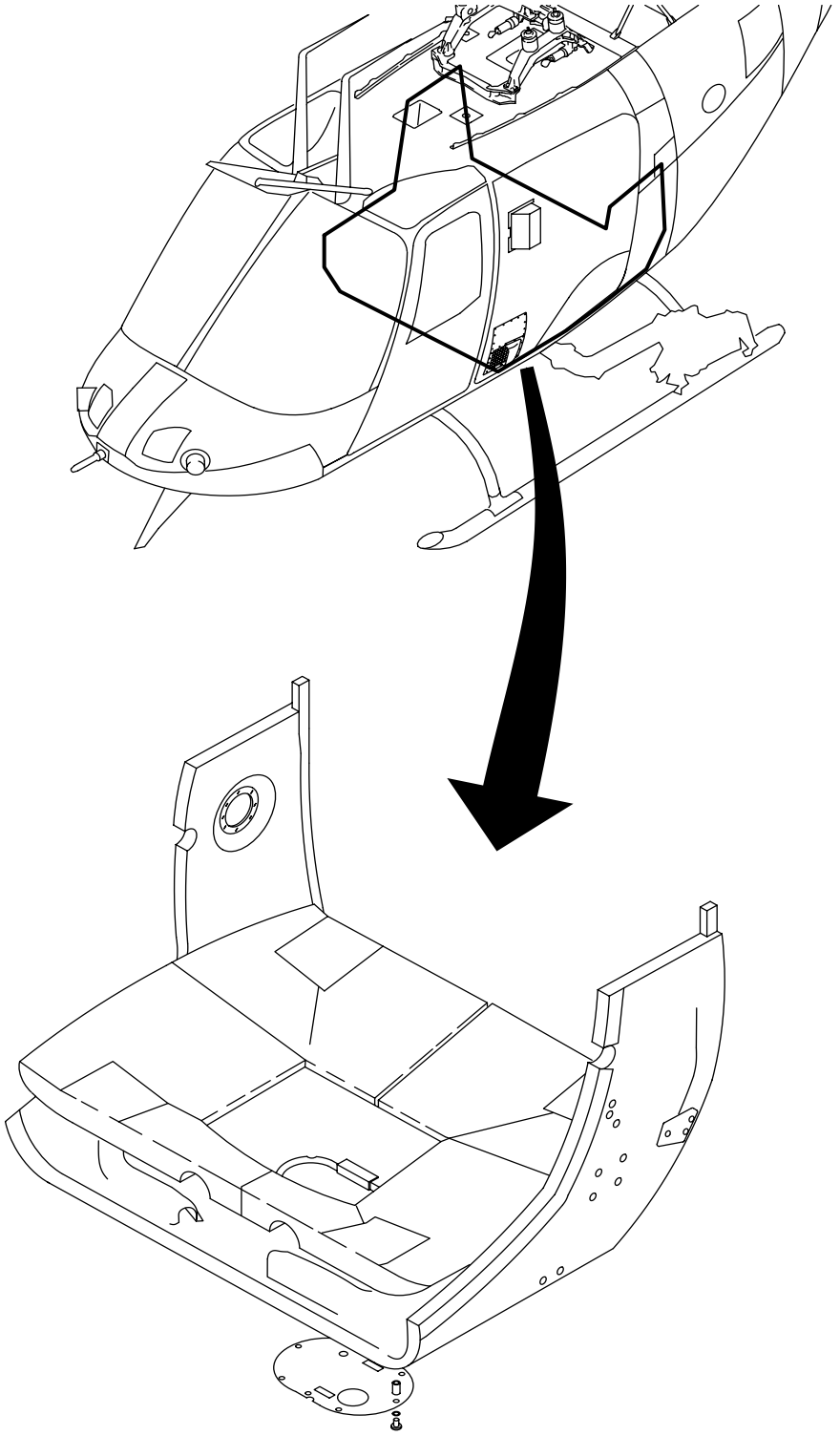
b. Any repairs that increase the rigidity of the web section are not authorized. Temporary repaIrs, such as the use of pressure sensltlve tape (D218) to prevent foreign object damage (FOD) from interfering with the flight controls, and the minor repair of cracks by stop drilling, are acceptable. Cosmetic repairs such as removal of small dents, are not necessary.

406030-51-3
J1438

Crew Seat and Bulkhead (Sheet 3 of 3)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



406031-9-1
J1438

Aft Lower Cabin Shell (Sheet 1 of 4)

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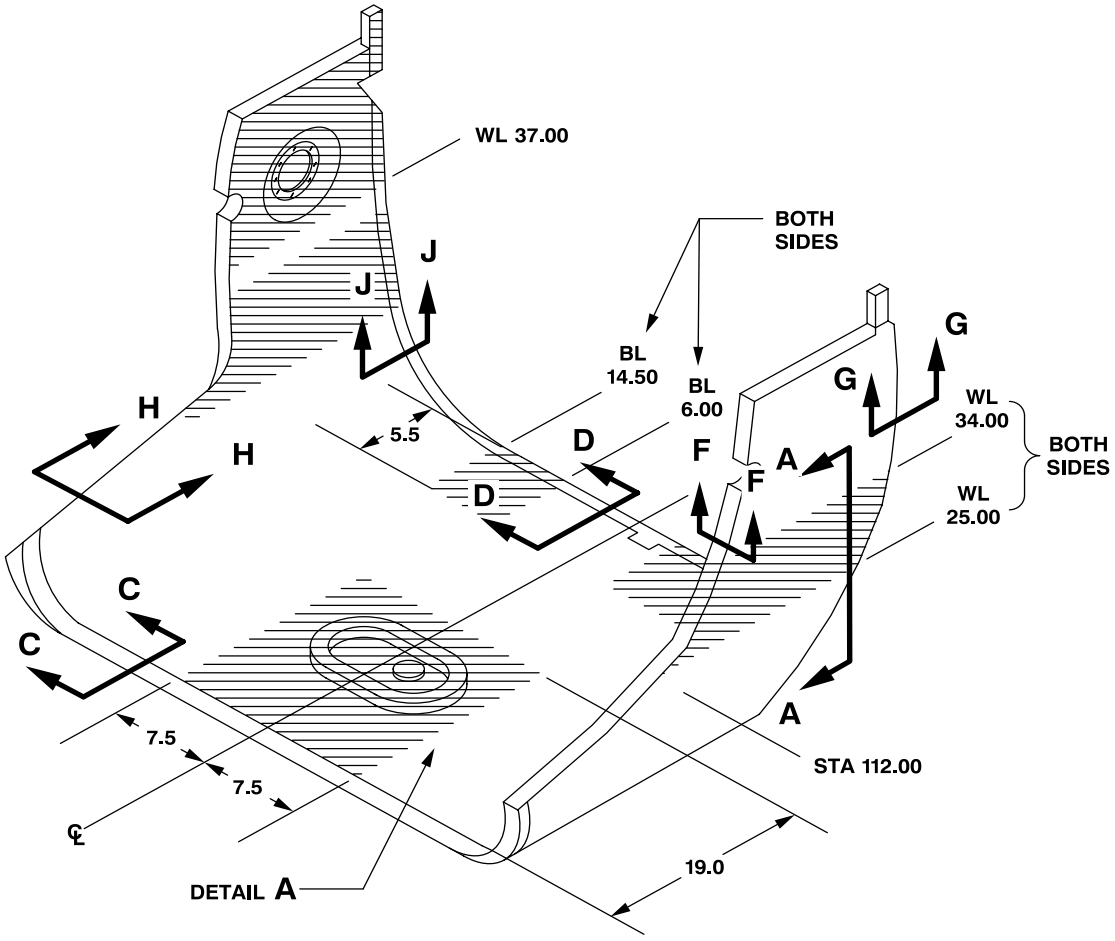
2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



AFT HALF

GENERAL CONSTRUCTION:

NOTE: Dimensions are in inches.

OUTER SKIN	1 PLY FIBERGLASS
INNER SKIN	2 PLY FIBERGLASS
CORE	1.000 THICK ALUMINUM HONEYCOMB

DAMAGE LIMITS:

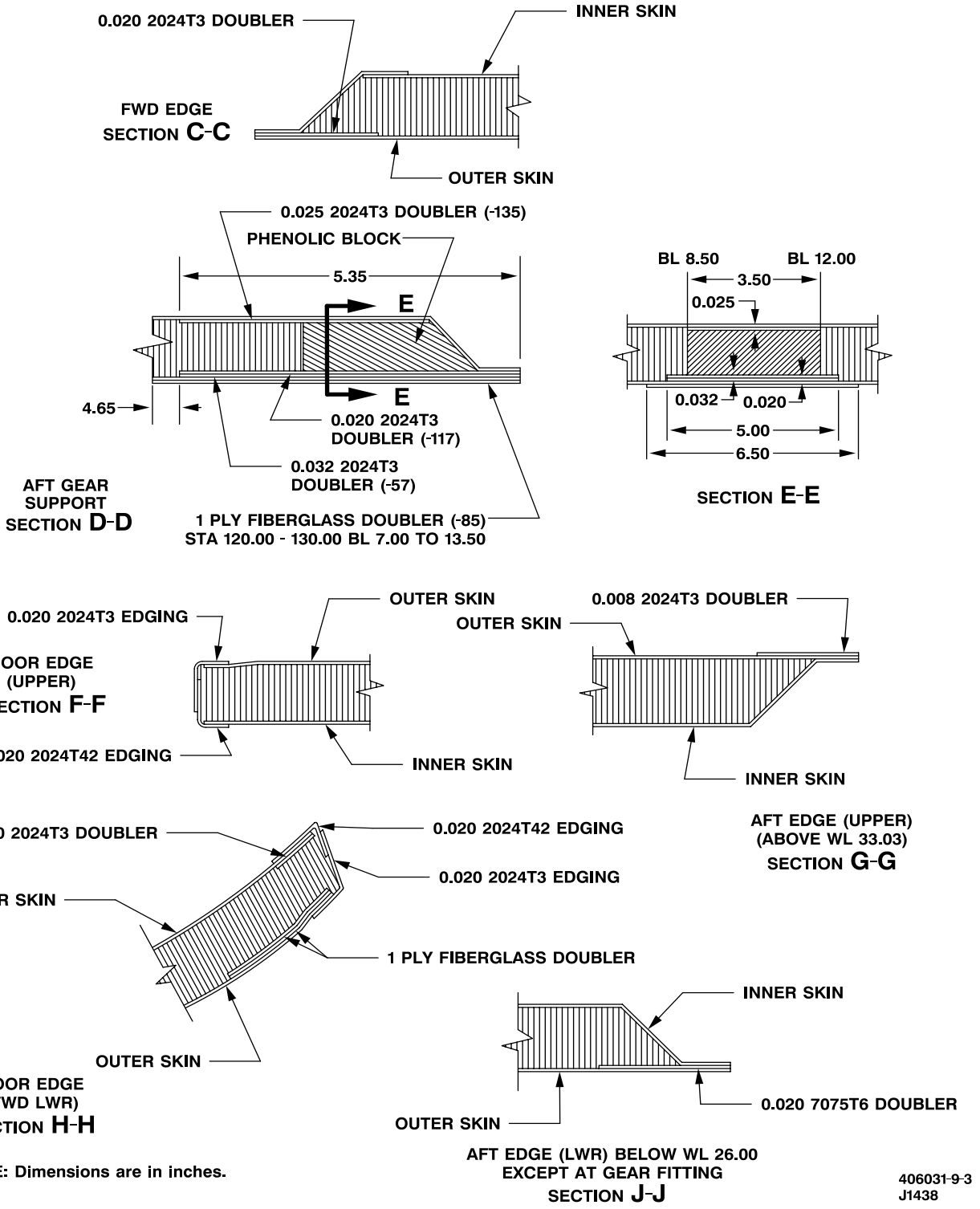
STANDARD EXCEPTIONS:

a. No major repairs in hatched areas without AMCOM engineering approval
b. Note critical mounting surfaces above and on following pages.

406031-9-2
J1438

Aft Lower Cabin Shell (Sheet 2 of 4)

GO TO NEXT PAGE



Aft Lower Cabin Shell (Sheet 3 of 4)

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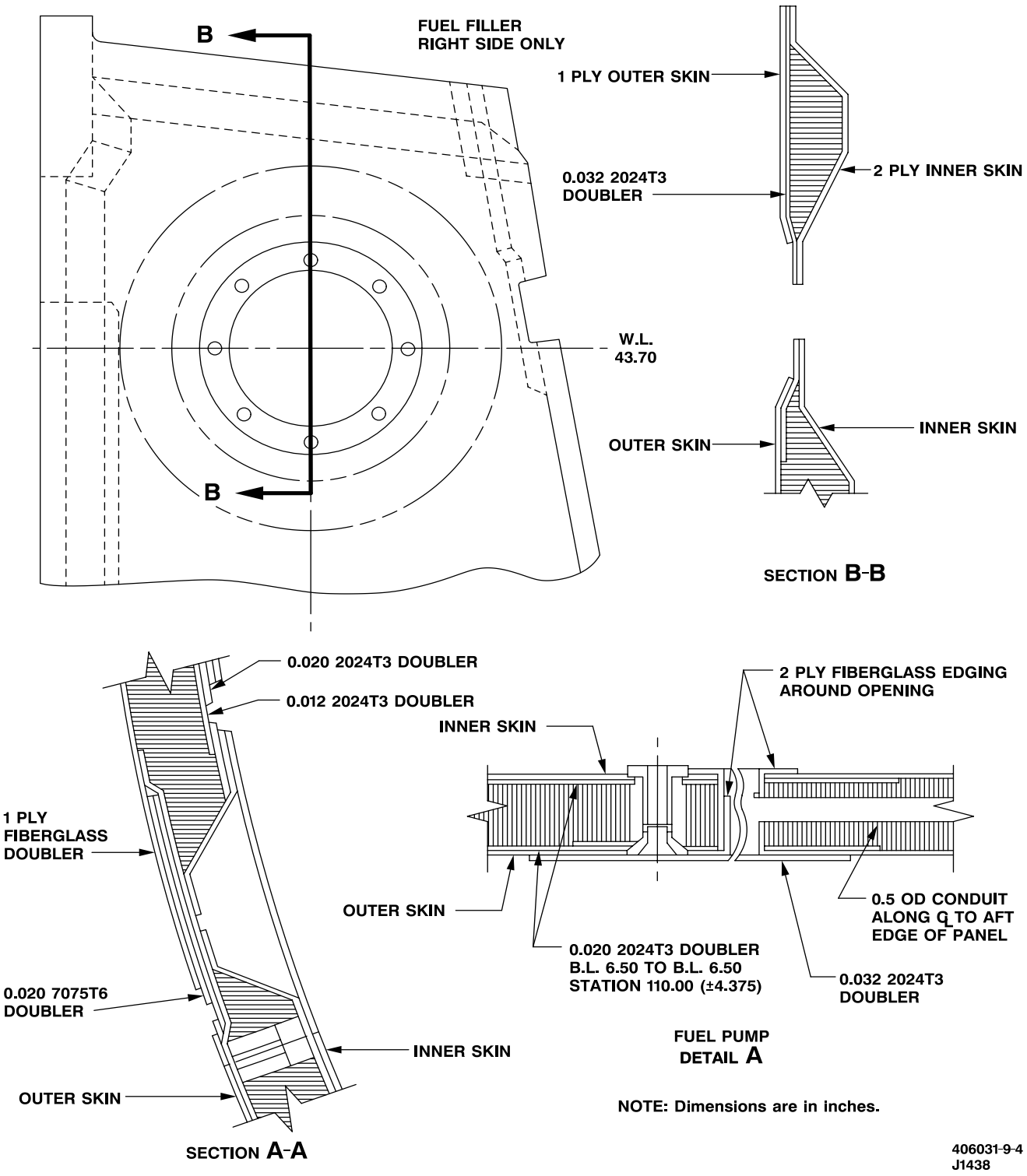
2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



Aft Lower Cabin Shell (Sheet 4 of 4)

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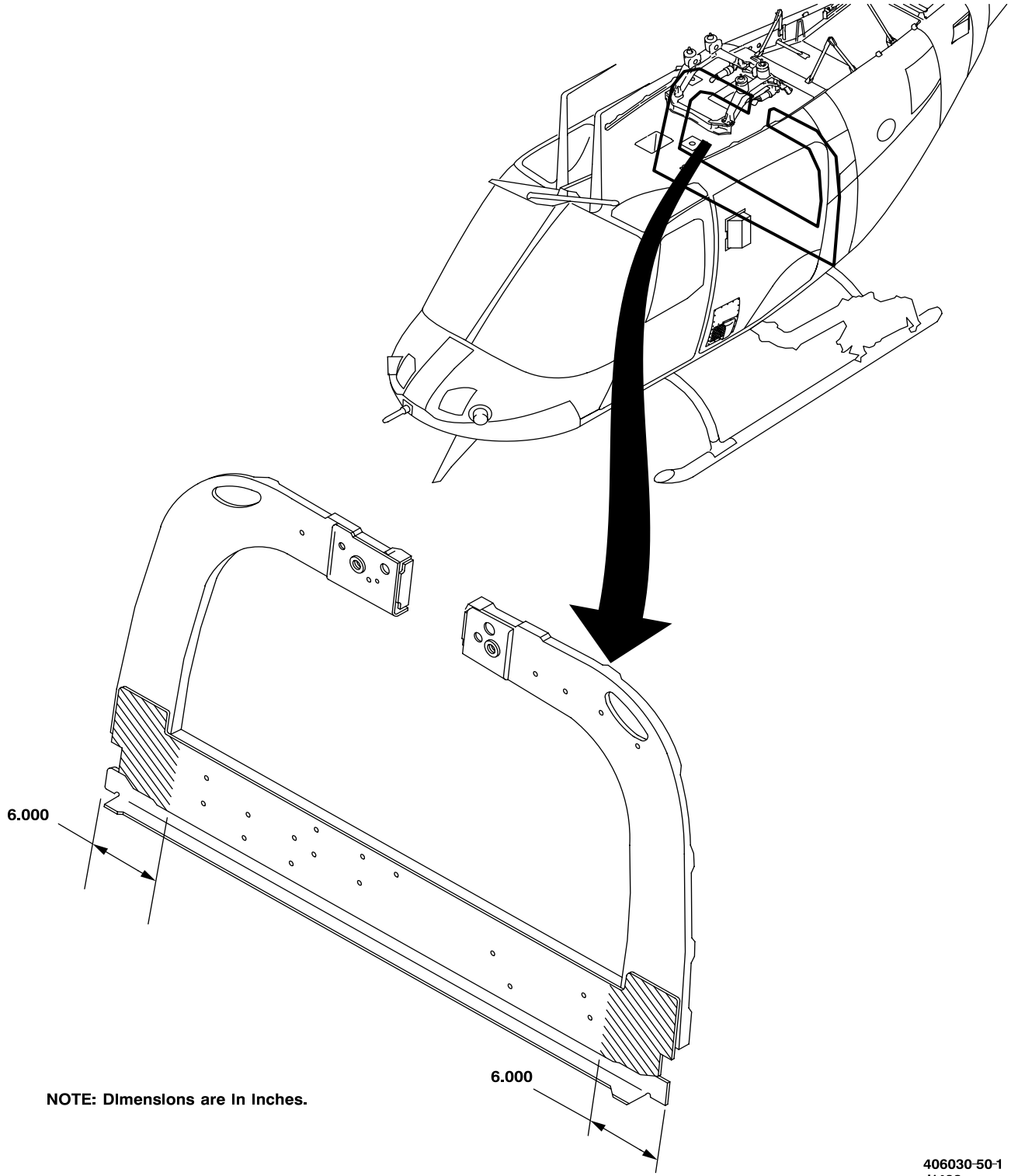
2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



Forward Bulkhead (Sheet 1 of 2)

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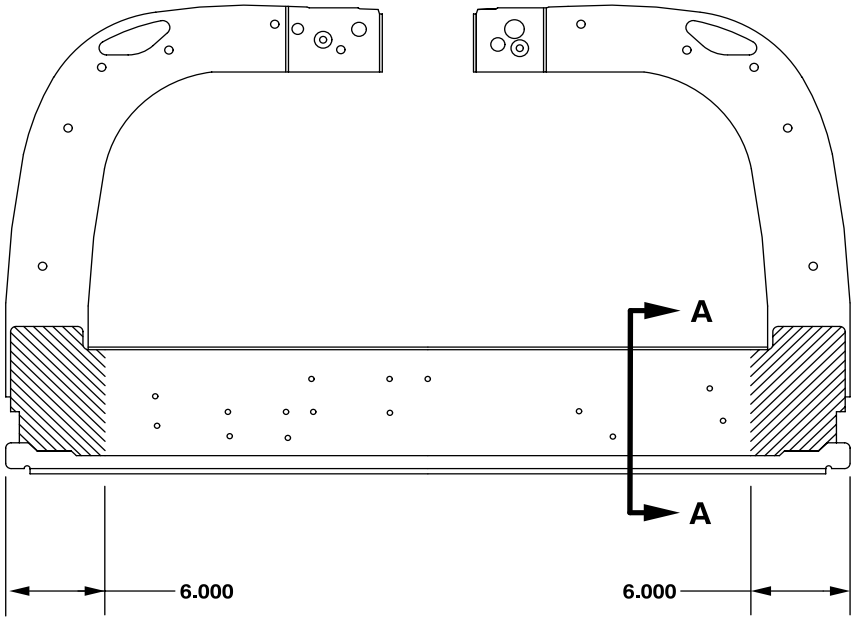
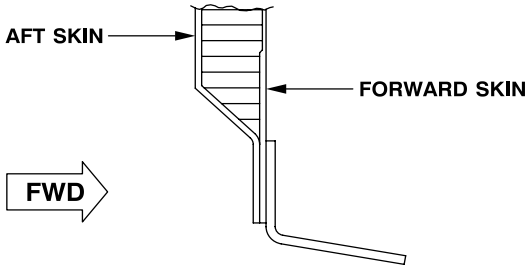
2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)





SECTION A-A

NOTE: Dimensions are in inches.

GENERAL CONSTRUCTION:

FORWARD SKIN	CHEM MILLED 0.025 7075-T6 ALUMINUM
AFT SKIN	2 PLY FIBERGLASS
CORE	0.500 THICK ALUMINUM HONEYCOMB

REPAIR LIMITS:

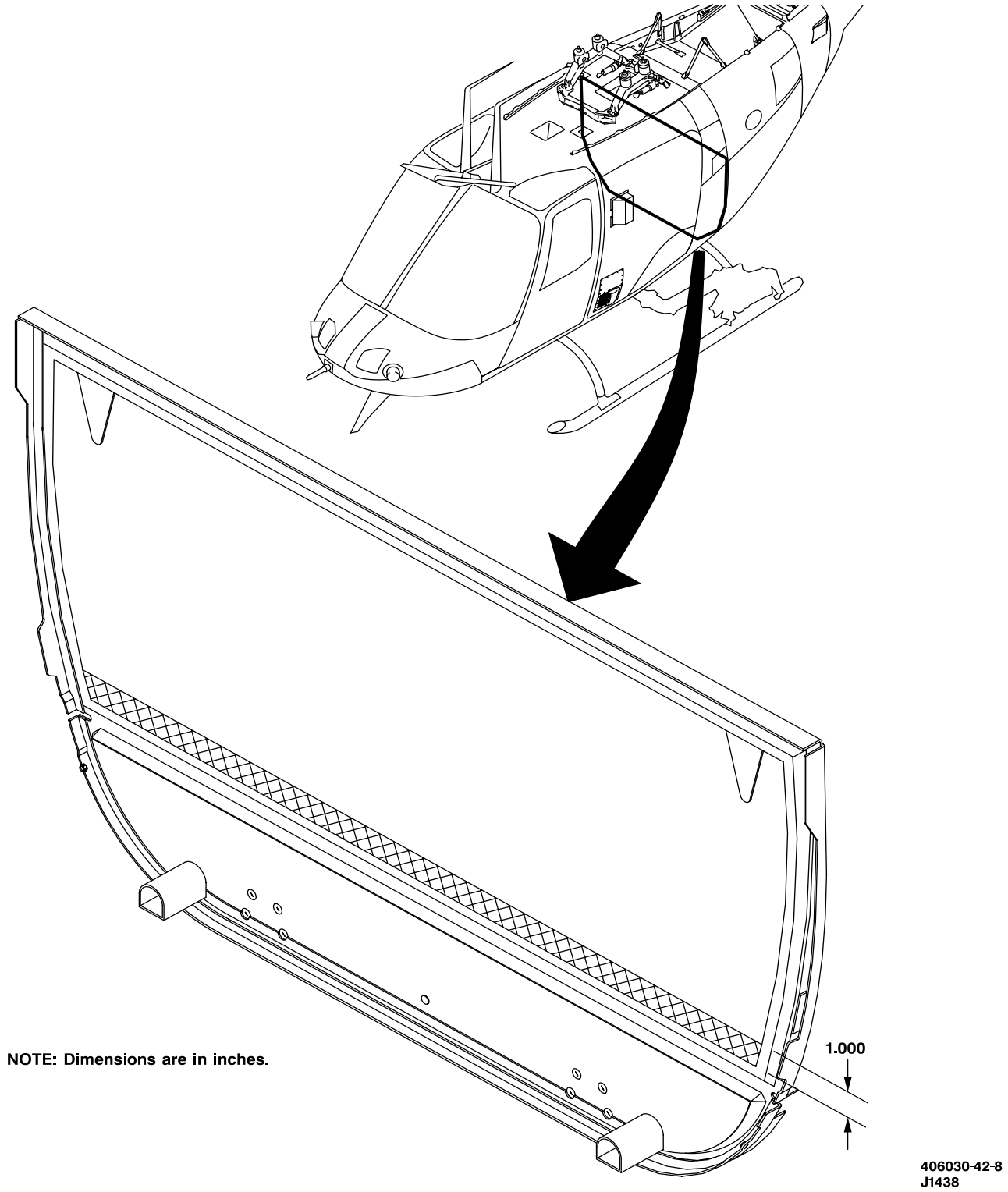
STANDARD EXCEPTION:
No major repairs in hatched areas without AMCOM engineering approval.

406030-50-2
J1438

Forward Bulkhead (Sheet 2 of 2)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



Aft Fuel Cell Bulkhead (Sheet 1 of 2)

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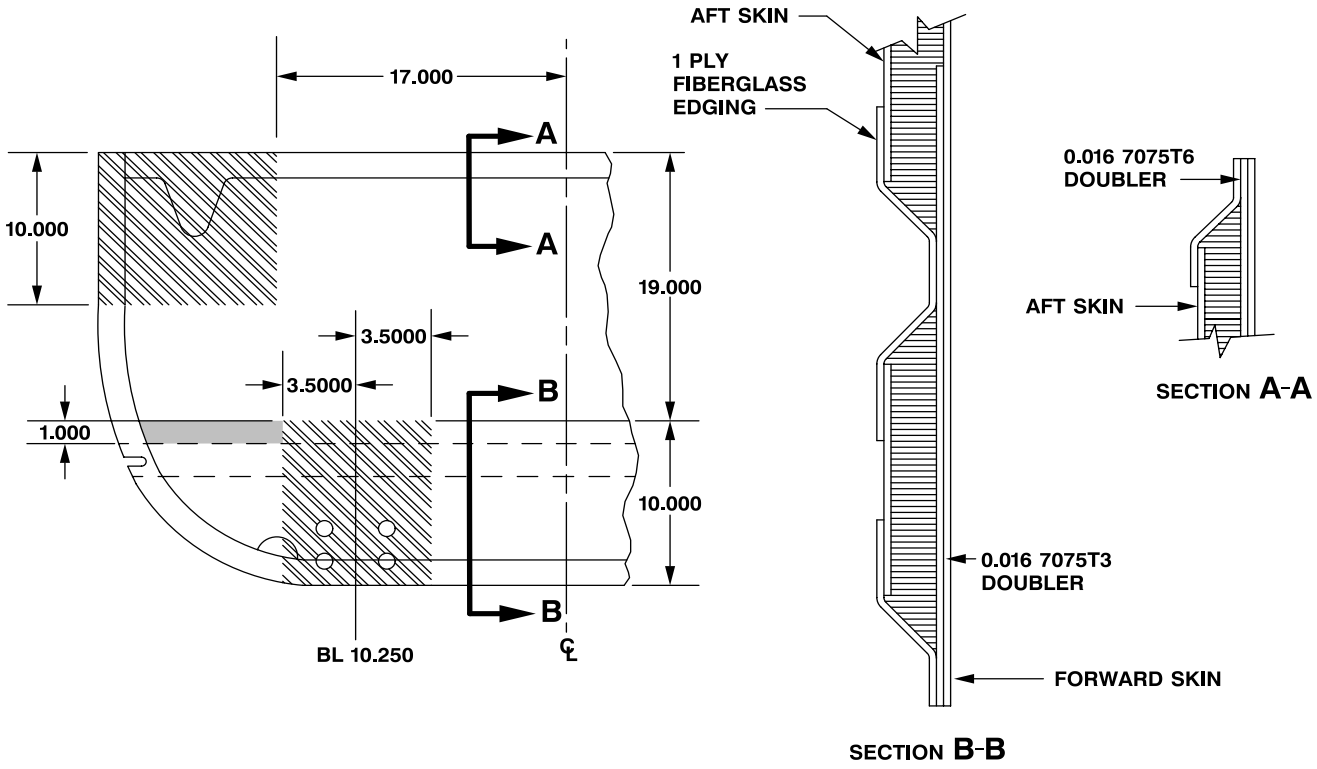
2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



NOTE: Dimensions are in inches.

GENERAL CONSTRUCTION:

FWD SKIN	0.008 2024T3 SMOOTH
AFT SKIN	0.008 2024T3 SMOOTH
CORE	0.375 THICK ALUMINUM HONEYCOMB
EDGING	1 PLY FIBERGLASS EDGING

REPAIR LIMITS:

STANDARD EXCEPTIONS:

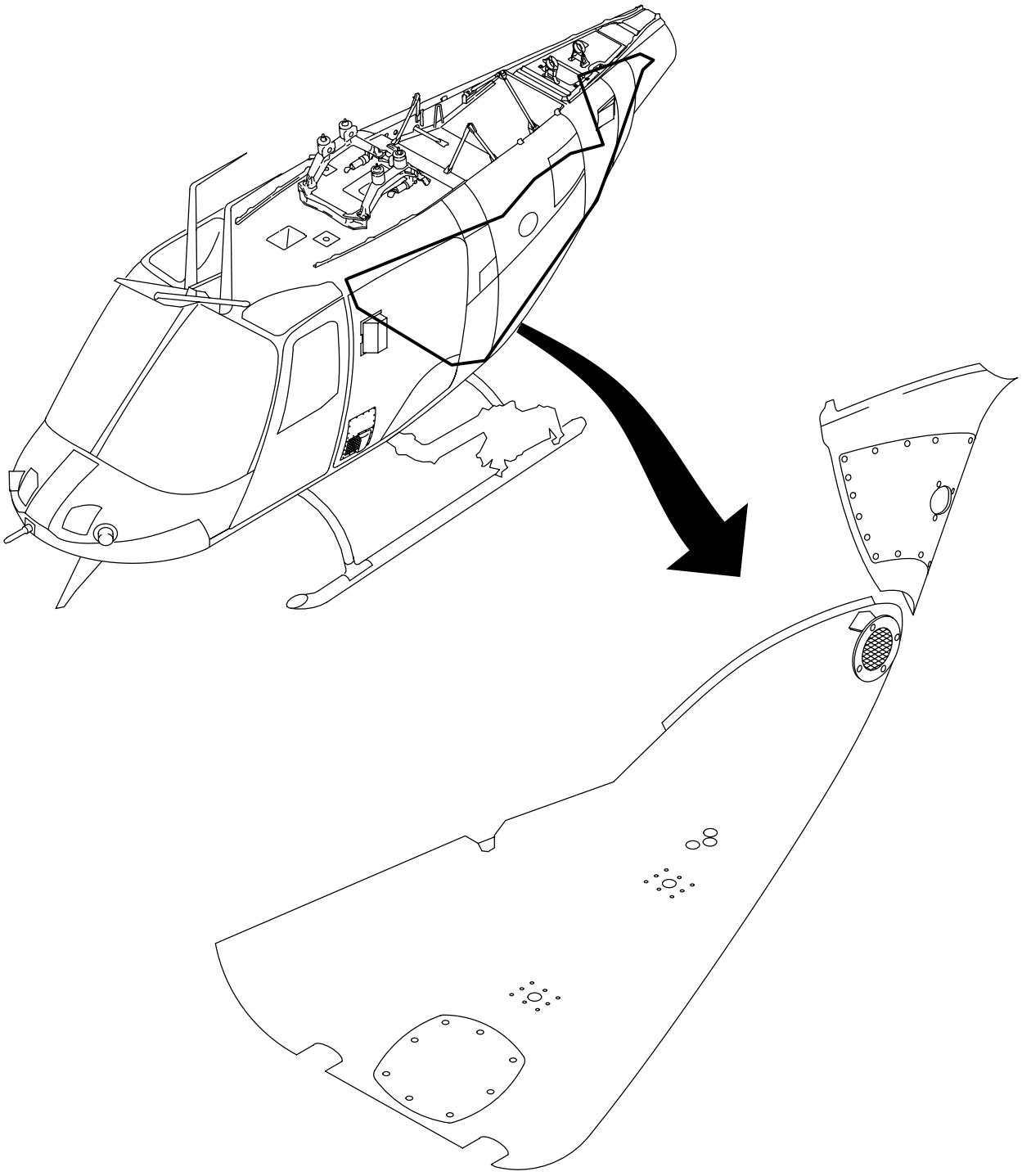
a. No major repairs in hatched areas without AMCOM engineering approval.
b. Note critical mounting surfaces.

406030-42-9
J1438

Aft Fuel Cell Bulkhead (Sheet 2 of 2)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)

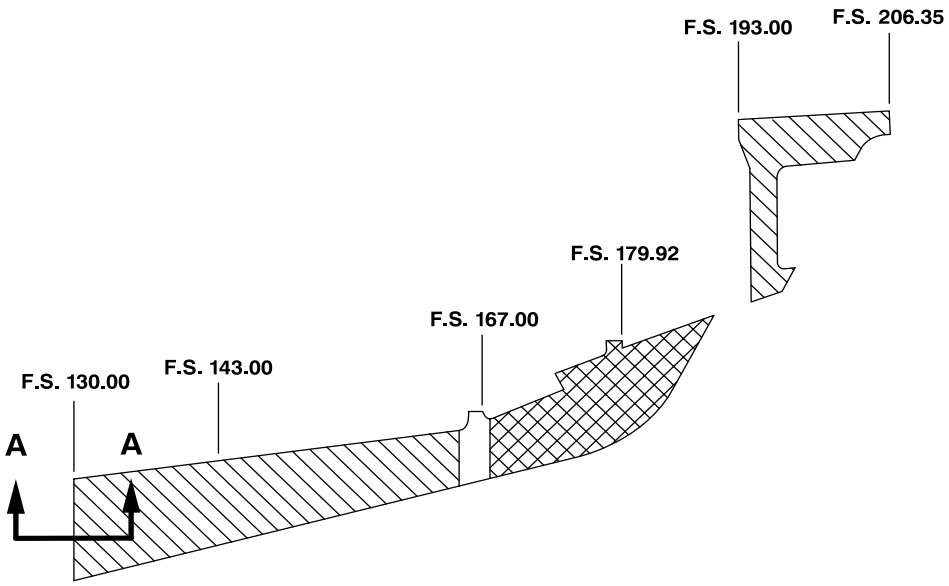


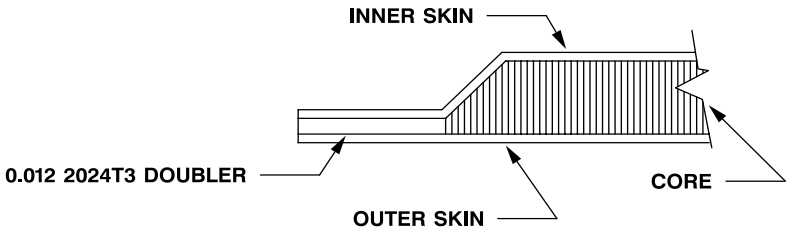
406030-132-1
J1438

Lower Aft Fuselage (Sheet 1 of 2)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)





SECTION A-A

GENERAL CONSTRUCTION:

INNER SKIN	1 PLY FIBERGLASS
OUTER SKIN	1 PLY FIBERGLASS
CORE	0.125 INCH THICK ALUMINUM HONEYCOMB
	0.125 INCH THICK PLASTIC HONEYCOMB

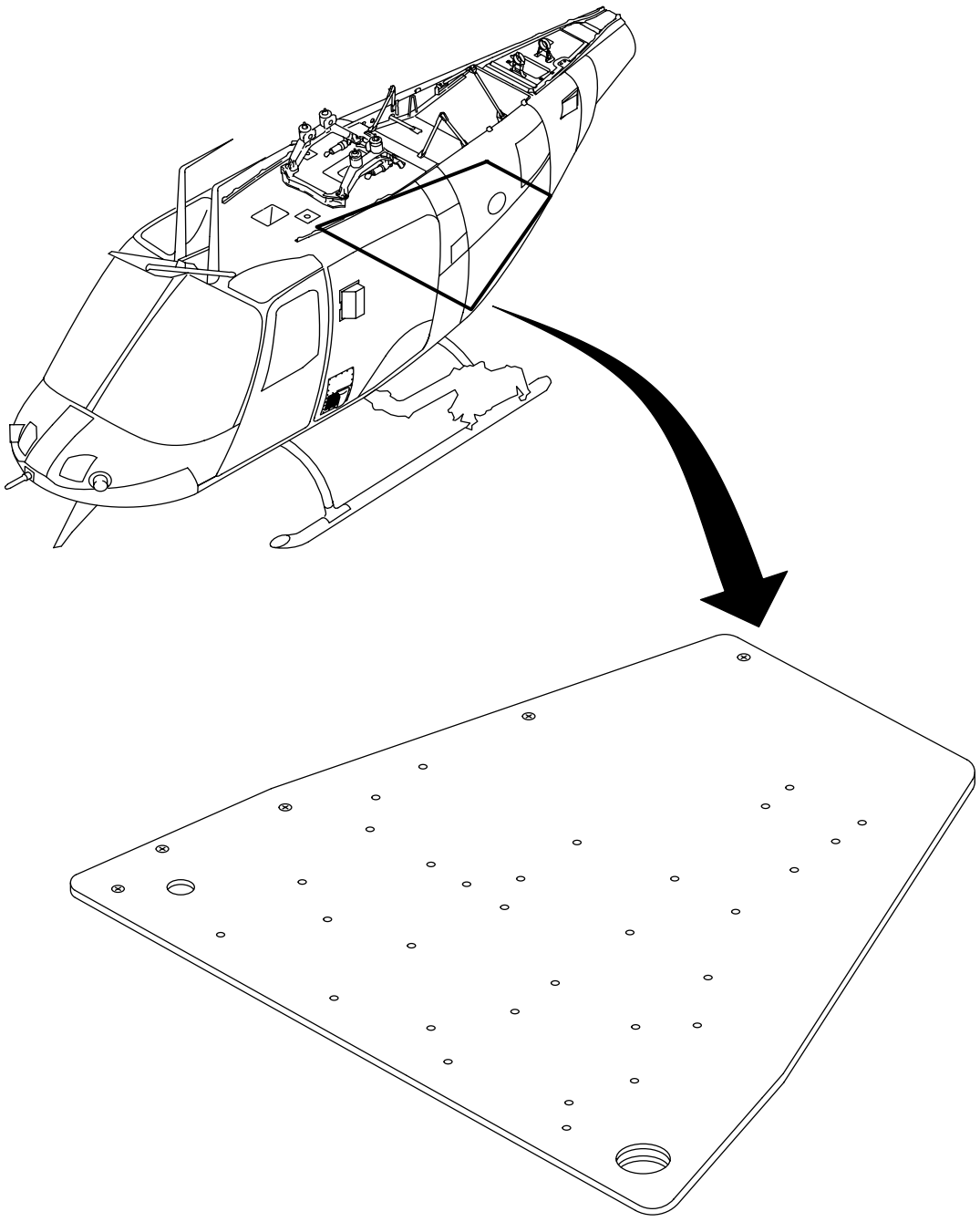
REPAIR LIMITS:
STANDARD

406030-132-2
J1438

Lower Aft Fuselage (Sheet 2 of 2)

GO TO NEXT PAGE

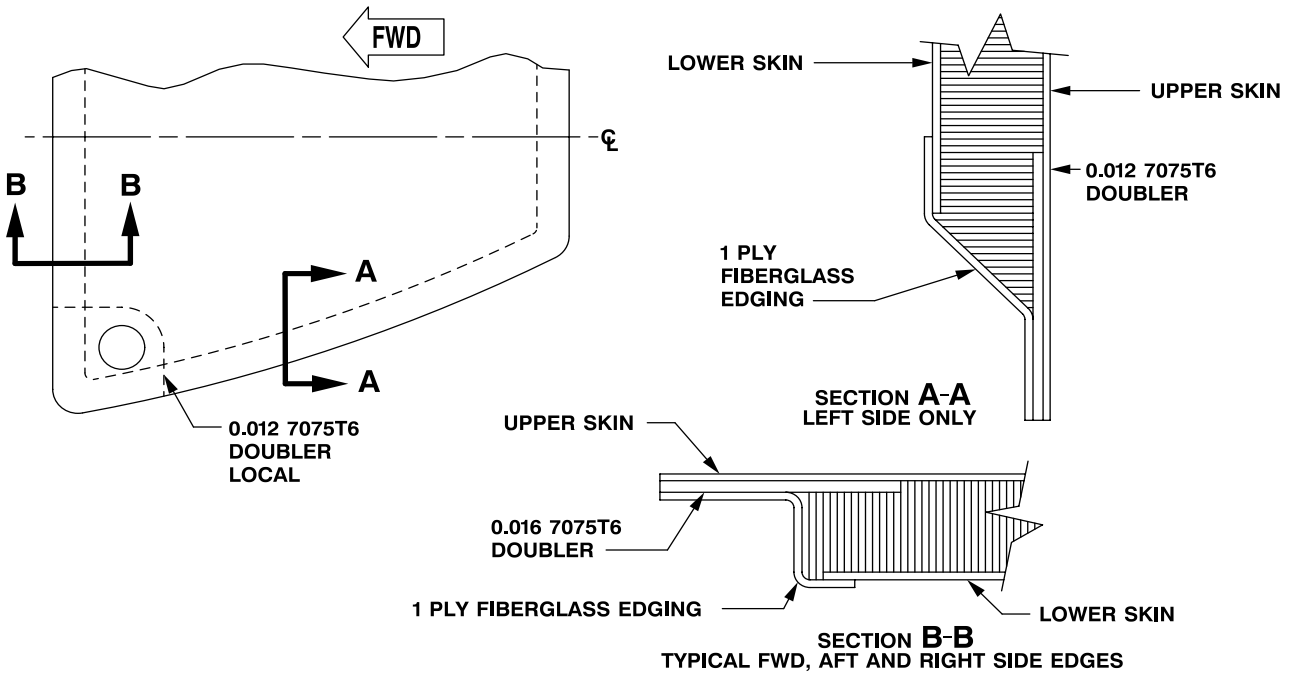
2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



406030-42-12
J1438

Electrical Compartment Floor Repair (Sheet 1 of 2)

GO TO NEXT PAGE



NOTE: Dimensions are in inches.

GENERAL CONSTRUCTION:

UPPER SKIN	0.012 7075T6 RIGIDIZED
LOWER SKIN	0.008 7075T6 RIGIDIZED
CORE	0.500 THICK ALUMINUM HONEYCOMB
EDGING	1 PLY FIBERGLASS EDGING

REPAIR LIMITS:

STANDARD INSTALLATION:

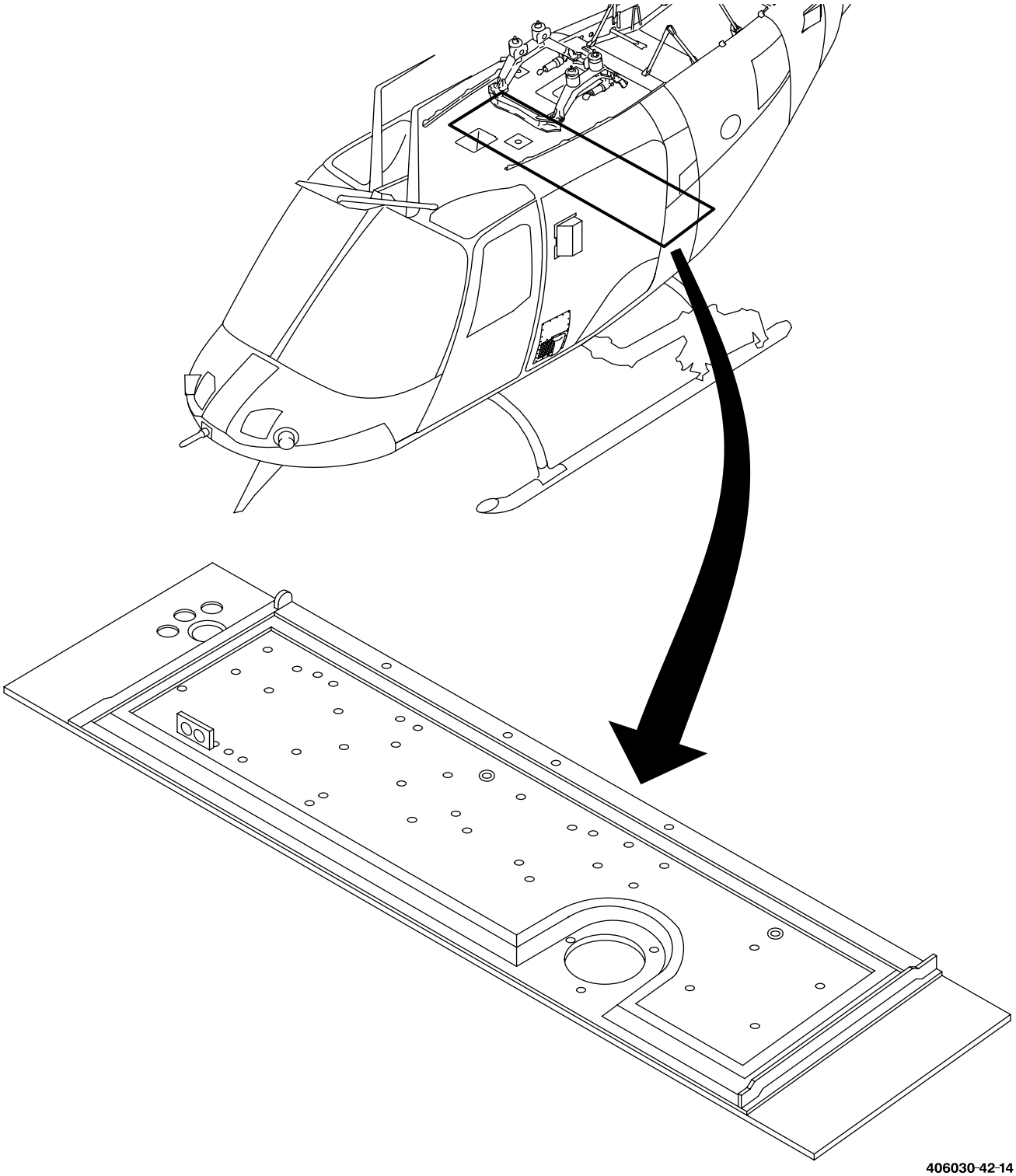
Compartment floor panel may be reinstalled using blind rivets throughout, or the lower skin on each side of the airframe shall be loosened sufficiently to gain access for bucking. However, blind rivets must be utilized in any event along STA. 167.00 due to inaccessibility for bucking rivets (TM 1-1500-204-23).

406030-42-13
J2142

Electrical Compartment Floor Repair (Sheet 2 of 2)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



406030-42-14
J1438

Seatback Electrical Shelf Repair (Sheet 1 of 2)

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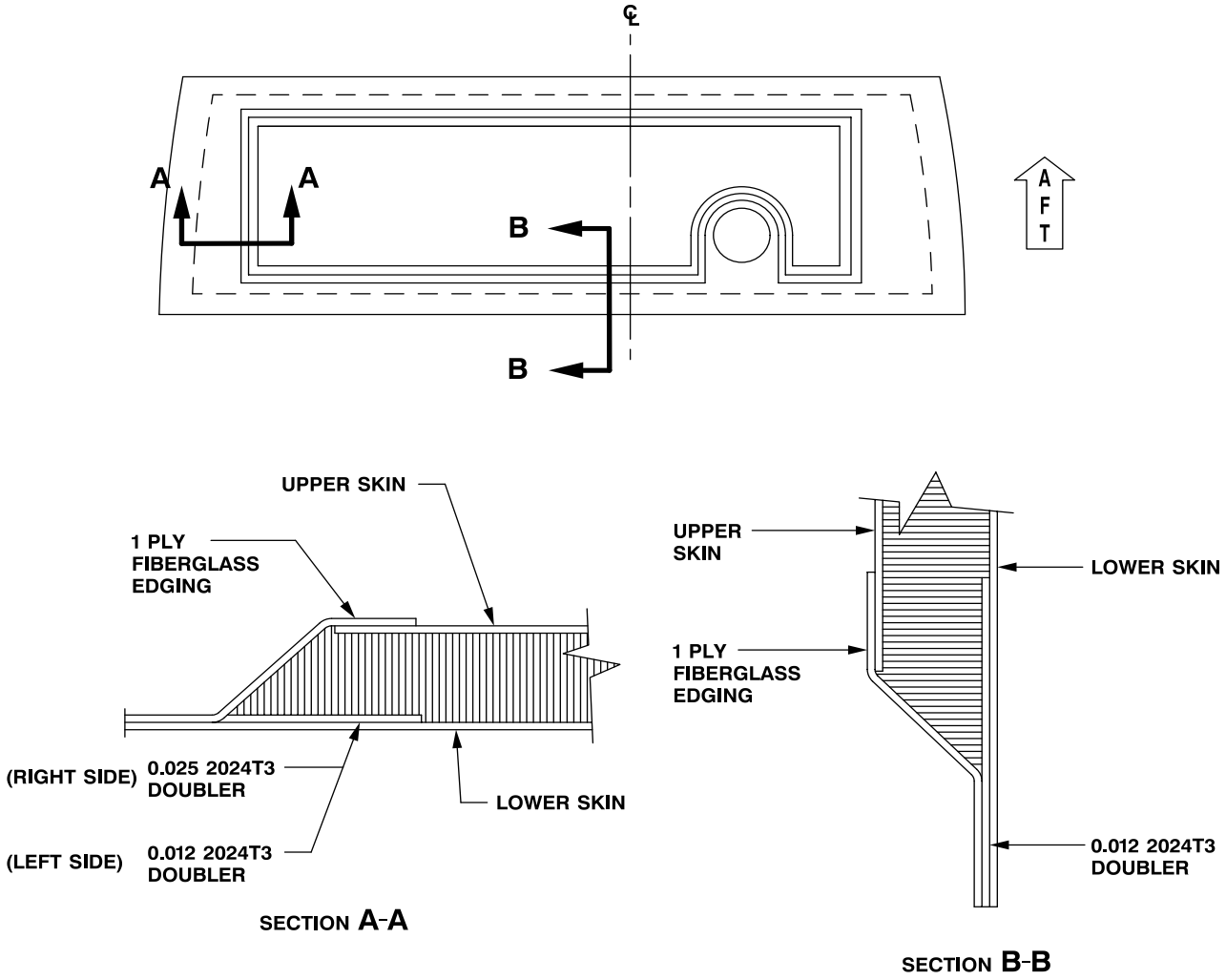
2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



NOTE: Dimensions are in inches.

GENERAL CONSTRUCTION:

UPPER SKIN	0.008 2024T3
LOWER SKIN	0.008 2024T3
CORE	0.500 THICK ALUMINUM HONEYCOMB
EDGING	1 PLY FIBERGLASS EDGING

REPAIR LIMITS:

STANDARD

406030-42-15
J1438

Seatback Electrical Shelf Repair (Sheet 2 of 2)

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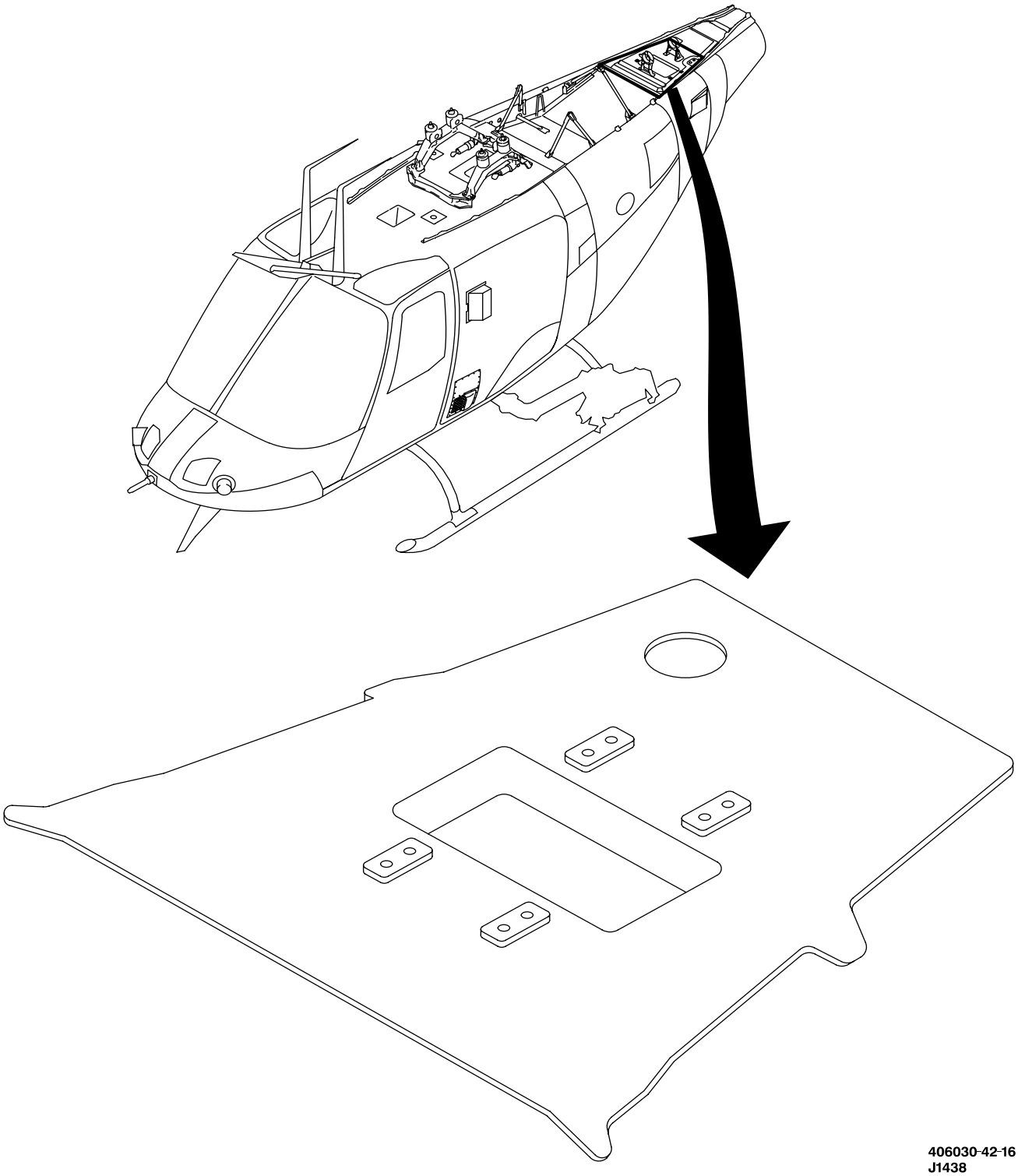
2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



406030-42-16
J1438

Oil Cooler Support Repair (Sheet 1 of 2)

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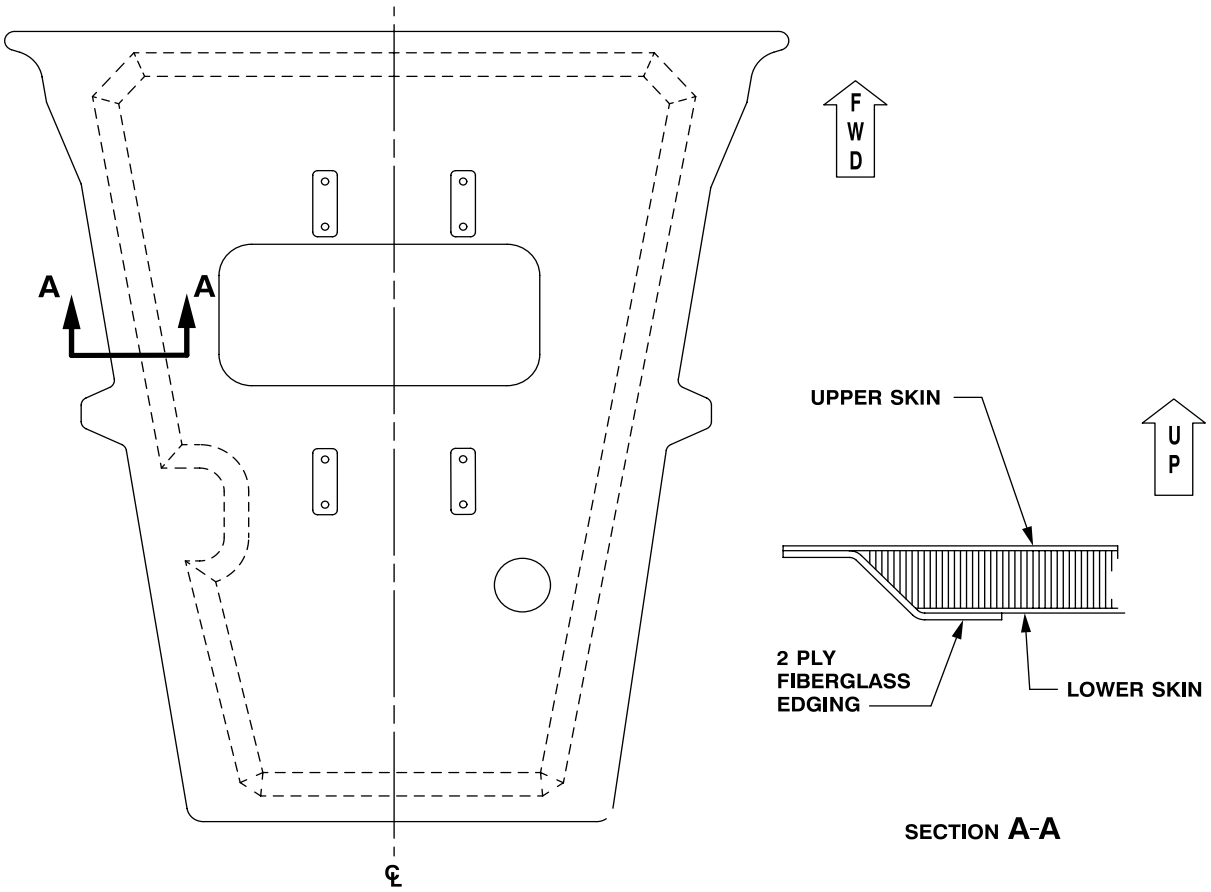


NOTE: Dimensions are in inches.

GENERAL CONSTRUCTION:

UPPER SKIN	0.032 2024T3 SMOOTH
LOWER SKIN	0.020 2024T3 SMOOTH
CORE	1.250 THICK ALUMINUM HONEYCOMB
EDGING	2 PLY FIBERGLASS EDGING

REPAIR LIMITS:

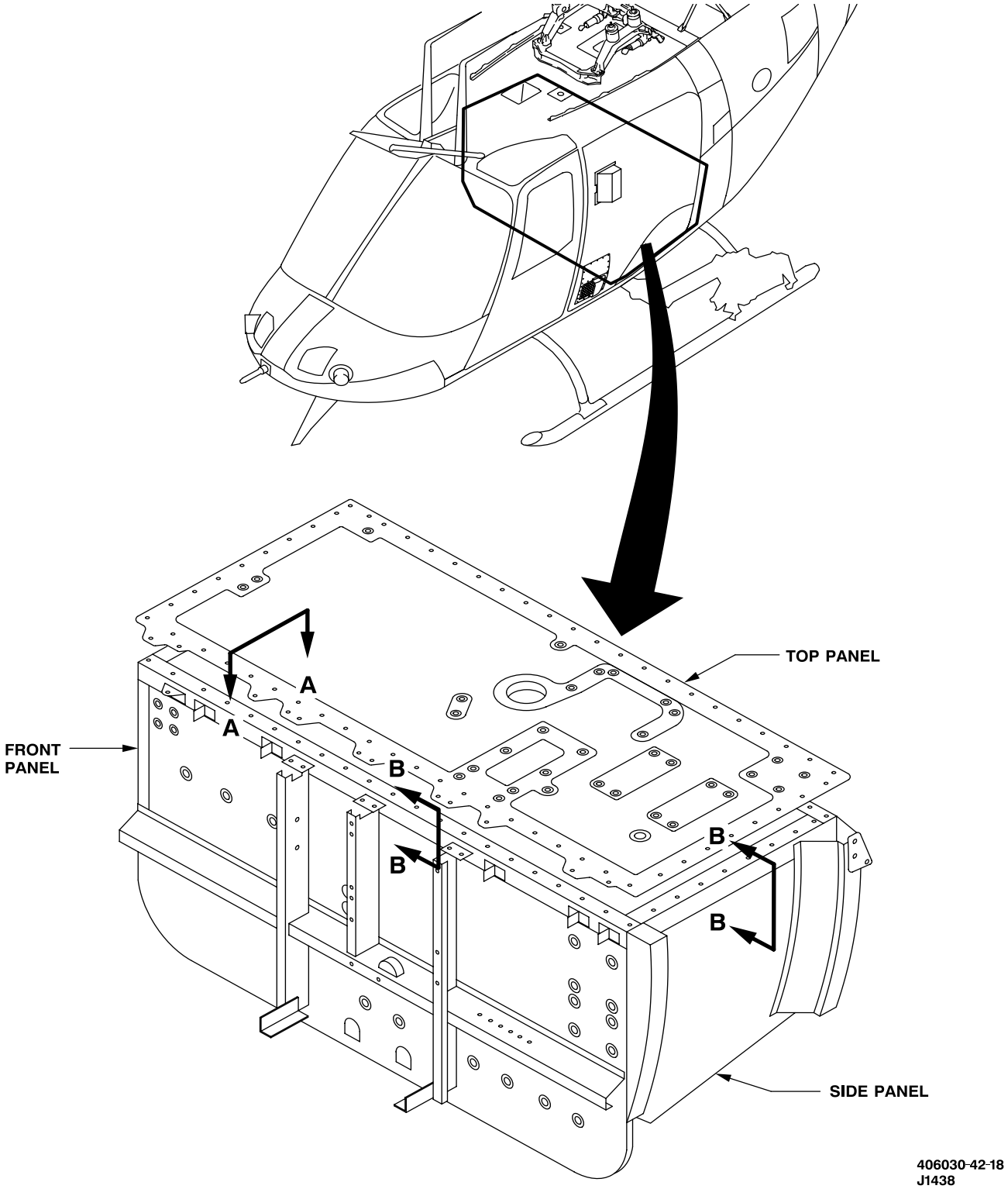
STANDARD EXCEPTION:
No major repairs without AMCOM engineering approval.

406030-42-17
J1438

Oil Cooler Support Repair (Sheet 2 of 2)

GO TO NEXT PAGE

2-2-80. HONEYCOMB PANELS (TYPICAL) — CLEANING/INSPECTION (CONT)



Fuel Cell Cavity and Top Panel (Sheet 1 of 2)

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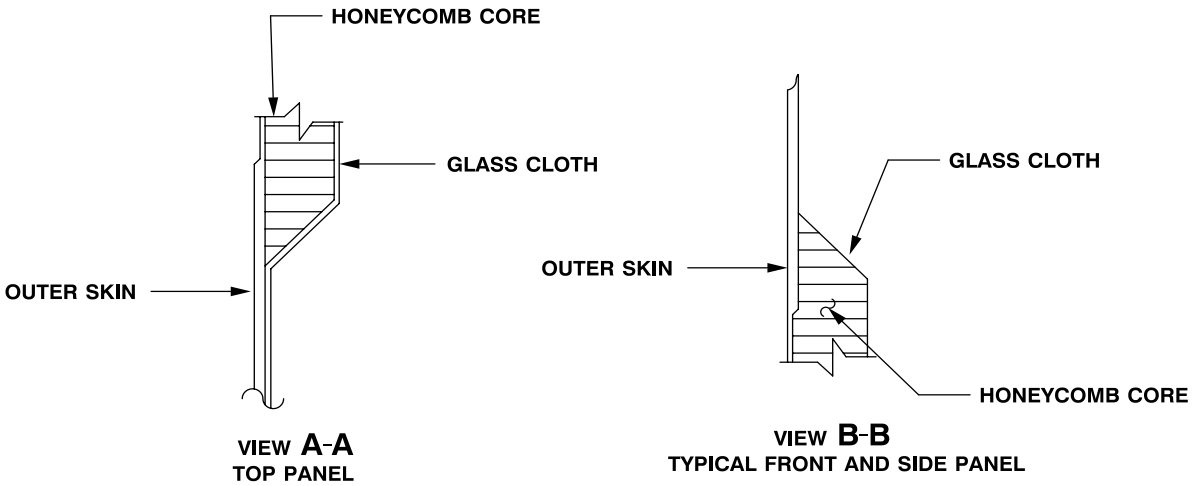


NOTE: Dimensions are in inches.

GENERAL CONSTRUCTION:

OUTER SKIN	
TOP PANEL	0.050 2024T3 CHEM MILLED
FRONT AND SIDE PANEL	0.040 2024T3 CHEM MILLED
INNER SKIN	GLASS CLOTH, 299-947-076, TYPE A
CORE	0.050 THICK ALUMINUM HONEYCOMB

REPAIR LIMITS

STANDARD EXCEPTIONS:

a. No major repairs without AMCOM engineering approval.

b. Note critical mounting surfaces, maintain dimensions of original part.

406030-42-19
J1438

Fuel Cell Cavity and Top Panel (Sheet 2 of 2)

END OF TASK

2-2-81. HONEYCOMB PANELS (TYPICAL) — REPAIR

This task covers: Repair of Honeycomb Panels

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
Paint Spray Gun (B61)

Material:
Drycleaning Solvent (D199)
Acetone (D2)
Naphtha (D141)
Sandpaper (D174)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Polyurethane Top Coating (D150)
Adhesive (D19)
Barrier Material (D48)
Masking Tape (D216)
Cheesecloth (D56)
Wiping Rags (D164)
Adhesive Promoter (D158)
Adhesive Promoter (D159)
Barrier Material (D49)
Lacquer Thinner (D223)
Copper Filled Polyurethane Conductive Coating (D71)
Epoxy Resin (D168)
Cellophane (D55)
Fiberglass Cloth (D101)
Peel Ply Fabric (D102)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
DOD 6050.5-L
TM 1-1500-204-23
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

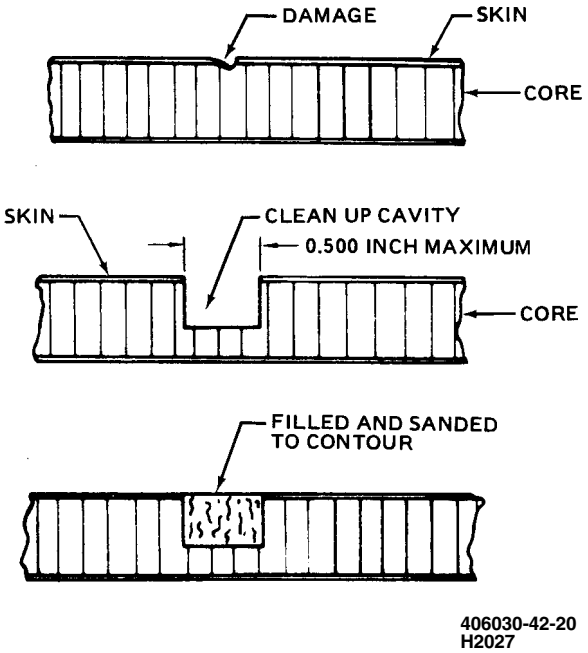
2-2-81. HONEYCOMB PANELS (TYPICAL) — REPAIR (CONT)

CAUTION

Repair at AVUM is limited to minor repair of sheet metal cracks, scratches, corrosion, and loose or missing hardware. These repairs can be accomplished using the airframe repairer tool kit and portable hand tools. If any extensive damage occurs or major repair is required, repairs shall be accomplished by AVIM. If major damage or repairs require jigs and fixtures, repairs shall be accomplished by next higher maintenance level.

NOTE

Bonded panels covered in this task consist of upper cabin roof, forward lower fuselage shell, fuel cell aft bulkhead, lower aft fuselage, upper fairing, electrical compartment floor oil cooler support, and fuel cell cavity panels. Refer to appropriate illustration for location of panel.



406030-42-20
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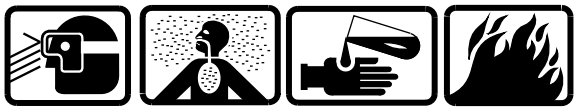
REPAIR

NOTE

This repair applies to either aluminum or fiberglass faced panels and is optional (for appearance only).

1. Repair negligible damage to panel.

   a. Prepare surface for bonding as follows:



Drycleaning Solvent

(1) Clean foreign material from surfaces to be bonded. Use drycleaning solvent (D199) and clean cheesecloth (D56).

Sanding Operations

(2) Thoroughly sand surfaces to be bonded. Use silicon carbide wet or dry 320 or 400 grit sandpaper (D174 or D175) to remove all surface finish, primer, and foreign material.

(3) Mask off sanded surface area with masking tape (D216) to protect surrounding area.

GO TO NEXT PAGE

Drycleaning Solvent

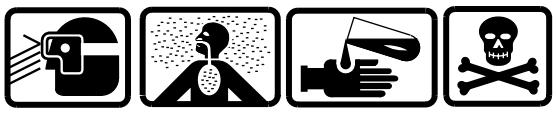
(4) Wipe sanded area using clean cheesecloth (D56) moistened with solvent (D199). Change cheesecloth frequently until all evidence of residue is removed.

Adhesion Promoter

(5) Immediately coat cleaned surface (metal only) with adhesive promoter (D158 or D159). Allow minimum of 30 minutes drying time.

(6) Remove all tape from masked area.

(7) Protect surface from contamination until final bonding is accomplished. Use clean barrier material (D48).



Adhesive

(a) Apply adhesive (D19) and blend to undamaged surface. Allow cure time as required.

(b) Refinish repaired area per instructions in step 8.

2. Repair minor damage to surface of panel.

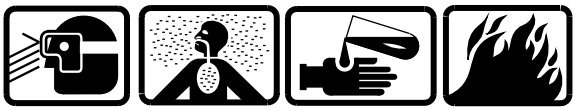
a. Protect opening to prevent entry of cleaning agents and solvents.

b. Remove paint and primer from area extending **3.00 inches** beyond edge of damage. Refer to step 7.

CAUTION

- To prevent further damaging the surrounding area, removal of damaged or voided areas in honeycomb panels shall be accomplished with care. Extreme care must be exercised to prevent damage to inner skin. Use of pointed or sharp tools to extract the loosened, damaged core from the panel will be accomplished with caution.
- Any core or skin contaminated by fuel oil, water, corrosion, or debris shall be cut out.

c. Cut away skin and core to remove all damaged material.



Drycleaning Solvent

d. Flush cavity with drycleaning solvent (D199) to remove all damaged or contaminated material.

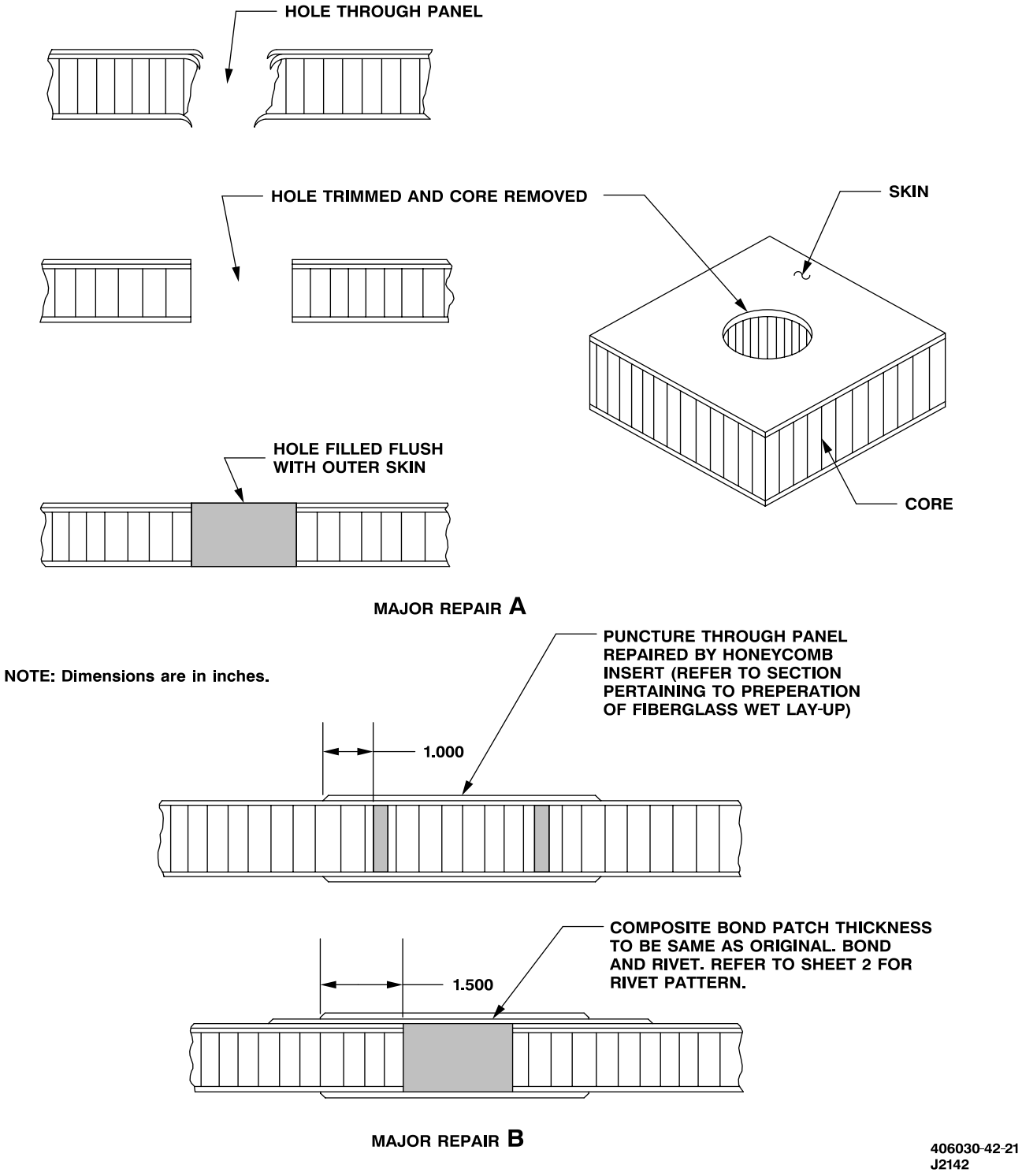
Compressed Air

e. Dry with clean compressed air.

f. Fill cavity with adhesive (D19) and allow to cure.

GO TO NEXT PAGE

2-2-81. HONEYCOMB PANELS (TYPICAL) — REPAIR (CONT)



Honeycomb Panels-Major Damage Repair (Sheet 1 of 2)

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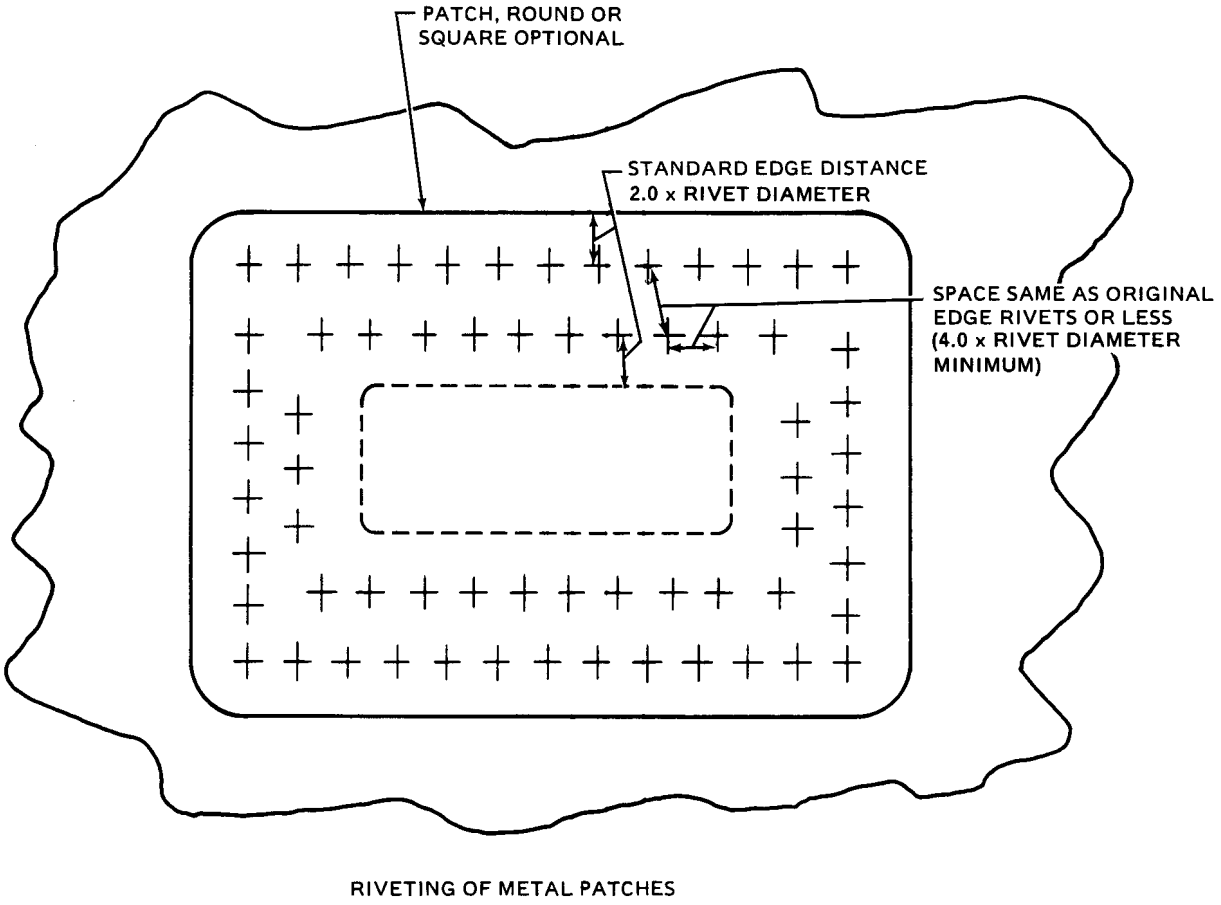


Honeycomb Panels - Major Damage Repair (Sheet 2 of 2)

GO TO NEXT PAGE

Sanding Operations

g. Sand cured adhesive to contour with 320 grit sandpaper (D174).

h. Refinish repaired area per instructions in step 8.

3. Repair minor damage of edge of panel.

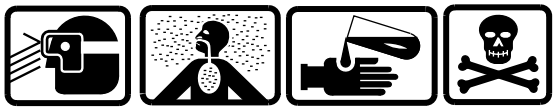
a. Protect opening to prevent entry of cleaning agents and solvents.

b. Remove paint and primer from area extending **3.00 inches** beyond edge of damage. Refer to step 7.

CAUTION

To prevent failure of repair, any core or skin contaminated by fuel, oil, water, corrosion, or debris shall be cut out.

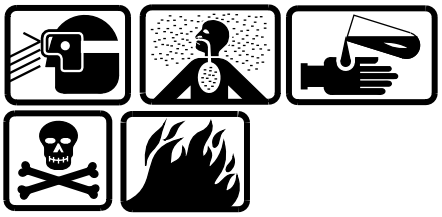
c. Cut away edge skin and core to remove all damaged and contaminated material.



Adhesive

d. Fill damaged area with adhesive (D19). Blend to undamaged surface and allow to cure.

e. Prepare patch layers of fabric to equal number of plies lost to provide minimum of **1.00 inch** overlap outside damaged skin trim and to provide minimum of **1.00 inch** overlap over each preceding layer.



Resins and Hardeners

f. Saturate first patch with epoxy resin (D168). Apply resin to exposed core or filler and to exposed clean area of panel around damage.

g. Fit impregnated patch into place. Smooth out air pockets and wrinkles.

NOTE

Adequate resin shall be forced through the patch ply in the core area.

h. Saturate each succeeding ply with resin and brush coat entire repair area with resin and apply patch. Work each ply to remove wrinkles and entrapped air prior to application of next ply. Minimum number of plies to be same as existing skin.

i. Cover repair with cellophane (D56) and apply firm contact pressure to patch with a weight of 10 to 25 pounds, clamps, or other suitable means.

j. Allow to cure for minimum of 24 hours at 75 to 95°F.

k. Remove cellophane, weight, etc.

Sanding Operations

l. Sand repaired area lightly with 320 grit sandpaper (D174). Remove sanding residue.

m. Refinish repaired area per instructions in step 8.

GO TO NEXT PAGE

4. Repair major damage to surface of panel.

a. Protect opening to prevent entry of cleaning agents and solvents.

b. Remove paint and primer from area extending **3.00 inches** beyond edge of damage. Refer to step 7.

CAUTION

Any core or skin contaminated by fuel, oil, water, corrosion, or debris shall be cut out.

NOTE

Where damage is limited to one skin, the opposite skin may be left intact provided cleanup operations do not cut into the skin.

c. Cut away skins and core to remove all damaged and contaminated material. Use minimum of **0.500 inch** radius at corners.

Drycleaning Solvent

Compressed Air

d. Flush cavity with drycleaning solvent (D199). Dry promptly with clean, dry compressed air.

e. Fill cavity as follows:

Adhesive

(1) Damage of **1.00 inch** or less in diameter may be filled with adhesive (D19) and smoothed to contour of skins.

(2) Damage exceeding **1.00 inch** in diameter to be filled with core plug of like honeycomb material.

(3) Prepare core plug as follows:

(a) Cut core plug (use only clean material of same type as original) to fit damaged area allowing approximately **0.200 inch** gap for adhesive at edges.

(b) Flush plug with drycleaning solvent (D199) and dry immediately with dry filtered air.

(4) Place plug in hole and seal top and bottom surfaces of plug with adhesive (D19).

f. Patch skin as follows:

(1) Fiberglass skins.

NOTE

Fiberglass skin repairs should be accomplished after core plug has cured.

(a) Prepare patch of fabric layers (equal to number of plies lost) to provide minimum of **1.00 inch** overlap outside damaged skin trim and to provide minimum **1.00 inch** overlap over each preceding layer.

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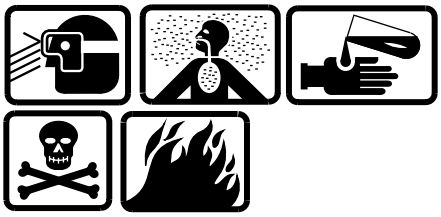


Resins and Hardeners

(b) Saturate first patch with epoxy resin (D168). Apply resin to exposed filler and to exposed clean area of panel around damage.

(c) Fit impregnated patch into place. Smooth out air pockets and wrinkles.

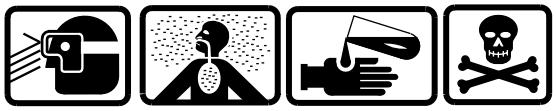
NOTE

Adequate resin shall be forced through the patch ply in the core area.

(d) Saturate each succeeding ply with resin and brush coat entire repair area with resin and apply patch. Work each ply to remove wrinkles and entrapped air prior to application of next ply. Minimum number of plies to be same as existing skin.

(e) Cover repair with cellophane (D55) and apply firm contact pressure to patch with a weight of 10 to 25 pounds, clamps, or other suitable means.

(2) Metal skins.



Adhesive

(a) Cut composite bond patch sufficiently large to provide **1.500 inch** overlap outside of damaged skin trim. Remove peel ply and apply adhesive (D19) to patch (**0.020 to 0.030 inch** thick). Minimum patch thickness to be same as existing skin.

NOTE

Where the panel is curved, the skin patch shall be shaped to match.

(b) Install skin patch over repair area.

(c) Apply pressure to patch in cavity area to ensure good bond.

(d) Add NAS1738B4-1 or M7885/6-4-1 rivets or equivalent around patch in overlapped area at maximum spacing of **1.50 inches** and with 2D edge distance. Rivets are to be installed within pot life of adhesive (TM 1-1500-204-23).

g. Refinish repaired area per instructions in step 8.

5. Repair major damage edge of panel.

a. Protect opening to prevent entry of cleaning agents and solvents.

Activated Desiccant MIL-D-3464

b. Remove paint and primer from area extending **3.00 inches** beyond edge of damage. Refer to step 7.

CAUTION

Any core or skin contaminated by fuel, oil, water, corrosion, or debris shall be cut out.

c. Cut away edge skin and core to remove all damaged and contaminated material. Use minimum of **0.500 inch** radius at all corners of cleanup.

d. If damage is confined to one skin, opposite skin may be left intact provided cleanup can be accomplished without damaging opposite skin.

Drycleaning Solvent

Compressed Air

e. Flush cavity with drycleaning solvent (D199). Dry immediately with clean, dry compressed air.

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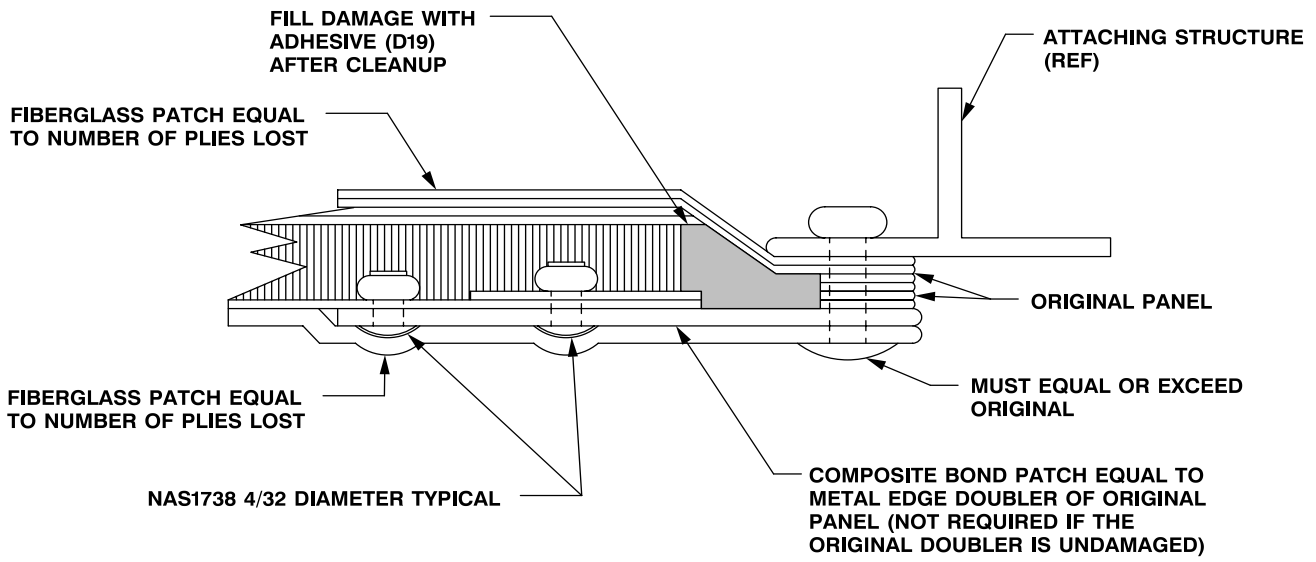
2-2-81. HONEYCOMB PANELS (TYPICAL) — REPAIR (CONT)

FIBERGLASS SKINNED PANELS

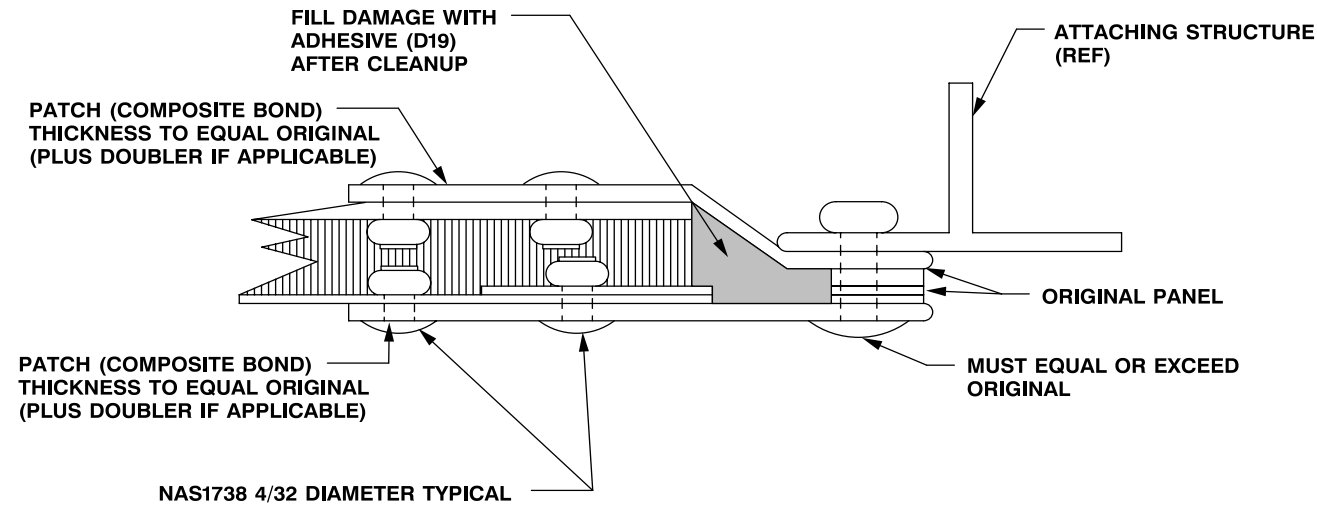


EDGE REPAIR **A**

NOTE

D31 should be used for making fiberglass wet lay-up repairs when a bond to metal is required. Exercise care to ensure that cloth is thoroughly impregnated.

METAL SKINNED PANELS WITH METAL EDGE BEVEL



EDGE REPAIR **B**

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Honeycomb Panels - Edge Damage Repairs (Sheet 1 of 2)

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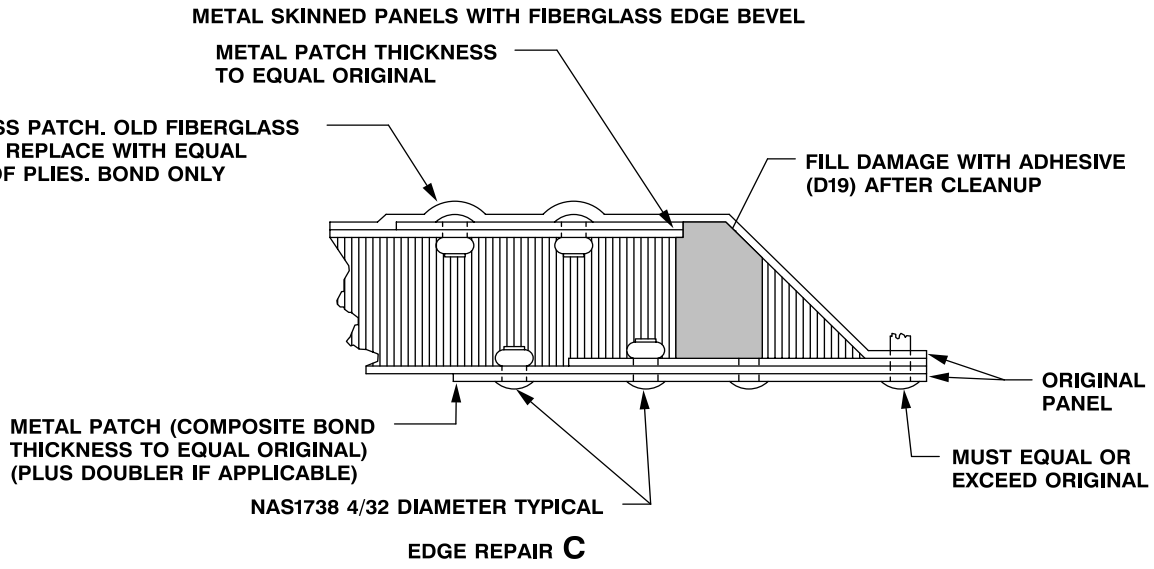
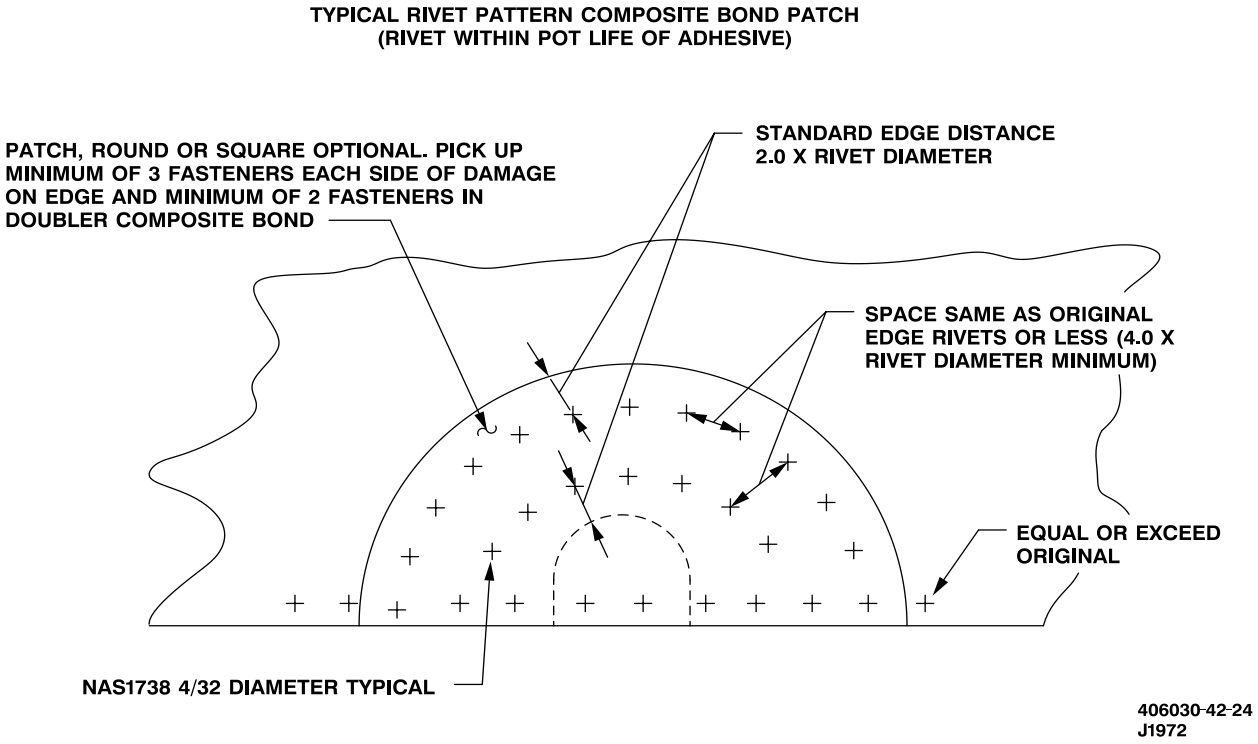
2-2-81. HONEYCOMB PANELS (TYPICAL) — REPAIR (CONT)



NOTE

D31 should be used for making fiberglass wet lay-up repairs when a bond to metal is required. Exercise care to ensure that cloth is thoroughly impregnated.

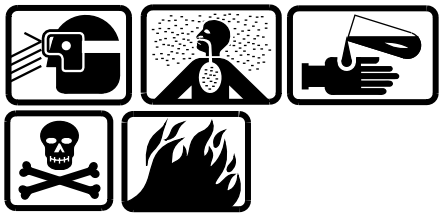


Honeycomb Panels - Edge Damage Repairs (Sheet 2 of 2)

GO TO NEXT PAGE

f. Fiberglass skin repair is as follows:

(1) Prepare patch layers of fabric, equal to number of plies removed, to provide minimum of **1.00 inch** overlap outside damaged skin trim and to provide minimum of **1.00 inch** overlap over each preceding layer.



Resins and Hardeners

(2) Saturate first patch with epoxy resin (D168). Apply epoxy resin to exposed core or filler and to exposed clean area of panel around damage.

(3) Fit impregnated patch into place. Smooth out air pockets and wrinkles.

NOTE

When fiberglass must be bonded to metal, adhesive (D19) shall be used. Care must be exercised to ensure fiberglass is thoroughly impregnated.

(4) Saturate each succeeding ply with resin and brush coat entire repair area with resin and apply patch. Work each ply to remove wrinkles and entrapped air prior to application of next ply. Minimum number of plies to be same as existing skin.

(5) Cover repair with cellophane (D55) and apply firm contact pressure to patch with a weight of 10 to 25 pounds, clamps, or other suitable means.

g. Metal skin repair is as follows:

NOTE

Metal skin patch shall be prebond (composite bond) material. Type and thickness is to be the same as original. Where damage is sustained by the internal edge doubler, the skin patch thickness shall equal the skin and the doubler.

(1) Prepare composite bond patch to extend **1.50 inches** beyond edge of cleanup and to edge of panel.

Adhesive

NOTE

Where edge bevel skin is metal, the patch shall be formed to conform to the edge bevel.

(2) Remove peel ply (D102) and apply adhesive (D19) to patch **(0.020 to 0.030 inch** thick).

(3) Install composite bond patch and apply pressure to patch in cavity area to ensure good bond.

(4) Rivet patch in place. Use row of rivets through patch and skin only. Rivet spacing to be same as panel attachment rivets with minimum of 2D edge distance. Rivets must be installed within pot life of adhesive.

h. Refinish repaired area per instructions in step 8.

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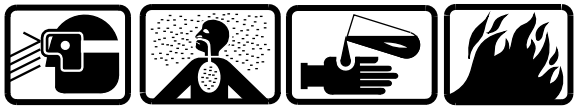
6. Replace damaged, loose, or missing inserts.

Drilling Operations

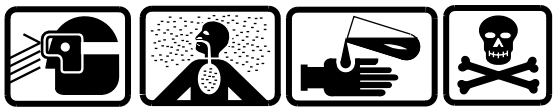
a. Remove insert by drilling with counterbore of same diameter.

b. Remove aged adhesive and damaged honeycomb core from hole.



Acetone

c. Clean new insert with acetone (D2) and air dry.



Adhesive

d. Install insert using procedures shown on illustrations which apply to insert being replaced. Use adhesive (D19).

e. Apply adhesive to cured area, refinish area per instructions in step 8.

INSPECT

7. Remove finish as follows:

a. Remove finish and primer from area extending **3.00 inches** beyond edges of damage.

b. Mask off area to be stripped. Use masking tape (D216) and barrier material (D49).

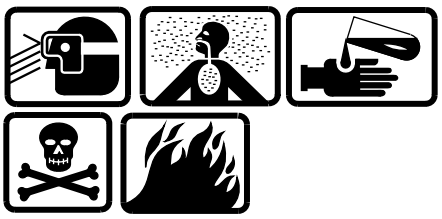
NOTE

Conductive coating and primer coating shall be removed only if damaged and only to extent of damage.

Sanding Operations

c. Use 320 or 400 sandpaper (D174 or D175) to remove top coat, conductive coat, and primer.

Drycleaning Solvent



Naphtha/Naphthalene, TT-N-97

Acetone

Thinner

d. Use cheesecloth (D56) and drycleaning solvent (D199), aliphatic naphtha (D141), acetone (D2), or lacquer thinner (D223) to remove sanding residue.

8. Touch up refinish areas as follows:

NOTE

Touchup of finish is required only in area(s) that is (are) chipped, peeled, or otherwise damaged.

GO TO NEXT PAGE

2-2-81. HONEYCOMB PANELS (TYPICAL) — REPAIR (CONT)

a. Clean area to be refinished using cheesecloth (D56) and drycleaning solvent (D199) or aliphatic naphtha (D141).

b. Dry area by wiping with clean cheesecloth (D56).

c. Mask off area to be painted using masking tape (D216) and barrier material (D48).

d. Apply one coat of epoxy primer coating (D98) (TM 55-1500-345-23).

NOTE

The following steps apply to exterior surfaces as applicable.

e. Apply one coat of copper filled polyurethane conductive coating (D71) (Task 2-2-64).

f. Apply two coats of polyurethane top coating (D150) (Task 2-2-65).

g. Remove all masking tape, barrier material, etc.

h. Replace markings if damaged.

INSPECT

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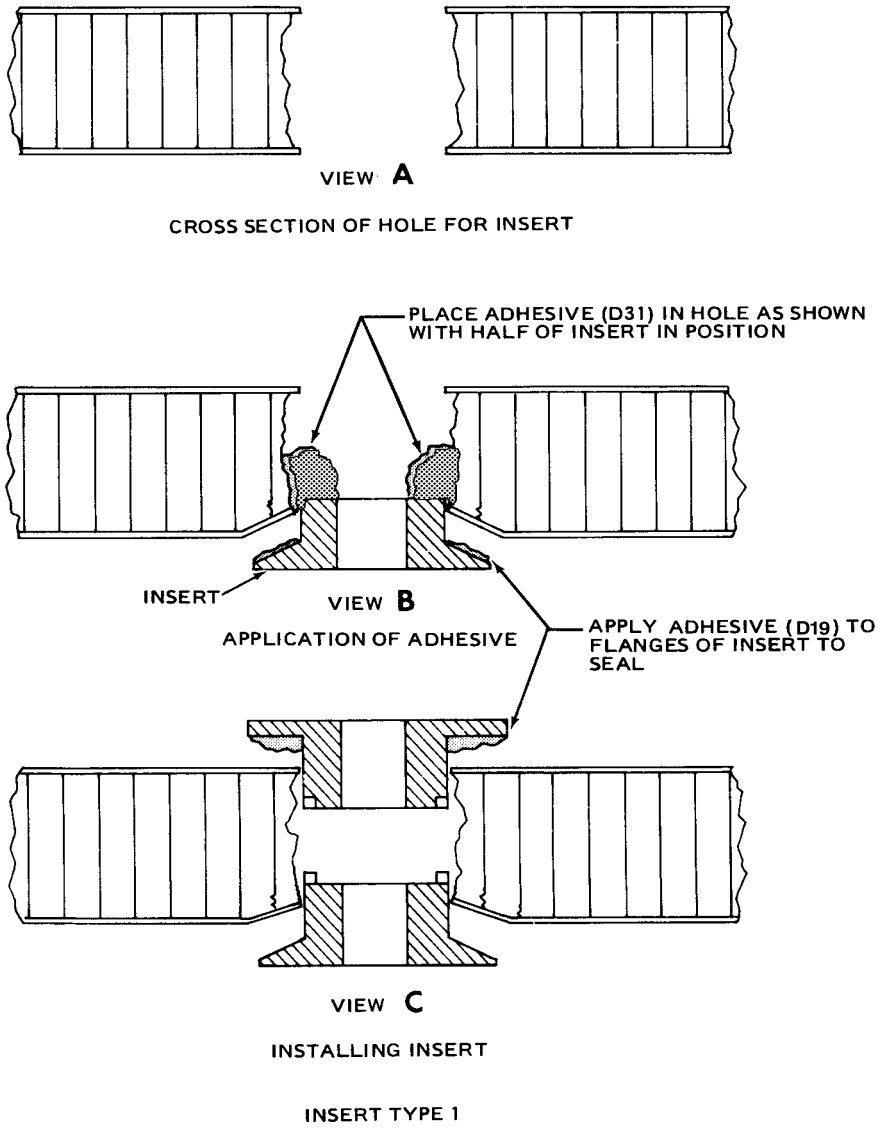
2-2-81. HONEYCOMB PANELS (TYPICAL) — REPAIR (CONT)



Insert Installation - Type 1

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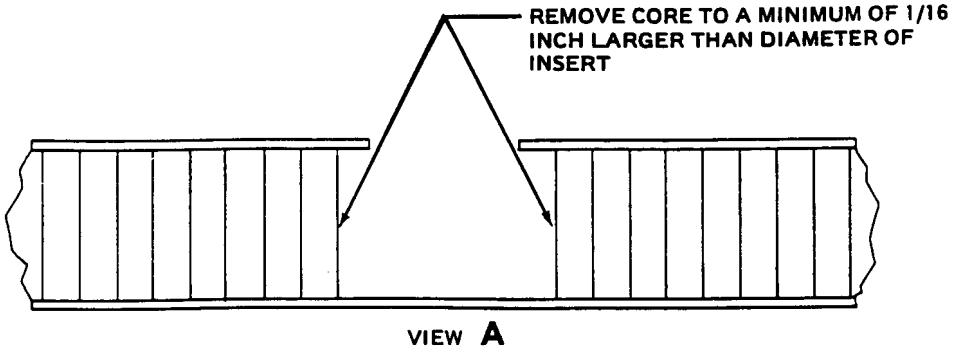

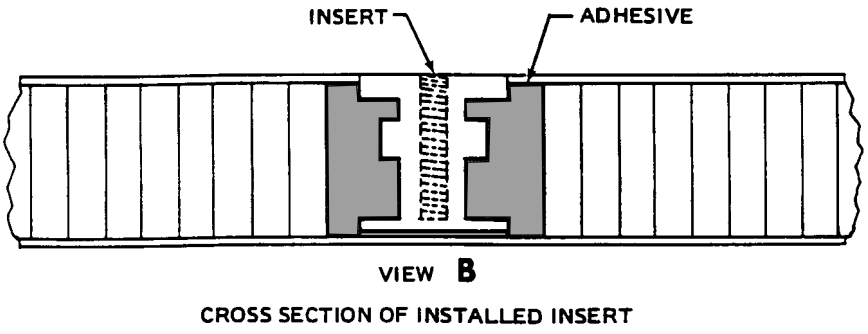

INSERT TYPE 2

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Insert Installation - Type 2

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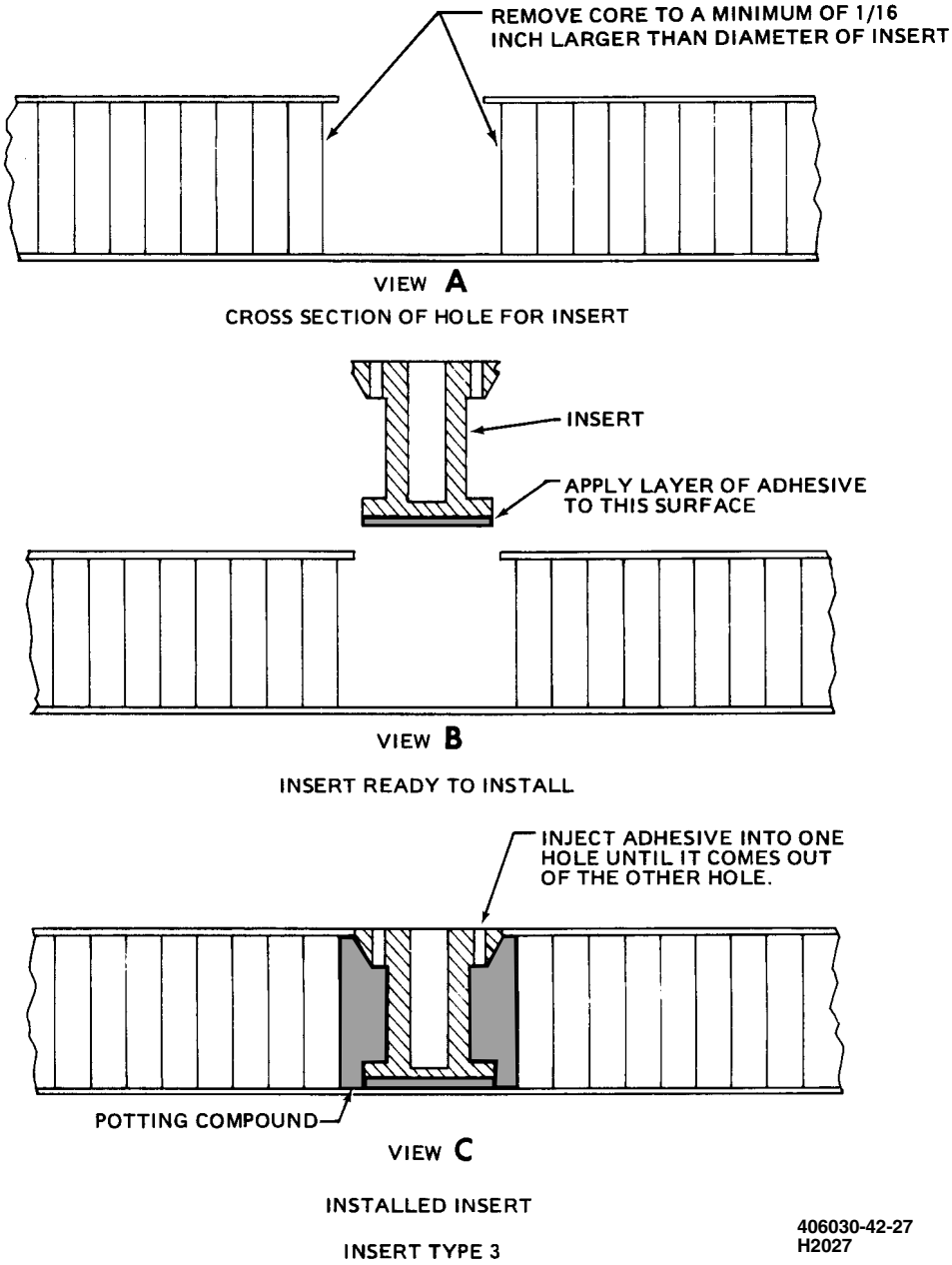
2-2-81. HONEYCOMB PANELS (TYPICAL) — REPAIR (CONT)



Insert Installation - Type 3

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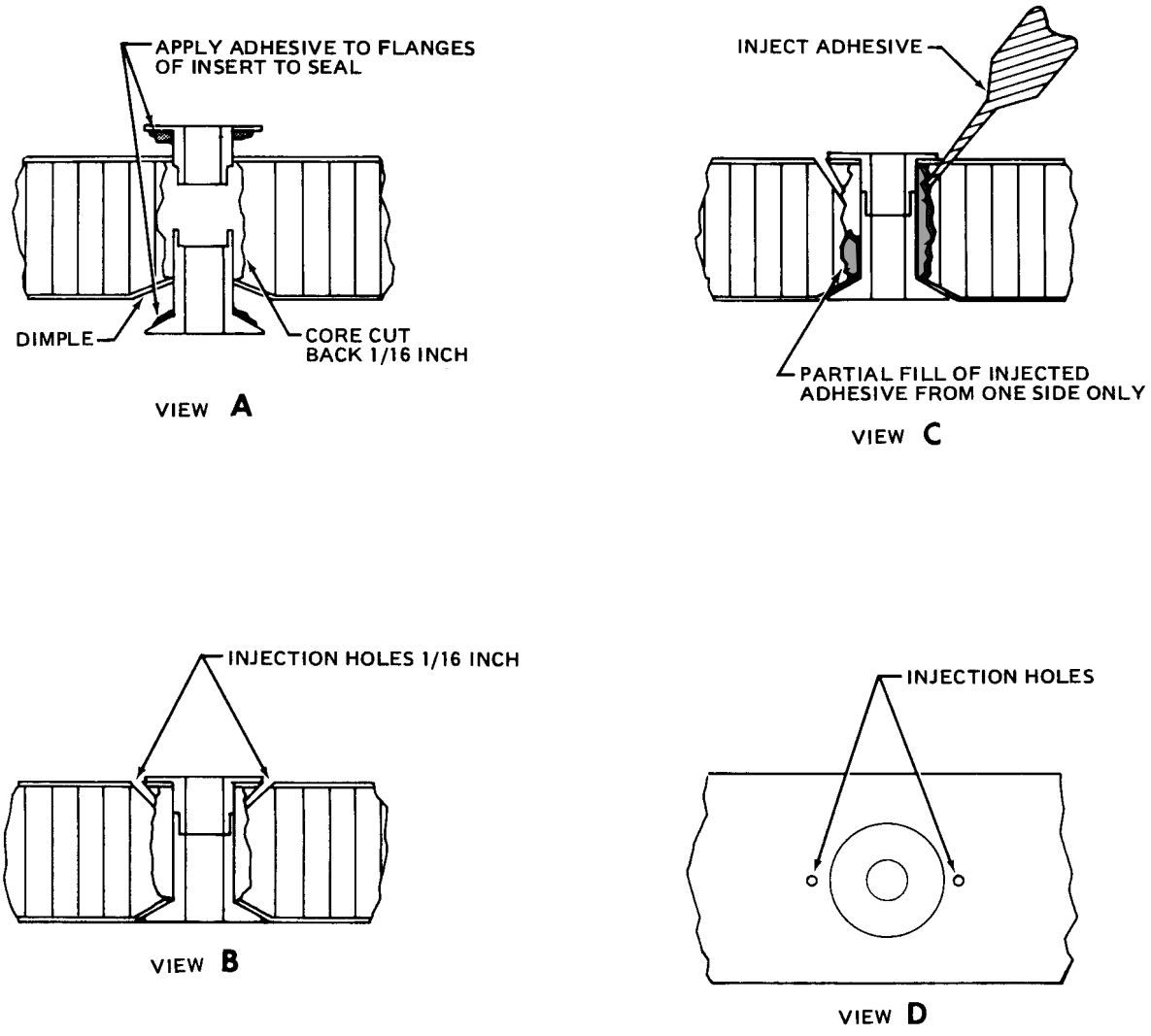


INSERT TYPE 4

406030-42-28
H2027

Insert Installation - Type 4

END OF TASK

2-2-82. AVIONICS SUPPORT — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Low-Lint Cleaning Cloth (D67)
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-82. AVIONICS SUPPORT — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Use drycleaning solvent (D199) and wiping rags (D164) to clean avionics support for inspection.

2. Use low-lint cleaning cloths (D67) to dry avionics shelf.

INSPECT

3. Inspect web (1) of support for nicks, cracks, or other damage.

4. Inspect nutplates (2) for damage or looseness.

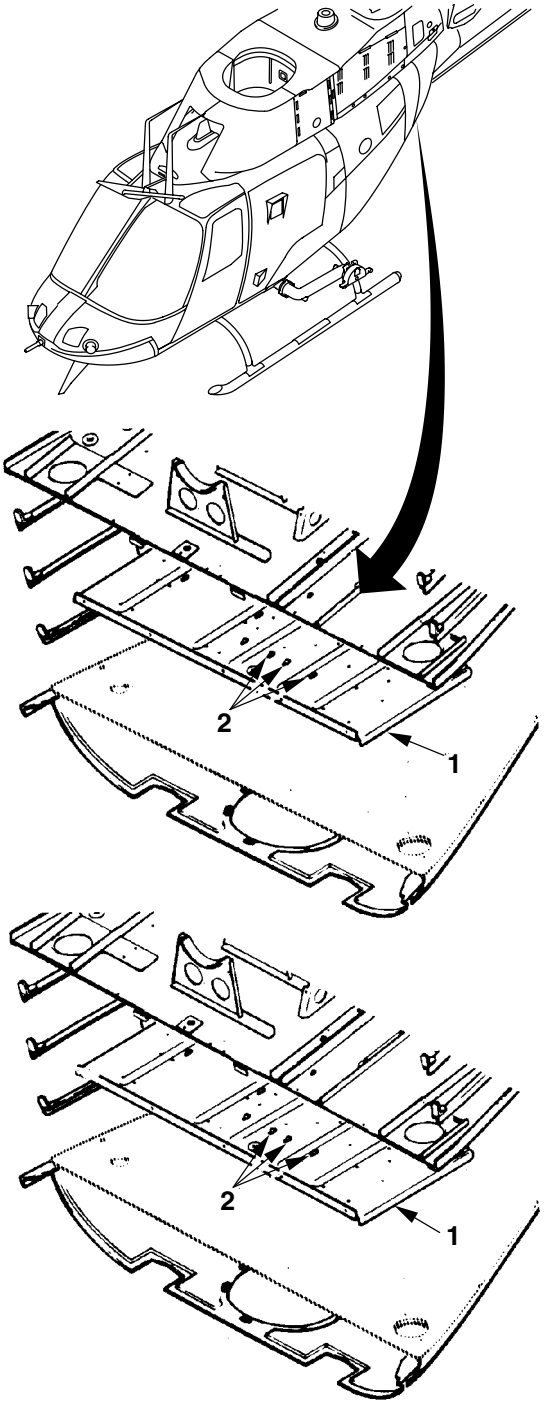
REPAIR

5. Repair damage to web (1) using standard repair procedures in TM 1-1500-204-23.

6. Replace damaged nutplates (2) using procedures in TM 1-1500-204-23.

7. Apply one coat of epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

INSPECT



406030-41
J0424

END OF TASK

2-2-83. RIGHT OR LEFT ACCESS PANEL (TYPICAL) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-83. RIGHT OR LEFT ACCESS PANEL (TYPICAL) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove access panel (1) by removing 16 screws (2) and 16 washers (3).

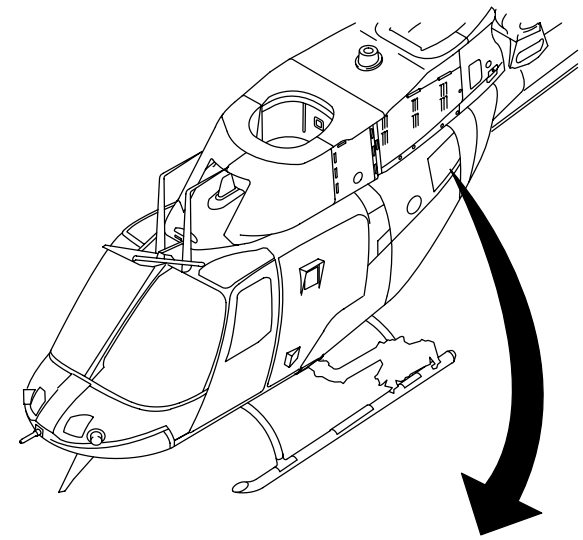
INSTALL

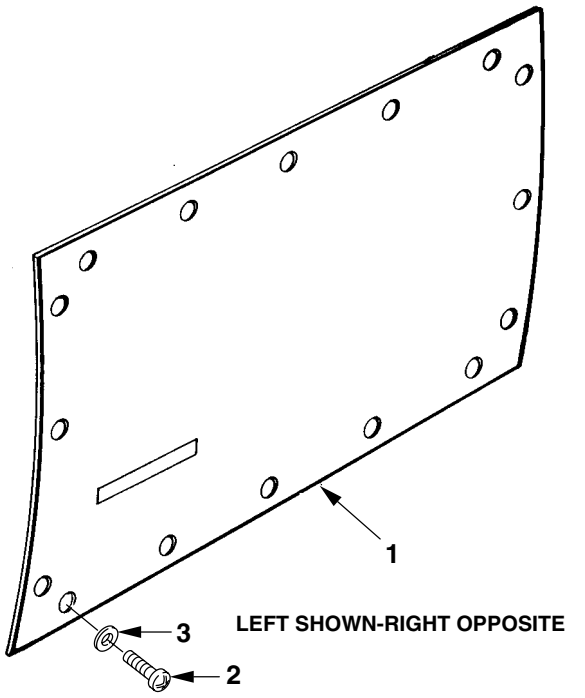
WARNING

To prevent injury to personnel, structural panels shall be installed prior to helicopter hovering or flight operations.

2. Install access panel (1) by attaching 16 screws (2) and 16 washers (3).

INSPECT





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J0424

END OF TASK

2-2-84. RIGHT OR LEFT ACCESS PANEL (TYPICAL) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Heat Gun (B59)
Plastic Scraper (B123)

Material:
Drycleaning Solvent (D199)
Acetone (D2)
Abrasive Pads (D1)
Wiping Rags (D164)
Thermosetting Adhesive (D32)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Right or Left Access Panel Removed (Task 2-2-83)

GO TO NEXT PAGE

2-2-84. RIGHT OR LEFT ACCESS PANEL (TYPICAL) — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

1. Clean access panel (1).

Drycleaning Solvent

2. Use drycleaning solvent (D199) and wiping rags (D164) to remove oil and grease for purpose of inspection.

3. Use wiping rags (D164) to dry access panel (1).

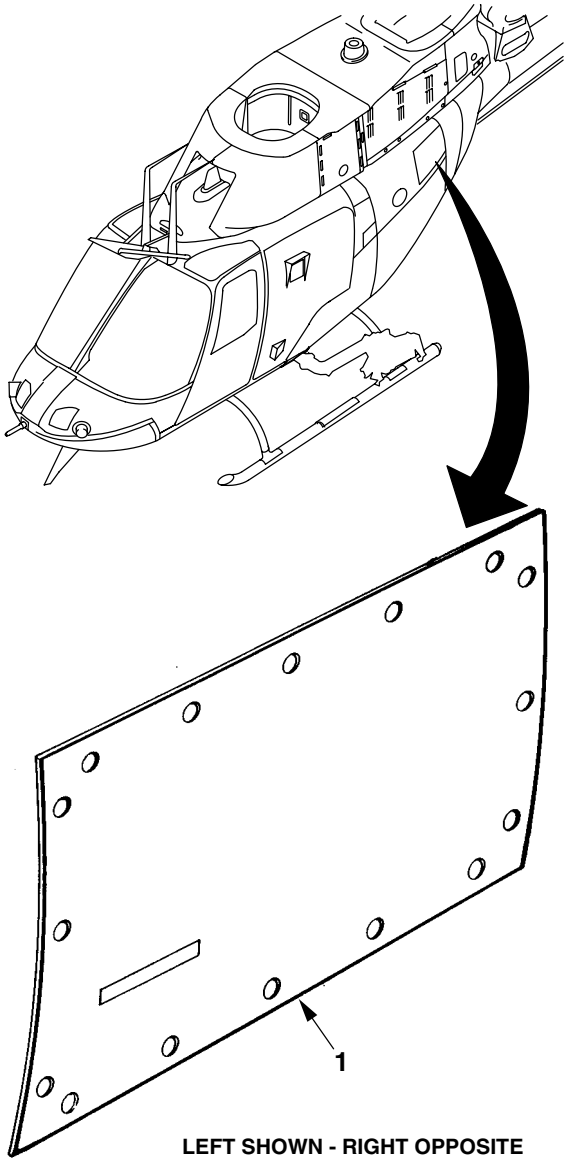
INSPECT

4. Inspect access panel (1) for following:

   a. Damage

   b. Cracks

   c. Wear.



LEFT SHOWN - RIGHT OPPOSITE

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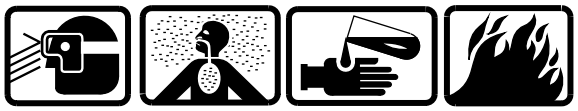
2-2-84. RIGHT OR LEFT ACCESS PANEL (TYPICAL) — CLEANING/INSPECTION/REPAIR (CONT)

5. Inspect seal (2) for the following:
   a. Cracks
   b. Cuts
   c. Worn areas
   d. Deterioration.

REPAIR

6. Replace unserviceable seal (2) as follows:
   a. Remove unserviceable seal (2).



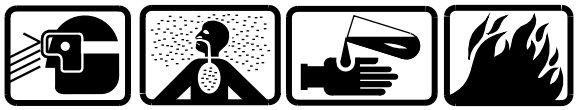
Acetone

b. Use plastic scraper (B123), acetone (D2), and abrasive pads (D1) to remove old adhesives from access panel (1).

c. Use wiping rags (D164) and acetone (D2) to remove residue and dry access panel (1).

d. Align seal (2) on access panel (1) and cut/trim seal (2) as necessary for desired fit.

e. Remove seal (2) from access panel (1).



Adhesive

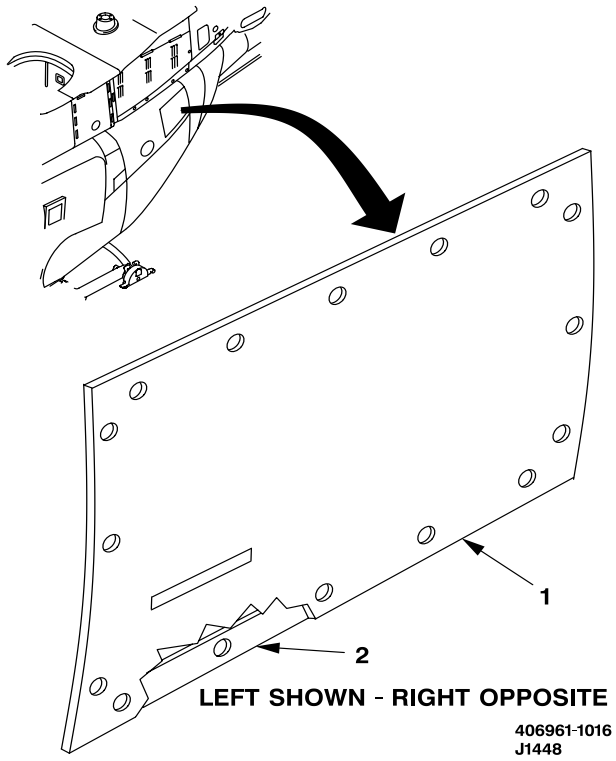
f. Brush thermosetting adhesive (D32) on seal mounting surface of access panel (1).

g. Position seal (2) on access panel (1) and apply sufficient pressure for firm contact of bonding surfaces.

h. Heat cure thermosetting adhesive (D32) by using heat gun (B59) on bondline at 325 to 340 °F for 45 minutes.

7. Repair cracks, cuts, and punctures using accepted sheet metal practices (TM 1-1500-204-23).

8. Replace access panel (1) if damage will inhibit normal usage.



LEFT SHOWN - RIGHT OPPOSITE

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INSPECT

FOLLOW-ON MAINTENANCE

Install right or left access panel (Task 2-2-83).

END OF TASK

2-2-85. CABIN ROOF DRAIN — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Rubber Gloves (D111)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

CLEAN

Drycleaning Solvent

1. Clean flange areas with drycleaning solvent (D199) with wiping rag (D164).

INSPECT

2. Inspect metal tube assembly (1) for dents, kinks, and cracks.

3. Inspect rubber tube assembly (2) for cuts and general deterioration.

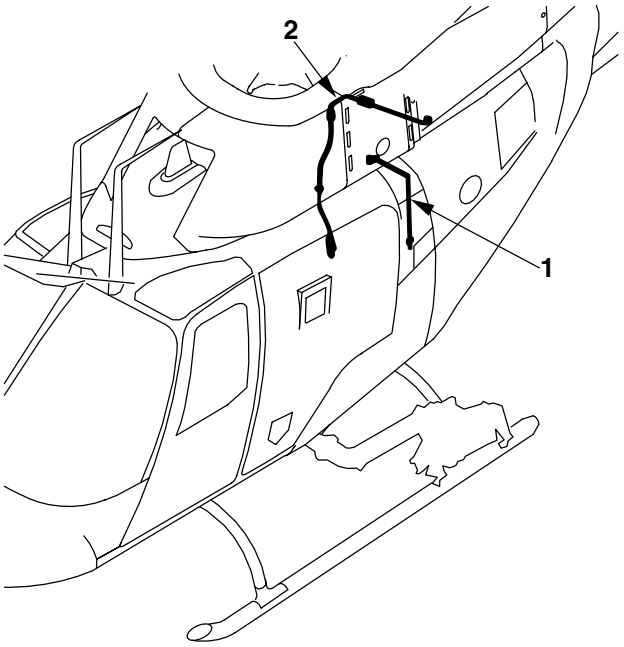
4. Inspect rivets around flange areas for looseness and popped rivet heads.

REPAIR

5. Replace metal tubing having dents, kinks, cracks, or twisted areas.

6. Replace rubber tube not meeting inspection.

7. Replace rivets not meeting inspection in accordance with TM 1-1500-204-23.



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END OF TASK

2-2-86. HARD POINTS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 1-1500-344-23
TM 1-1520-266-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

CLEAN

Drycleaning Solvent

1. Use drycleaning solvent (D199) and wiping rags (D164) to clean all hard points.

2. Wipe dry with clean dry wiping rags (D164).

INSPECT

3. Inspect all hard points for evidence of physical damage, wear, cracks, and corrosion (TM 1-1500-344-23). If cracks in hard points are suspected perform magnetic particle inspection (TM 1-1520-266-23).

REPAIR

4. Replace hard points which fail inspection (TM 1-1500-204-23).

INSPECT

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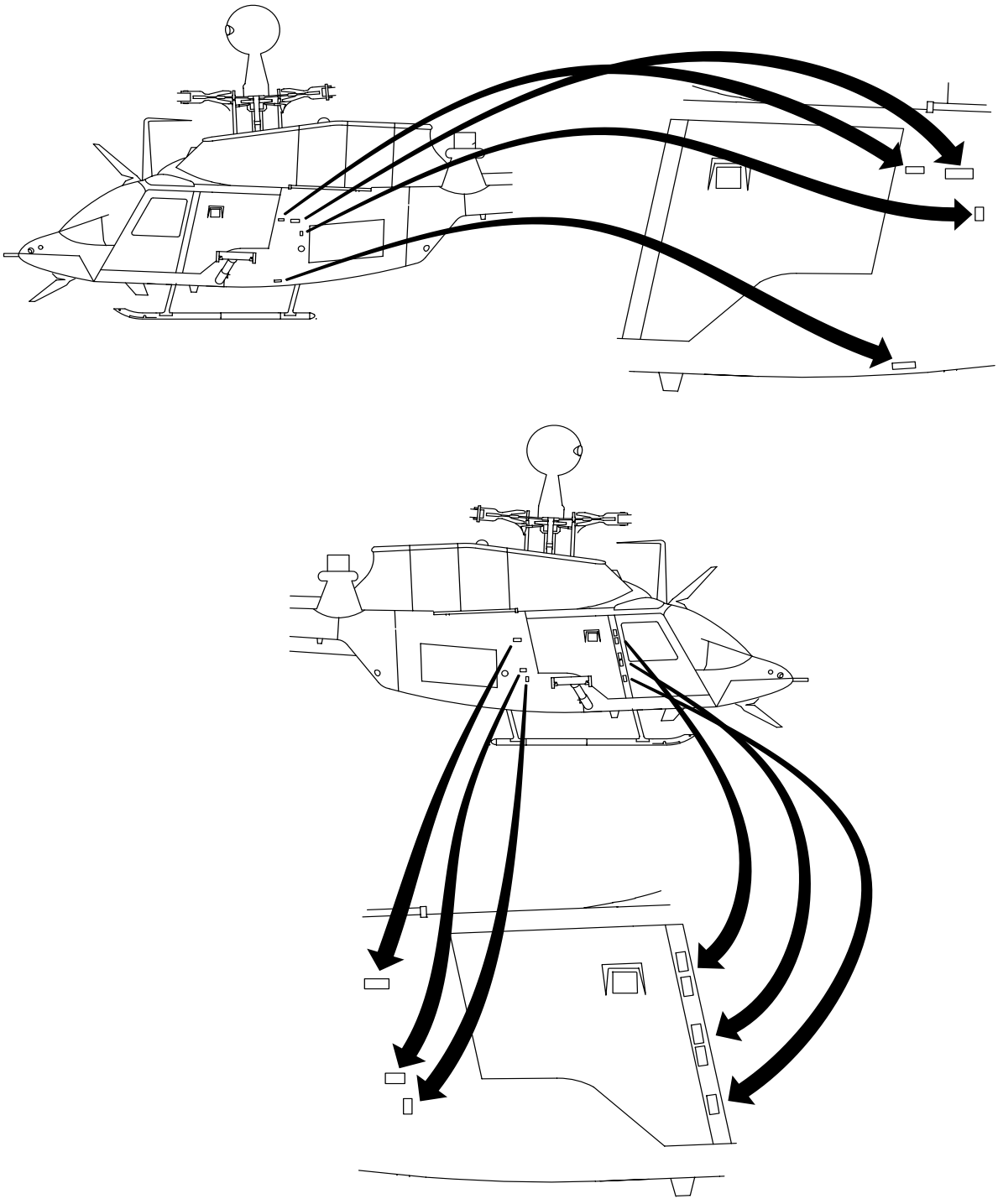

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Hard Points

END OF TASK

2-2-87. CREW DOORS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Cheesecloth (D56)
Drycleaning Solvent (D199)
Polishing Compound (D154)
Rubber Gloves (D111)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 1-1500-344-23

Equipment Condition:
Helicopter Safed (1-6-7)

GO TO NEXT PAGE

NOTE

These procedures are applicable to all crew doors, including those with scratch resistant windows.

CLEAN

CAUTION

To prevent damaging surfaces beyond repair, windows shall not be exposed to solvents. Protect polished surfaces from abrasion and marring.

1. Clean crew door (1), window (2), and snap vent (3) (Task 1-4-11).

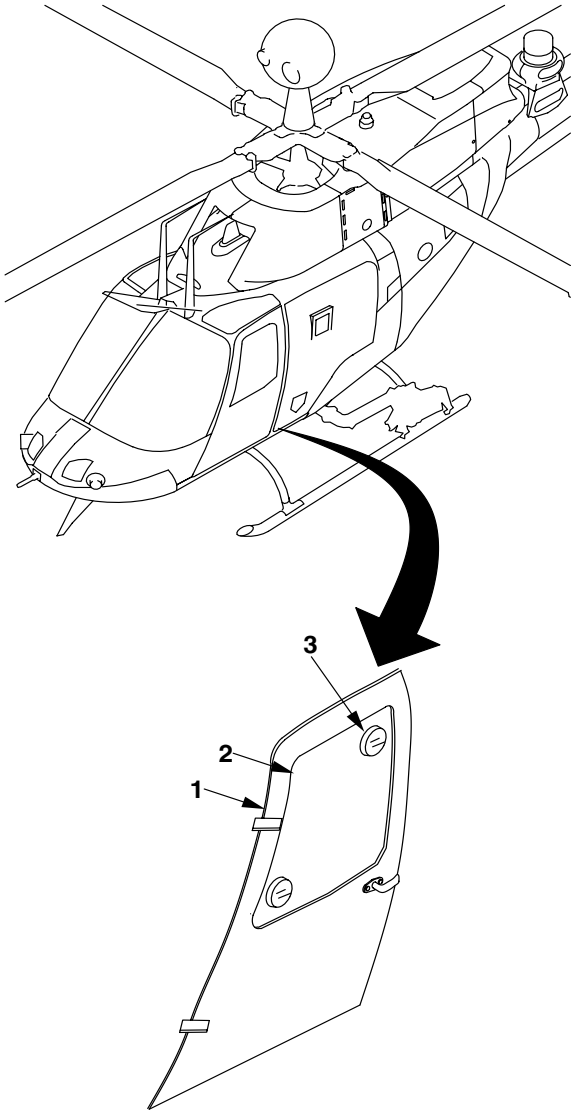
Drycleaning Solvent

2. Use drycleaning solvent (D199) and wiping rags (D164) to remove oil and grease for purpose of inspection.

3. Use wiping rags (D164) to dry access door (1).

INSPECT

4. Inspect crew door (1) to determine if negligible or reparable damage exists.



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2-2-87. CREW DOORS — CLEANING/INSPECTION/REPAIR (CONT)

a. Negligible damage.

(1) Nicks and Scratches — Away from radius areas, less than **2.00 inches** long and less than 10 percent of material thickness in depth after cleanup.

(2) Smooth Contoured Dents — Free of cracks or nicks. A minimum of **1.00 inch** undamaged material must exist between dents and supporting structure or edges. Dent limits are as follows:

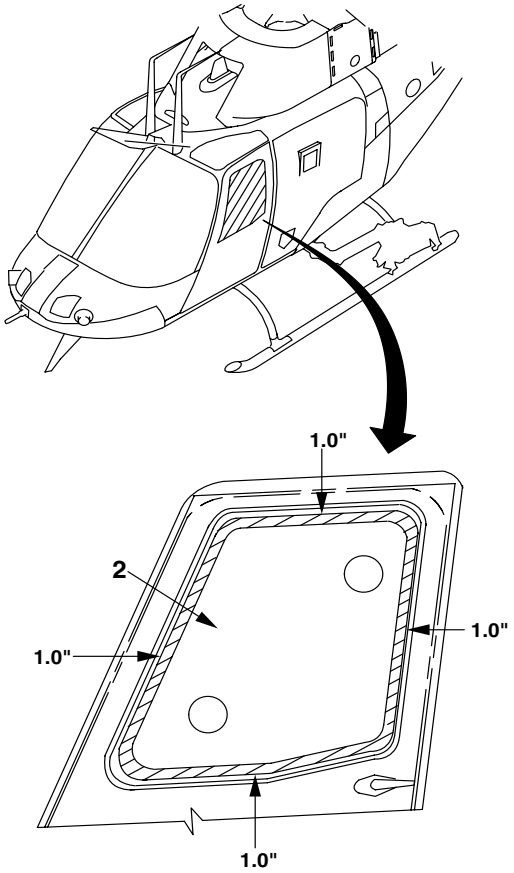
DIAMETER (INCH)	DEPTH (INCH)
1.00	0.015
2.00	0.046
3.00	0.062

(3) Corrosion Damage — Less than 10 percent of material thickness in depth and covering less than 10 percent of panel area after cleanup and treatment (TM 1-1500-344-23).

b. Reparable damage (exceeding negligible damage) are repairs limited to skin damage of areas smaller than 20 percent of skin panel area and replacement of any loose or missing rivets.

5. Inspect crew door windows (2) for damage/condition and limits as shown.

6. Using cheesecloth (D56) and polishing compound (D154), polish out scratches, abrasions, and pits.



CREW DOOR WINDOWS

AREA A

Scratches and pits may be polished out to the extent vision is not distorted. Distortion of vision is cause for replacement. Cracks, holes, or other damage may be temporarily repaired, if vision of crew members will not be impaired, by stop drilling, patching, or other approved methods (TM 1-1500-204-23), but window must be replaced at the earliest opportunity.

AREA B

Scratches and pits are permitted in this area, providing the structural integrity of the window is not impaired. Cracks, holes, or other damage will not be repaired by drilling.

406032-47-2
J0859

GO TO NEXT PAGE

2-2-87. CREW DOORS — CLEANING/INSPECTION/REPAIR (CONT)

7. Inspect crew door jettison mechanism (4) (Task 2-2-12).

8. Inspect crew door latch assembly (5) (Task 2-2-13).

9. Inspect chafing strips (6) (Task 2-2-5).

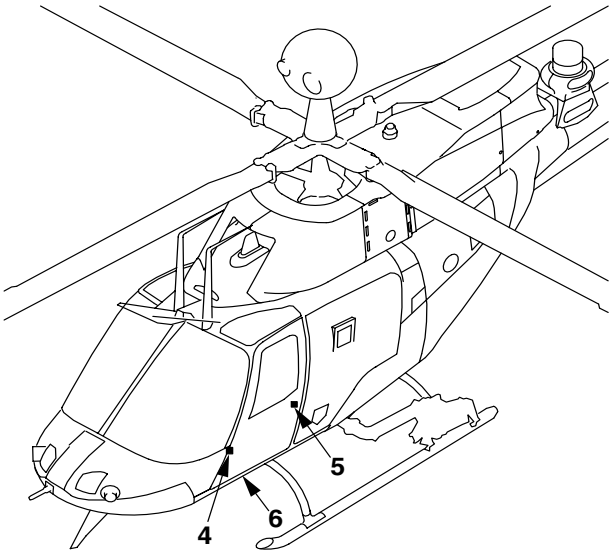
10. Inspect door seals for the following:

a. Cracks

b. Cuts

c. Worn areas

d. Deterioration.



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REPAIR

11. Repair damage which exceeds negligible damage limits.

a. Replace crew door if damage exceeds 20 percent of door skin area (Task 2-2-10).

b. Replace crew door if damage inhibits normal usage of door (Task 2-2-10).

c. Replace broken window (Task 2-2-88).

d. Repair cracks, cuts, punctures, missing hardware, damaged fasteners, and loose or missing rivets using accepted sheet metal practice (TM 1-1500-204-23).

INSPECT

END OF TASK

2-2-88. CREW DOOR WINDOW — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Plastic Scraper (B123)

Material:
Silicone Adhesive (D36)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Crew Door Removed (Task 2-2-10)

REMOVE

NOTE

Procedure for replacing window in crew door on right side is the same as shown for left side.

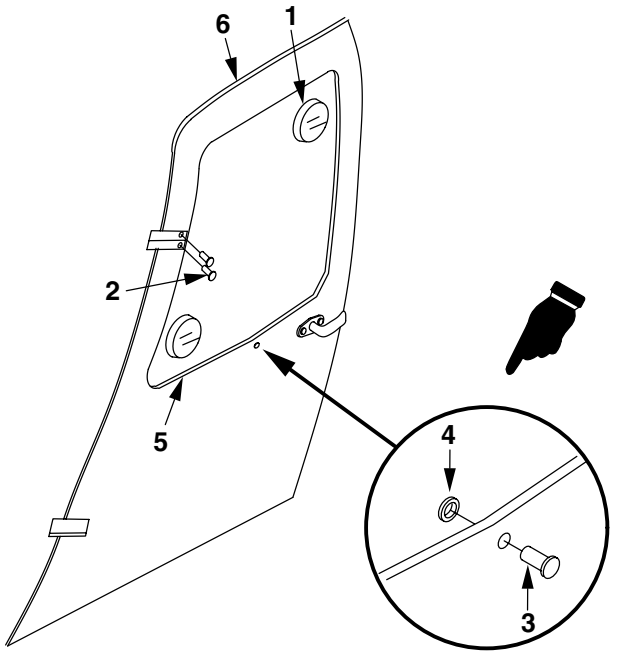
1. Remove two snap vents (1) (Task 2-2-9).

2. Remove two rivets (2) in accordance with TM 1-1500-204-23.

3. Remove 51 rivets (3) and washers (4) in accordance with TM 1-1500-204-23.

4. Use a plastic scraper (B123) to remove window (5) from crew door (6).

5. Use a plastic scraper (B123) to remove adhesive residue from window frame area of crew door (6).



406032-48
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2-2-88. CREW DOOR WINDOW — REMOVAL/INSTALLATION (CONT)

INSTALL

CAUTION

To prevent damage to window, window shall not be exposed to solvents. Polished surfaces shall be protected from abrasion and marring.

NOTE

Outline of window opening in crew door may be marked on window using a soft marking pen or pencil. Window shall be trimmed only as required for fit.

6. Place window (5) on door frame. Check for equal overlap on all sides. Minimum overlap is **0.50 inch**.

Adhesive

7. Coat mating surfaces of crew door (6) and window (5) with adhesive (D36).

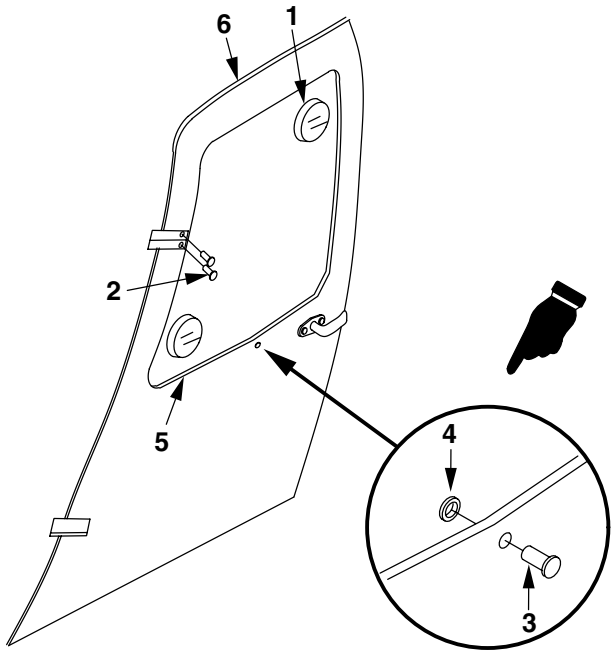
Drilling Operations

8. Hold window (5) in place on crew door (6). Progressively drill rivet holes and use holders to attach window (5) to crew door (6). Maintain minimum overlap of window (5). Pick up existing rivet hole pattern from door frame.

9. Maintain contour of crew door (6) as window (5) is installed.

10. Install every fifth rivet (3) and washer (4) in accordance with TM 1-1500-204-23.

11. Install two rivets (2) in accordance with TM 1-1500-204-23.



406032-48
J0424

12. Install remainder of 51 rivets (3) and washers (4) in accordance with TM 1-1500-204-23.

13. Use a plastic scraper (B123) to remove excess adhesive.

14. Install two snap vents (1) (Task 2-2-9).

15. Clean window (5) (Task 1-4-11).

INSPECT

FOLLOW-ON MAINTENANCE

Install crew door (Task 2-2-10).

END OF TASK

2-2-89. AFT ELECTRICAL/AVIONICS DOOR — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-89. AFT ELECTRICAL/AVIONICS DOOR — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Open aft electrical/avionics door (1).

2. Remove screw (2), washer (3), and chain (4) from aft electrical/avionics door (1).

3. Remove cotter pin (5).

4. Remove nut (6), two washers (7), and screw (8).

5. Repeat steps 3, and 4, at second hinge assembly.

6. Remove aft electrical/avionics door (1).

INSTALL

7. Place aft electrical/avionics door (1) in position on helicopter.

8. Install screw (8) with washer (7) through hinge assembly.

9. Install washer (7) and nut (6).

10. Tighten nut (6) and align hole in screw (8) with slot in nut (6).

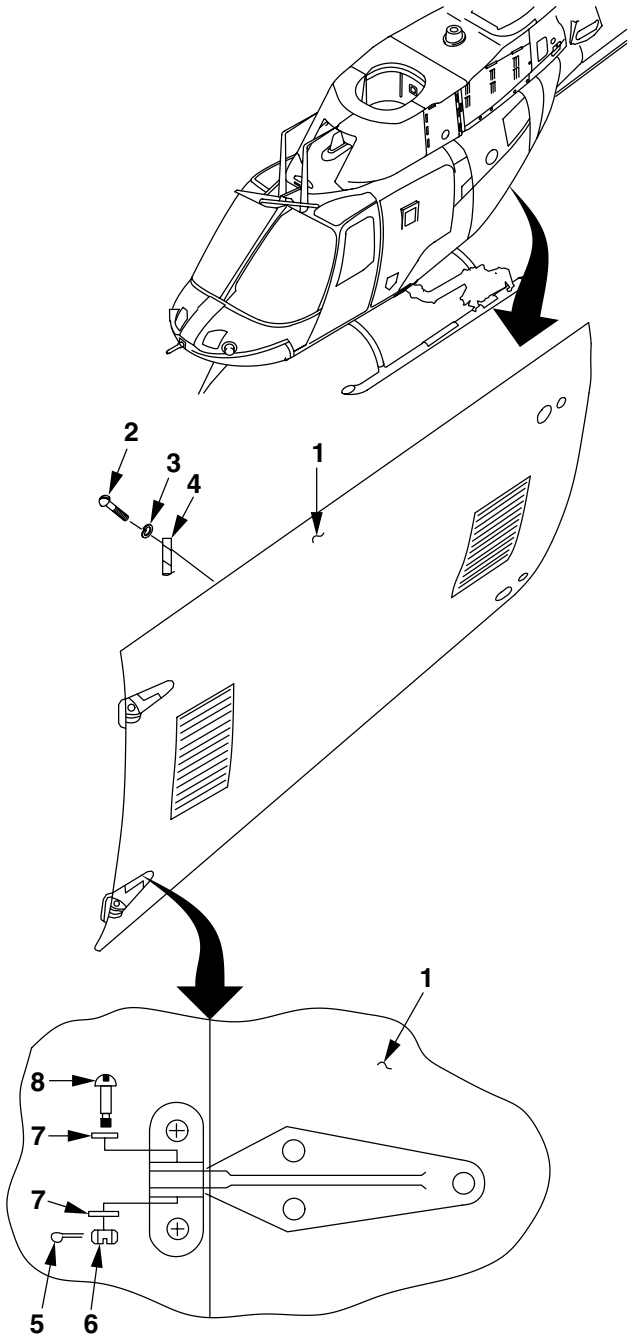
11. Install cotter pin (5) through nut (6).

12. Repeat steps 8. through 11. at second hinge assembly.

13. Connect chain (4) to door by installing screw (2) and washer (3). Tighten screw (2).

14. Close aft electrical/avionics door (1).

INSPECT



TYPICAL TWO PLACES

406032-52
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END OF TASK

2-2-90. AFT ELECTRICAL/AVIONICS DOOR — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repair
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

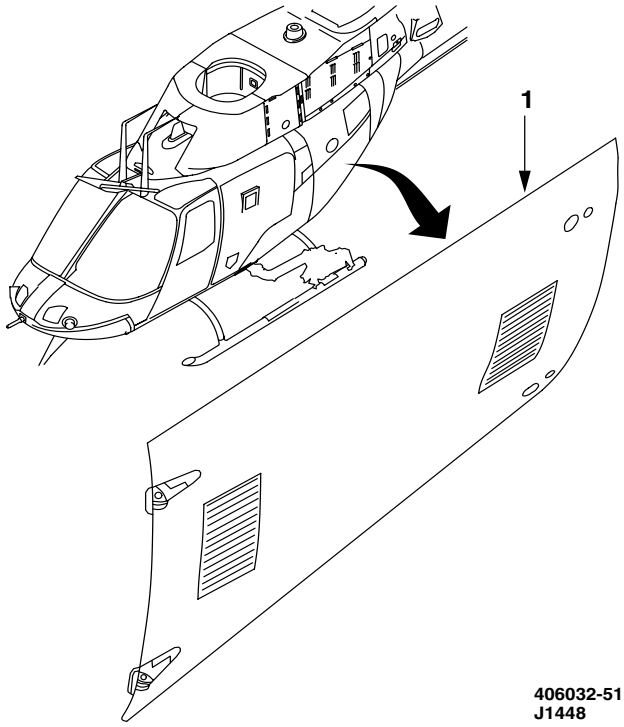
CLEAN

1. Clean door (1).

Drycleaning Solvent

2. Use drycleaning solvent (D199) and wiping rags (D164) to remove oil and grease for purpose of inspection.

3. Use wiping rags (D164) to dry door (1).



406032-51
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2-2-90. AFT ELECTRICAL/AVIONICS DOOR — CLEANING/INSPECTION/REPAIR (CONT)

INSPECT

4. Inspect door (1) for the following:

a. Damage

b. Cracks

c. Wear.

5. Inspect hinges (2) and latches (3) for wear, damage, and serviceability.

6. Inspect chafing strips (4) for damage, cracks, and wear.

7. Inspect door seal for the following:

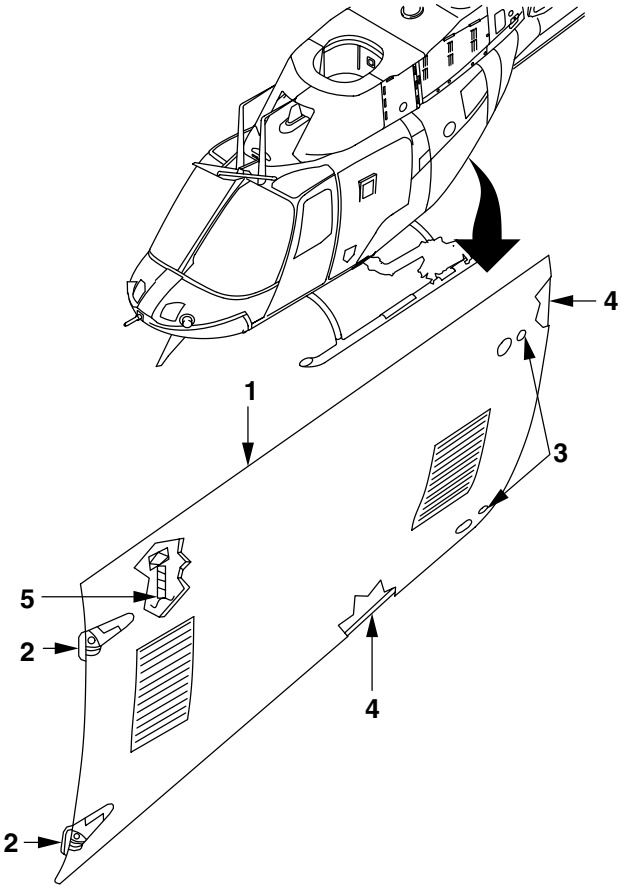
a. Cracks

b. Cuts

c. Worn areas

d. Deterioration.

8. Inspect chain (5) and attaching hardware for wear, damage, and security.



406032-50
J0424

REPAIR

9. Remove aft electrical/avionics door (Task 2-2-89).

10. Remove and replace unserviceable hinges (2) in accordance with TM 1-1500-204-23.

11. Replace typical unserviceable chafing strips (4) (Task 2-2-5).

12. Replace typical unserviceable door seal utilizing instructions in Task 2-2-84.

13. Repair cracks, cuts, punctures, damaged latches (3), missing or damaged hardware, and loose or missing rivets using sheet metal practices in accordance with TM 1-1500-204-23.

14. Replace door if damage inhibits normal usage (Task 2-2-89).

INSPECT

END OF TASK

2-2-91. WATER LEAKS — ISOLATION

This task covers: Isolation of Water Leaks (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
Air Blow Gun (B56)
Pneumatic Cleaning Gun (B63)
Plastic 12 Qt. Pail (or suitable substitute) (B101)

Material:
Paper Strips (1 × 10 inches)
Powdered Soap (D192)

Personnel Required:
68G Aircraft Structural Repairer (2)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GENERAL INFORMATION

1. Leaks predominantly occur in 11 areas on the helicopter. These areas are as follows:

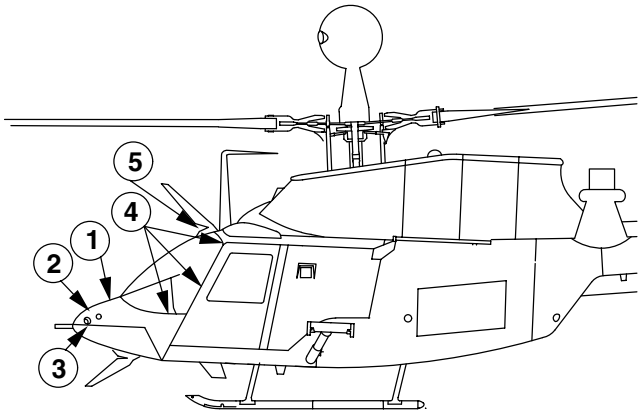
a. Area No. (1) consists of the top of the nose, including battery compartment.

b. Area No. (2) consists of the fresh air vents on top of the nose.

c. Area No. (3) consists of the radar warning antennas.

d. Area No. (4) consists of the windshield retainer strips and the attached wire cutter blade.

e. Area No. (5) consists of the upper wire cutter and the upper inboard corners of the windshield retainer strips.



WATER LEAK ISOLATION AREA NUMBERS (TYPICAL BOTH SIDES)

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GO TO NEXT PAGE

f. Area No. (6) consists of the FM antennas.

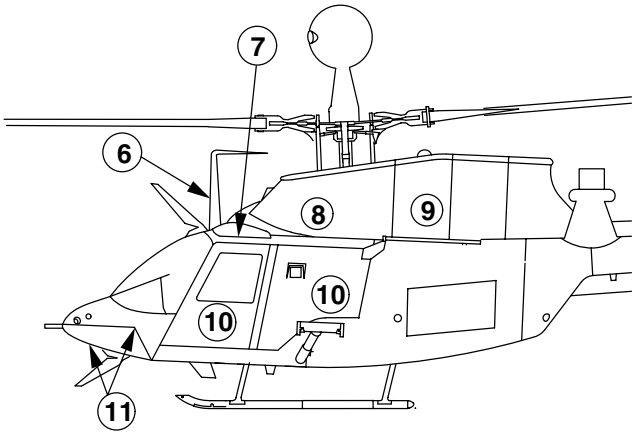
g. Area No. (7) consists of the cabin roof skylight.

h. Area No. (8) consists of the transmission deck, including all associated standoffs (brackets), supports, electrical connectors, and manifold mounts.

i. Area No. (9) consists of the engine deck, including all associated drains.

j. Area No. (10) consists of the forward and aft cabin doors.

k. Area No. (11) consists of the lower window retainer strips.



WATER LEAK ISOLATION AREA NUMBERS (TYPICAL BOTH SIDES)

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2. The repair task specifically designated to the water leak isolation area by number shall be referred to for water leak repair (Task 2-2-92).

3. Isolation of leaks may be accomplished by using one or more of the methods described below:

Compressed Air

a. From suitable container (B101), apply soapy water to outside of helicopter near suspected leak areas. Apply air pressure to the area from inside the helicopter. Leaks may be identified by bubbles.

b. Squirt water under pressure on suspected leak areas and inspect for leaks from inside helicopter.

c. Check door seals and other seals by inserting strips of paper **1.0 inch** wide between seal and sealing surface. Remove paper by pulling with seal closed. A moderate amount of force should be required to pull paper from a properly operating seal along its entire length.

END OF TASK

2-2-92. WATER LEAKS — REPAIR

This task covers: Water Leak Repair, Area Nos. 1 through 11 (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)
Putty Knife (B90)

Material:
Abrasive Pads (D2)
Adhesive (D36)
Adhesive (D11)
Adhesive (D31)
Adhesive (D35)
Adhesive Primer (D30)
Aliphatic Naphtha (D141)
Paint Brush (D54)
Cheesecloth (D56)
Acetone (D2)
Rubber Gloves (D111)
Sandpaper (D176)
Sealing Compound (D184)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 1-1500-328-23
TM 11-1520-248-23

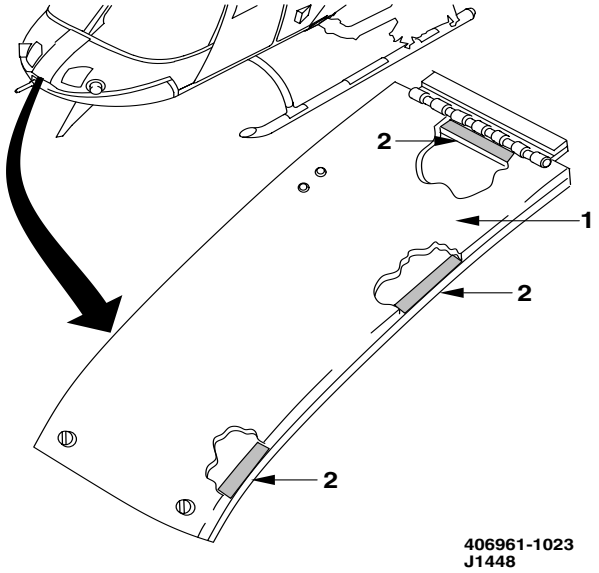
Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-92. WATER LEAKS — REPAIR (CONT)

NOTE

- The following repair procedures for water leaks are based on the assumption that leaking mating surfaces are not warped, cracked, dented or otherwise damaged. Before water leak repair is attempted, any necessary sheet metal work or component part replacement shall have been accomplished.
- Refer to Task 2-2-91 for area number designation.



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REPAIR — AREA NO. 1

1. Open battery door (1) (TM 11-1520-248-23).

2. Inspect battery door seal (2) for damage, points of water entry, and contact of mating surfaces.

3. Repair battery door seal (2) as follows:

a. Remove leaking section of battery door seal (2) by peeling up edge of seal with plastic scraper (B123).

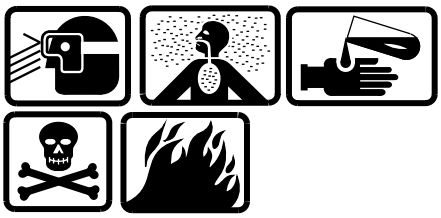
Acetone

b. Once edge of battery door seal (2) is free, pull off seal and discard.

c. Remove old adhesive using acetone (D2) and abrasive pads (D1).

d. Wipe dry using wiping rags (D164).

e. Obtain new battery door seal (2) and lightly abrade both mating surface of battery door (1) and battery door seal (2) with 80 grit sandpaper (D176).



Naphtha/Naphthalene, TT-N-97

f. Clean residue using cheesecloth (D56) moistened with aliphatic naphtha (D141).

g. Wipe surfaces dry with wiping rags (D164).

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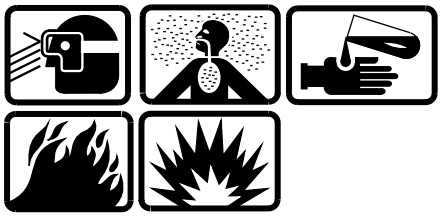
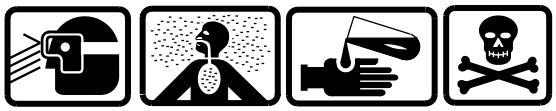
2-2-92. WATER LEAKS — REPAIR (CONT)



Adhesive Primer

h. Apply thin film of adhesive primer (D30) to seal mounting surface of battery door (1) with paint brush (D54).

i. Air dry adhesive primer (D30) for minimum of 30 minutes.



Adhesive

j. Apply smooth, even coat of adhesive (D35) **10 to 15 mils** thick to seal mounting surface of battery door (1) and to mating surface of battery door seal with paint brush (D54).

k. Air dry 15 to 30 minutes until adhesive (D35) develops strong tack.

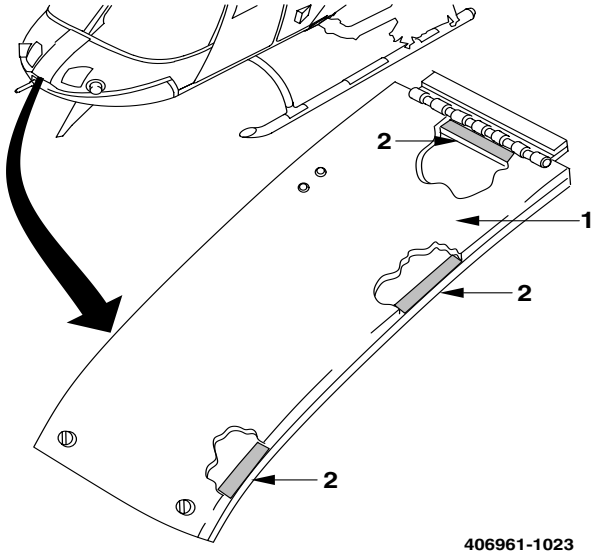
l. Position battery door seal (2) in position on mating surface of battery door (1) and press two adhesive (D35) coated surfaces together. Maintain firm contact pressure until battery door seal (2) will not lift away from battery door (1).

m. Cure at room temperature for 24 hours prior to closing battery door (1).

n. No separation or edge lifting allowed on bonded areas.

o. Check area No. 1 for water leaks (Task 2-2-91).

INSPECT



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2-2-92. WATER LEAKS — REPAIR (CONT)

REPAIR — AREA NO. 2

NOTE

Procedures given are typical for both right or left side.

4. Remove air inlet grille (3) from plenum (4) by removing eight screws (5) and washers (6).

a. Carefully lift edge of air inlet grille (3) with putty knife to break external bead (7) of sealing compound.

b. Remove air inlet grille (3).

5. Inspect external bead (7) of sealing compound and internal nutplates for evidence of leaks.

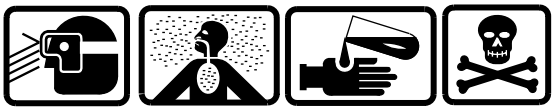
6. Push plenum (4) away from inside of nose skin and inspect gasket (8) for evidence of leaks.

7. If leak is caused by faulty gasket (8):

a. Remove unserviceable gasket (8).

Acetone

b. Clean gasket (8) mounting surface on plenum (4) with acetone (D2) to remove old adhesive.



Adhesive

c. Apply adhesive (D36) to plenum (4) side of gasket (8) and place gasket (8) on plenum (4) mounting surface.

d. Reseat plenum (4) against nose skin.

e. Allow adhesive (D36) to cure at room temperature for 24 hours.

f. No separation or edge lifting allowed on bonded areas.

g. Perform steps 8.a. through 8.f.

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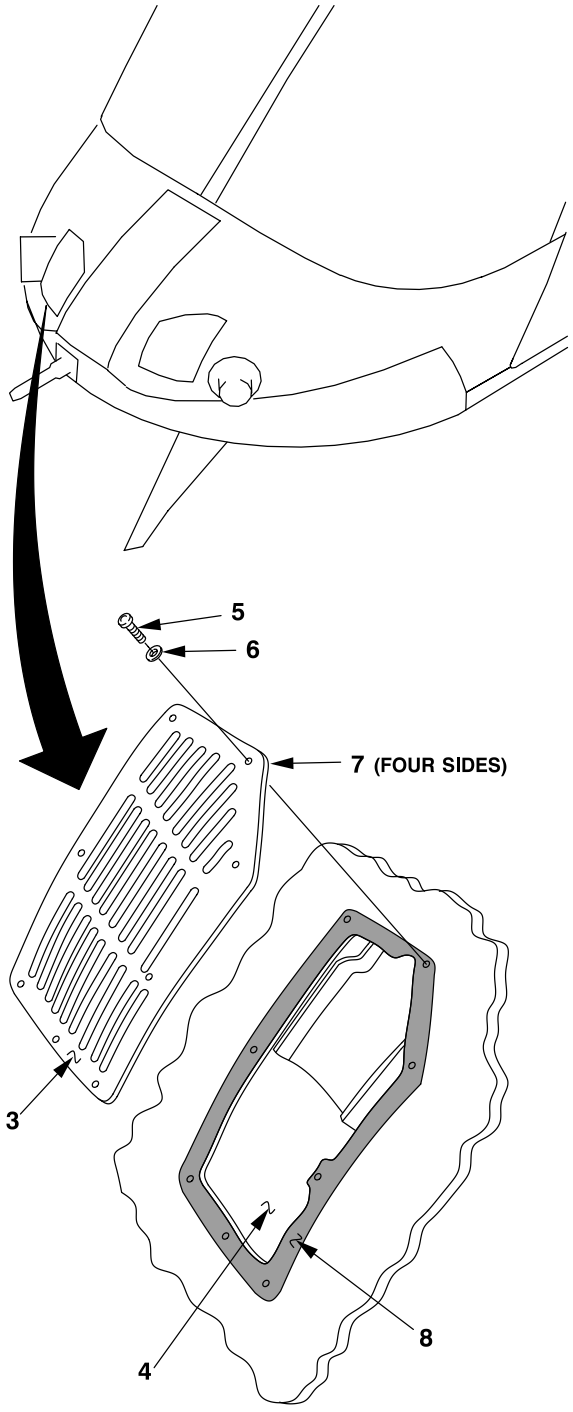


RIGHT SHOWN - LEFT OPPOSITE

406073-3
J0424

8. If leak is caused by incomplete sealing of external bead (7).

a. Place air inlet grille (3) on mounting surface and install eight screws (5) and washers (6).

Acetone

b. Clean old sealing compound from air inlet grille (3) and nose skin using acetone (D2) and abrasive pads (D1).

c. Remove any residue by wiping with wiping rags (D164).

Sealing Compound

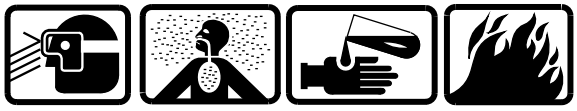
d. Apply external bead (7) of sealing compound (D184) around edges of air inlet grille (3) and nose skin.

e. Allow sealing compound (D184) to cure at room temperature for 24 hours.

f. Check area No. 2 for water leaks (Task 2-2-91).

9. If leak is coming from duct:

a. Remove leaky section of duct (Task 12-1-12).



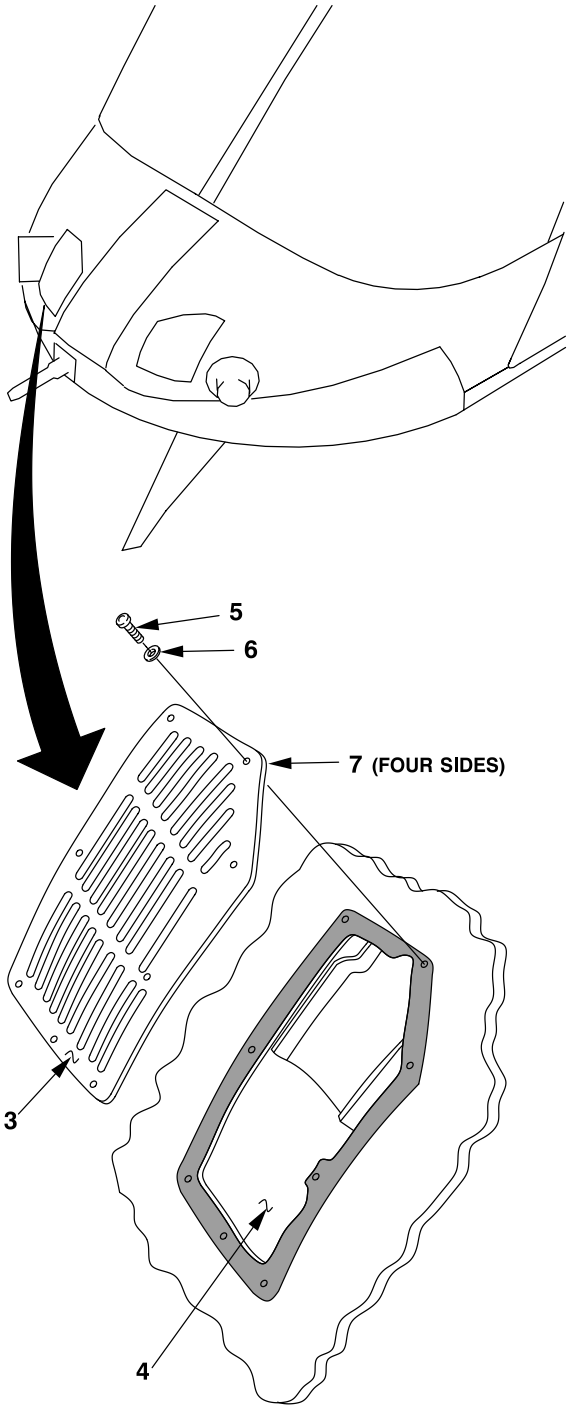
Sealing Compound

b. Apply sealing compound (D184) to inside and outside surfaces of leaking duct using paint brush (D54).

c. Install duct (Task 12-1-12).

d. Perform preceding steps 8.a. through 8.e. as required.

e. Check area No. 2 for water leaks (Task 2-2-91).



RIGHT SHOWN - LEFT OPPOSITE

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J0424

INSPECT

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2-2-92. WATER LEAKS — REPAIR (CONT)

REPAIR — AREA NO. 3

10. For water leak repair of area No. 3:

a. Remove old sealing compound from outer edge of antenna (9) and support (10) using plastic scraper (B123).

b. Remove four mounting screws (11) from antenna (9).

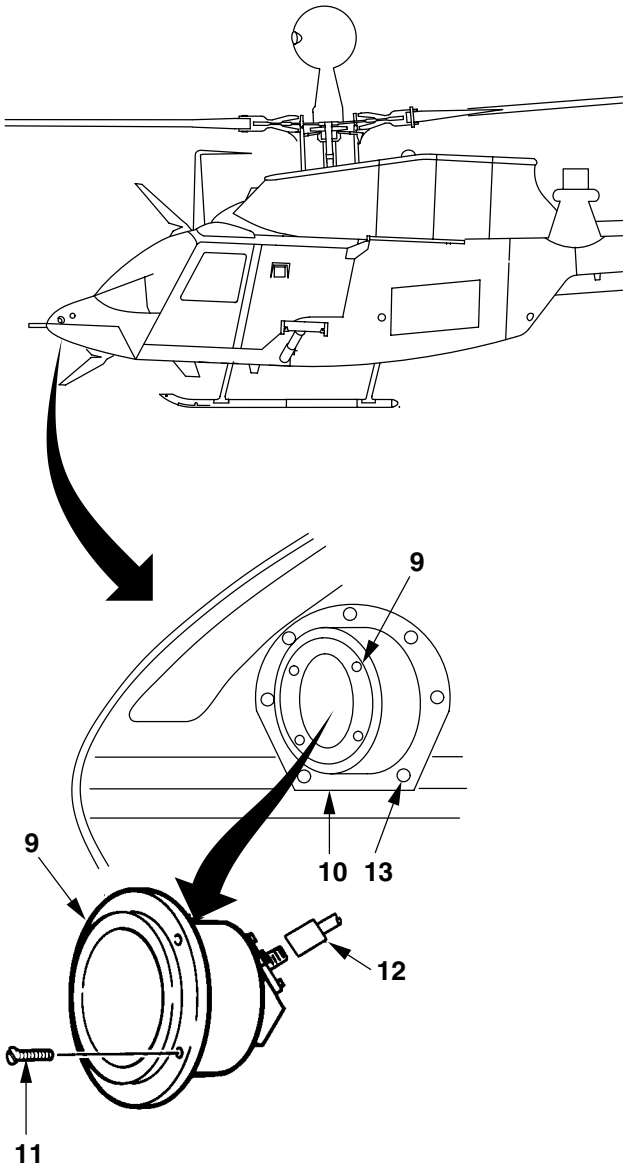
c. Pull antenna (9) away from support (10).

d. Disconnect coax (12) and remove antenna (9).

e. Remove eight mounting screws (13) and remove support (10) from helicopter.

Acetone

f. Clean antenna and support mounting surfaces with acetone (D2) and an abrasive pad (D1).



406075-566
J0424

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Acetone

CAUTION

To prevent scratching of mounting surface, care shall be exercised while removing protective finish.

g. Remove protective finish from antenna mounting surface on support (10) using acetone (D2) to ensure good electrical bond.

h. Place support (10) on helicopter and secure with eight mounting screws (13).

i. Connect coax (12) to antenna (9).

j. Secure antenna (9) to support (10) with four screws (11).

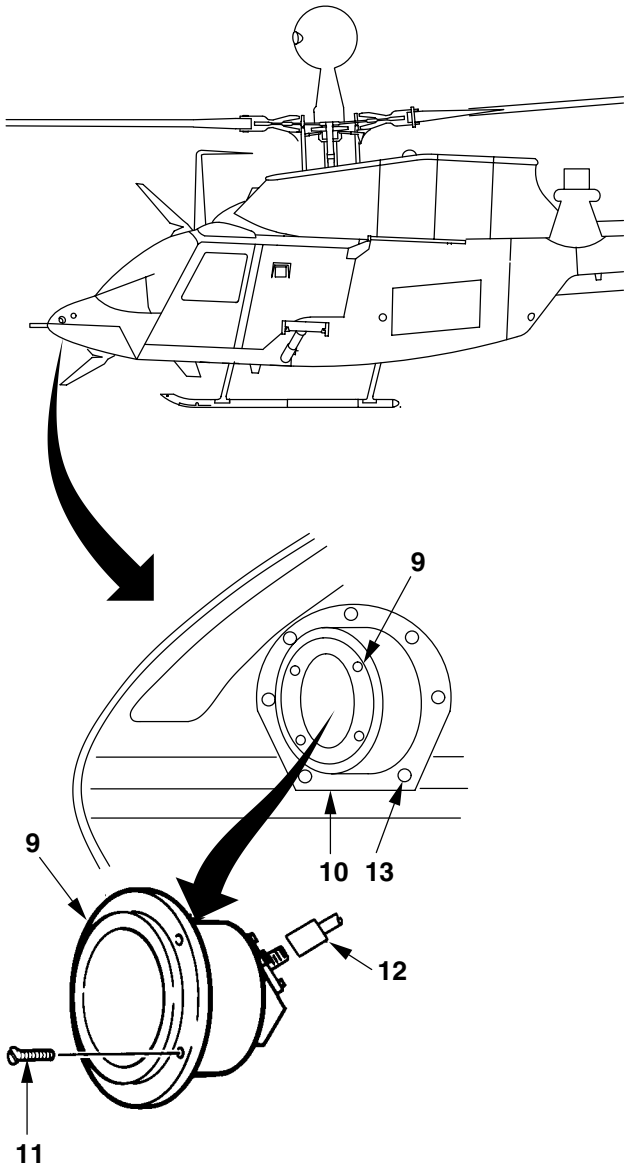
Sealing Compound

k. Apply sealing compound (D184) around outer edge of antenna mounting flange and surface of support (10).

l. Allow sealing compound (D184) to cure at room temperature for 24 hours.

m. Check area No. 3 for water leaks (Task 2-2-91).

INSPECT



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2-2-92. WATER LEAKS — REPAIR (CONT)

REPAIR — AREA NO. 4

11. Repair typical windshield retainer strip (14, 15, 16, 17, 18, 19, or 20) showing indication of leakage.

a. Drill out rivets (21) as necessary using accepted sheet metal practices in accordance with TM 1-1500-204-23.

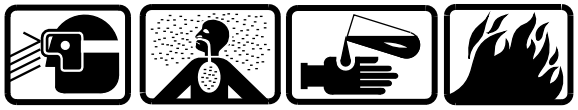
b. Wedge plastic scraper (B123) under one end of windshield retainer strip (14, 15, 16, 17, 18, 19, or 20) and slide end to end to free from sealing compound.

Acetone

c. Remove old sealing compound from windshield retainer strip (14, 15, 16, 17, 18, 19, or 20) using acetone (D2) and a putty knife (B90) or abrasive pads (D1).

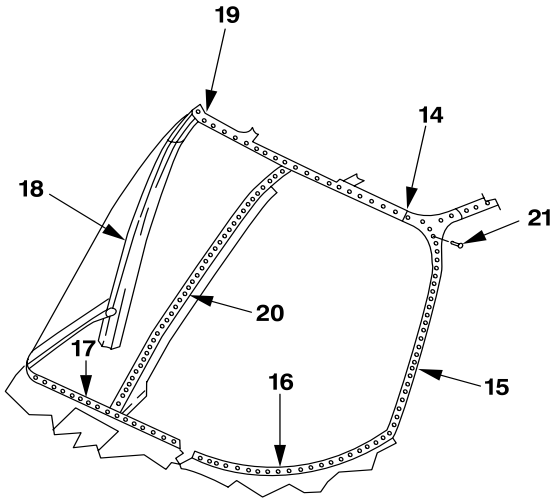
d. Abrade surface of windshield normally covered by removed windshield retainer strip (14, 15, 16, 17, 18, 19, or 20) with abrasive pads (D1).

e. Remove residue by wiping with wiping rags (D164).



Sealing Compound

f. Coat entire mating surface of windshield retainer strip (14, 15, 16, 17, 18, 19, or 20) edge to edge with sealing compound (D184) using a paint brush (D54).



406032-55
J1448

g. Position windshield retainer strip (14, 15, 16, 17, 18, 19, or 20) and install rivets (21) using accepted sheet metal practices in accordance with TM 1-1500-204-23.

h. Allow sealing compound (D184) to cure at room temperature for 24 hours.

i. Check area No. 4 for water leaks (Task 2-2-91).

INSPECT

GO TO NEXT PAGE

2-2-92. WATER LEAKS — REPAIR (CONT)

REPAIR — AREA NO. 5

12. For water leak repair of area No. 5:

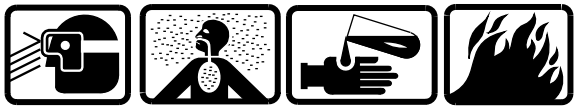
a. Remove upper wire cutter components (Task 2-2-62) only to the extent required to accomplish necessary repairs.

NOTE

The water leak repair procedures given for left support are the same for the right support.

b. Repair leaking support (22).

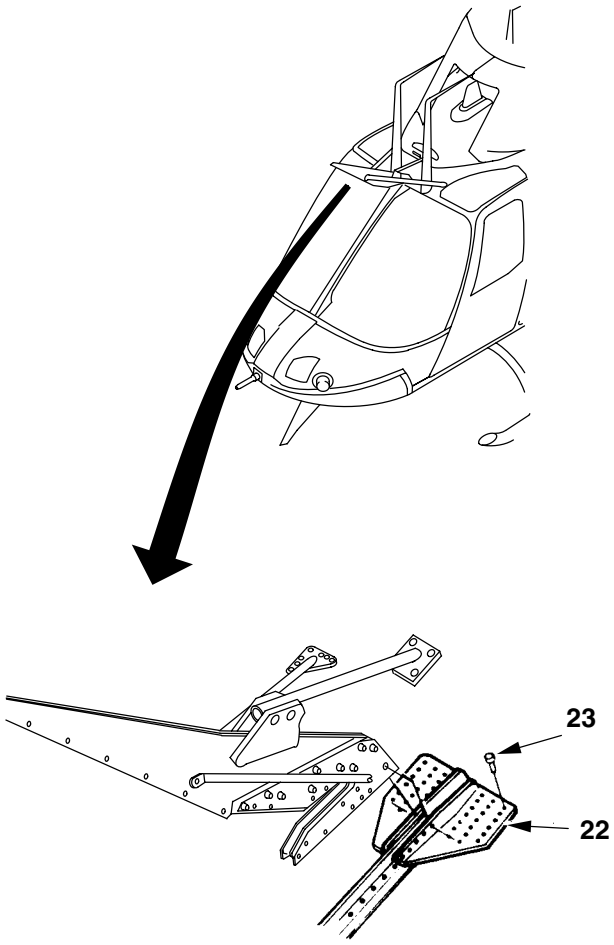
(1) Remove rivets (23) using accepted sheet metal practices in accordance with TM 1-1500-204-23.



Acetone

(2) Clean mating surface of support (22) and mating surface on fuselage with acetone (D2) and abrasive pads (D1).

(3) Remove residue by wiping with wiping rags (D164).



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J1972

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Sealing Compound

(4) Coat entire mating surface of support (22) with sealing compound (D184) using a paint brush (D54).

(5) Place support (22) on fuselage mating surface and install rivets (23) using accepted sheet metal practices in accordance with TM 1-1500-204-23.

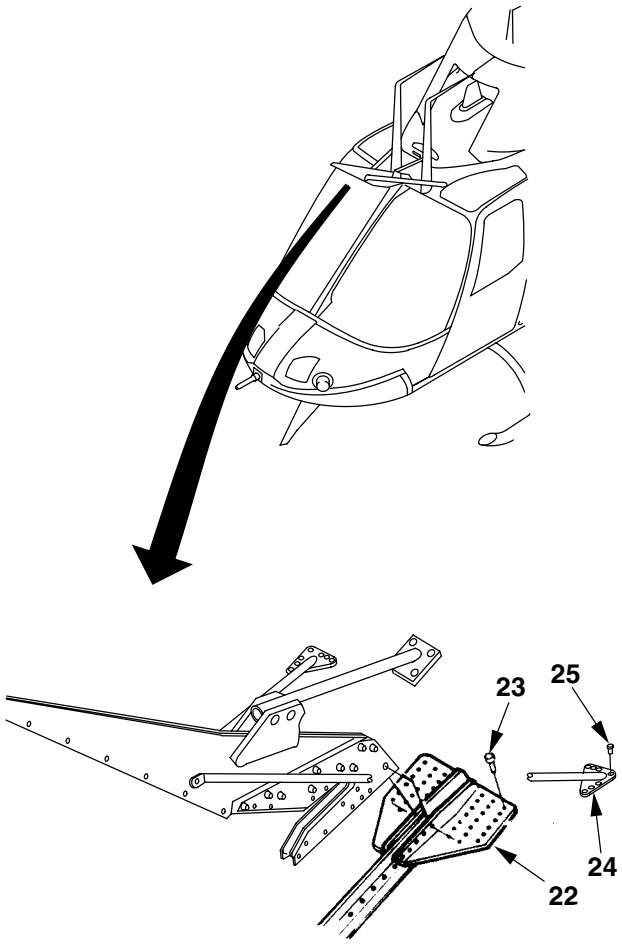
(6) Allow sealing compound (D184) to cure at room temperature for 24 hours.

(7) Install upper wire cutter components (Task 2-2-62).

(8) Check area No. 5 for water leaks (Task 2-2-91).

c. Repair leaking collar (24).

(1) Remove rivets (25) from collar (24) using accepted sheet metal practices in accordance with TM 1-1500-204-23.



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J1972

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2-2-92. WATER LEAKS — REPAIR (CONT)

(2) Remove collar (24) and strut (26) from fuselage.

Acetone

(3) Clean mating surface of collar (24) and mating surface on fuselage with acetone (D2) and abrasive pads (D1).

(4) Remove residue by wiping with wiping rags (D164).

Sealing Compound

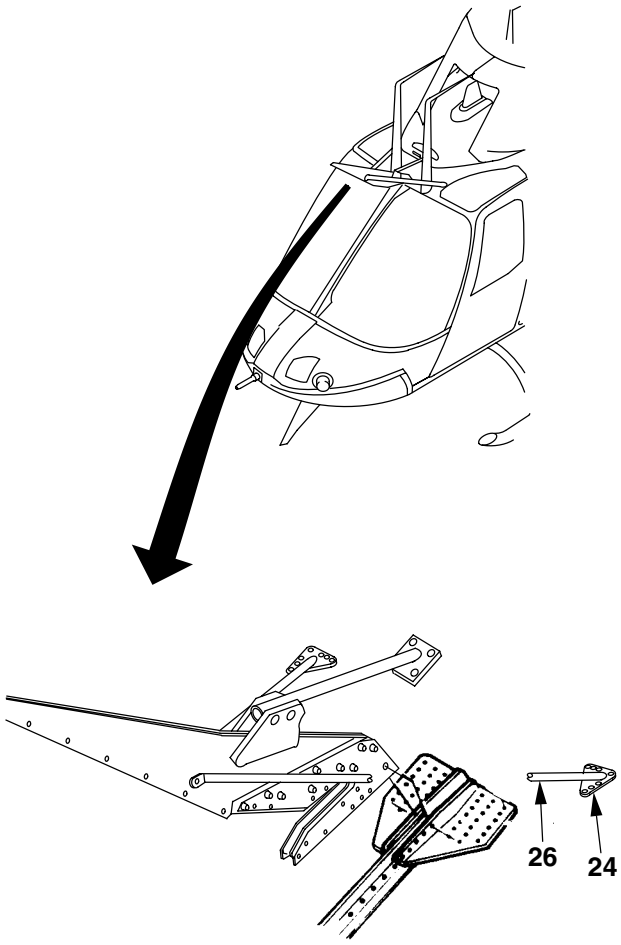
(5) Coat entire mating surface of collar (24) with sealing compound (D184) using a paint brush (D54).

(6) Install upper wire cutter, strut (26), and collar (24) (Task 2-2-62).

(7) Allow sealing compound (D184) to cure at room temperature for 24 hours.

(8) Check area No. 5 for water leaks (Task 2-2-91).

INSPECT



406961-1021
J1972

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2-2-92. WATER LEAKS — REPAIR (CONT)

REPAIR — AREA NO. 6

13. For water leak repair of area No. 6:

a. Remove old sealing compound from mounting screws (27), mount (28), and surrounding mounting surface using plastic scraper (B123).

b. Remove four mounting screws (27) from mount (28) and lift homing antenna (29).

Acetone

CAUTION

To prevent damage to plastic or fiberglass, acetone (D2) shall be used sparingly and not allowed to contact these materials. Any moist acetone film shall be wiped up with a wiping rag (D164) before it dries.

c. Clean antenna mounting surface with acetone (D2) and abrasive pad (D1).

CAUTION

To prevent scratching aluminum skin, use great care shall be exercised during removal of protective finish from antenna mounting surface.

d. Remove protective finish from antenna mounting surface to ensure good electrical bond.

e. Align homing antenna (29) with mounting holes and install four screws (27) into mount (28).

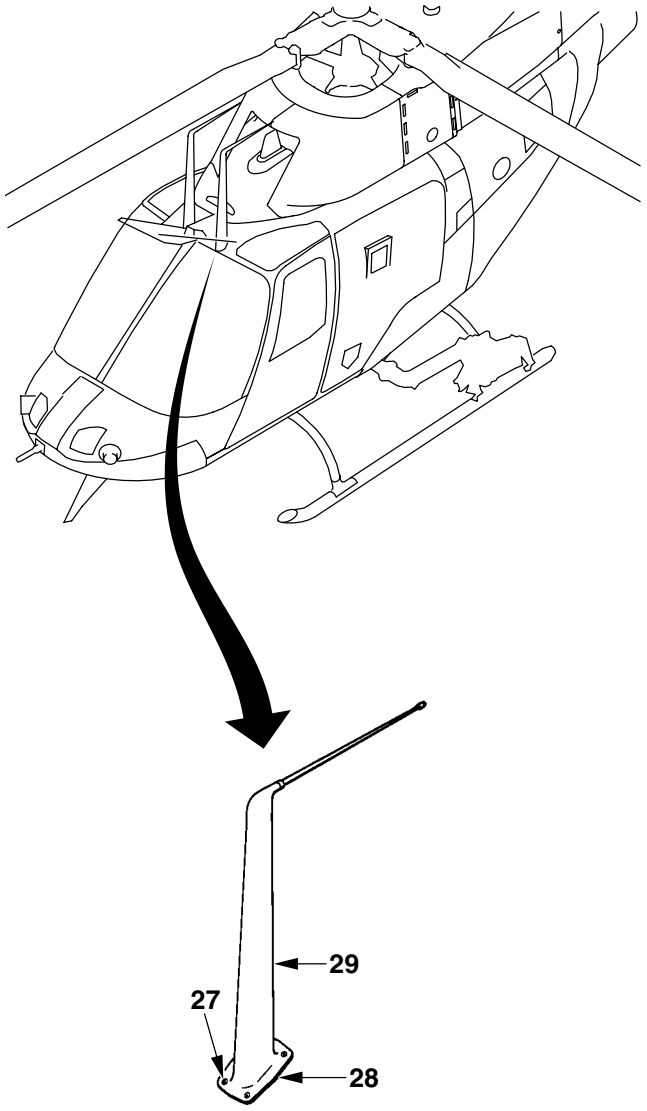
Sealing Compound

f. Apply sealing compound (D184) to screws (27) and around edge of mount (28).

g. Allow sealing compound (D184) to cure at room temperature for 24 hours.

h. Check area No. 6 for water leaks (Task 2-2-91).

INSPECT



HOMING ANTENNA (TYPICAL)

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J0424

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2-2-92. WATER LEAKS — REPAIR (CONT)

REPAIR — AREA NO. 7

14. For water leak repair of area No. 7:

a. Refer to Task 2-1-55.

b. Check area No. 7 for water leaks (Task 2-2-91).

INSPECT

REPAIR — AREA NO. 8

15. Repair typical wiring/tubing or electrical connector standoff (bracket) showing indication of leakage:

a. Remove leaking standoff.

Acetone

b. Clean standoff base and mating surface of structure with acetone (D2) and abrasive pads (D1).

c. Remove residue by wiping with wiping rags (D164).

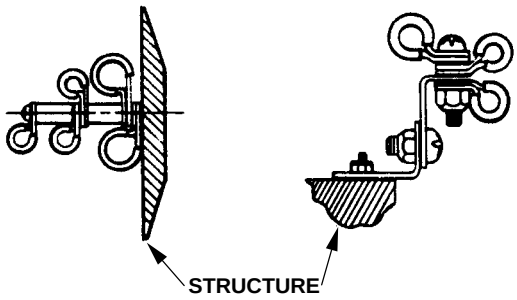
Sealing Compound

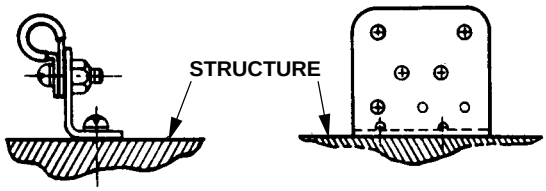
d. Apply sealing compound (D184) to standoff mating surfaces.

e. Install standoff.

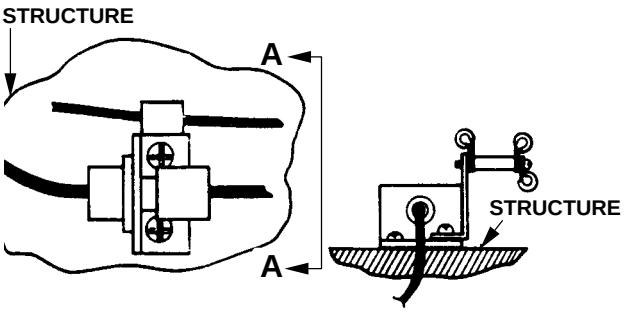
f. Allow sealing compound (D184) to cure at room temperature for 24 hours.

g. Check area No. 8 for water leaks (Task 2-2-91).





TYPICAL WIRING/TUBING STANDOFF (BRACKET)



VIEW LOOKING DOWN

VIEW A-A ROTATED 90° CLOCKWISE

TYPICAL ELECTRICAL CONNECTOR STANDOFF (BRACKET)

406075-557
J0424

GO TO NEXT PAGE

NOTE

The following procedure is typical and may be used to repair leaks around other supports not specified herein.

16. Repair area around hydraulic filter support (29), hydraulic reservoir support (30), and hydraulic actuator support (31) showing indication of leakage:

a. Remove support where leak is detected (hydraulic filter support, Task 7-3-1; hydraulic reservoir support, Task 7-7-9; and hydraulic actuator support, Task 11-3-64).

Acetone

b. Clean support and structure mating surfaces with acetone (D2) and abrasive pads (D1).

c. Remove residue by wiping with wiping rags (D164).

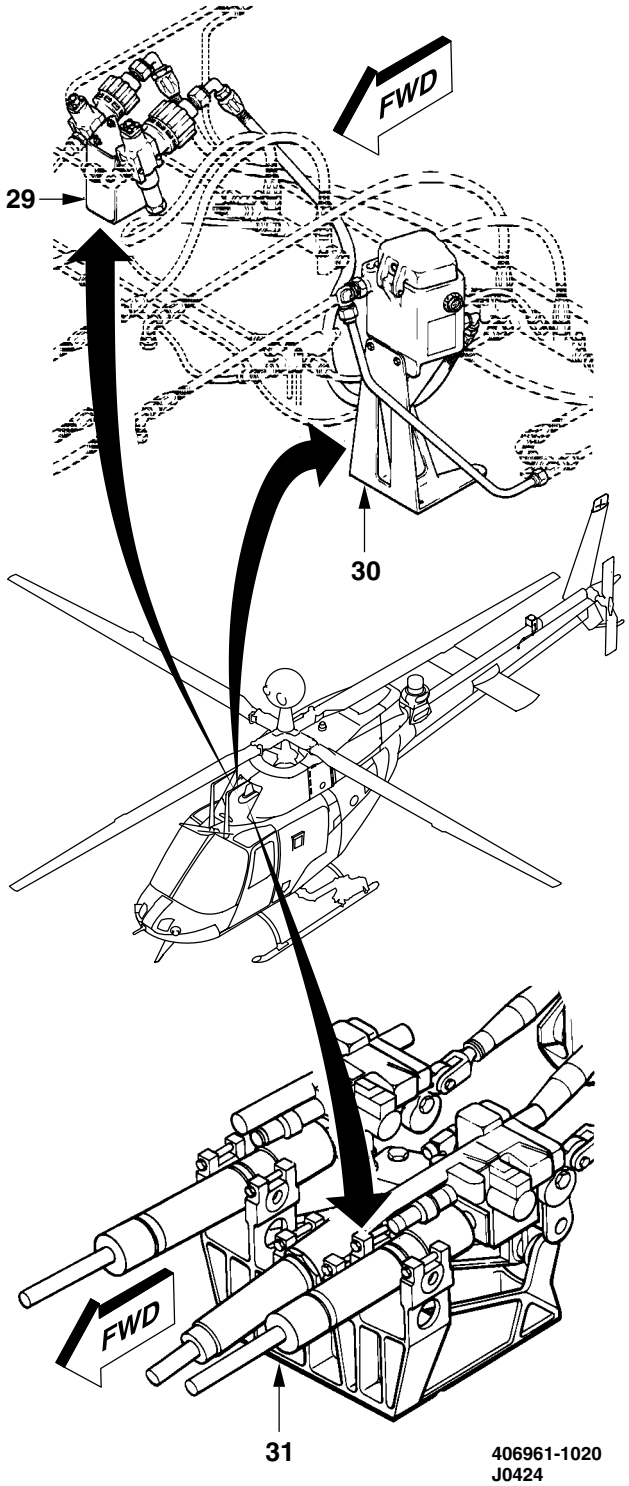
d. Install support (hydraulic filter support, Task 7-3-1; hydraulic reservoir support, Task 7-7-9; and hydraulic actuator support, Task 11-3-64).

Sealing Compound

e. Apply sealing compound (D184) around edges of support at mating surface.

f. Allow sealing compound (D184) to cure at room temperature for 24 hours.

g. Check area No. 8 for water leaks (Task 2-2-91).



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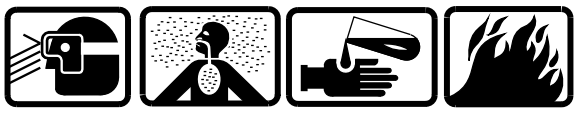
2-2-92. WATER LEAKS — REPAIR (CONT)

17. Repair typical electrical connector (32) showing indication of leakage:

a. Disconnect wiring (harness or cable assembly) from electrical connector (32).

b. Remove screws (33) from electrical connector (32), wiggle electrical connector (32) to free adhesive seal, and remove from mounting surface.



Acetone

c. Clean electrical connector (32) and structure mating surfaces with acetone (D2) and abrasive pads (D1).

d. Remove residue by wiping with wiping rags (D164).

e. Place electrical connector (32) on mounting surface and install screws (33).

Sealing Compound

f. Apply sealing compound (D184) around edges of electrical connector (32) at mating surface.

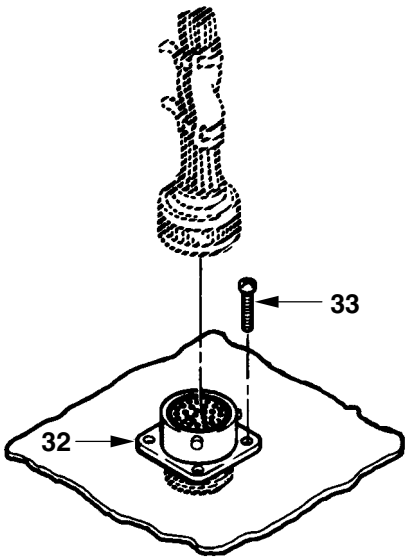
g. Allow sealing compound (D184) to cure at room temperature for 24 hours.

h. Check area No. 8 for water leaks (Task 2-2-91).

18. Repair water leak around hydraulic return and hydraulic pressure manifold bolts:

a. Refer to Tasks 7-5-3 and 7-5-4.

b. Check area No. 8 for water leaks (Task 2-2-91).



ELECTRICAL CONNECTOR (TYPICAL)

406075-556
J0424

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19. Repair typical deck drains showing indication of leakage:

Acetone

a. Clean old sealant from deck drain using acetone (D2) and abrasive pads (D1).

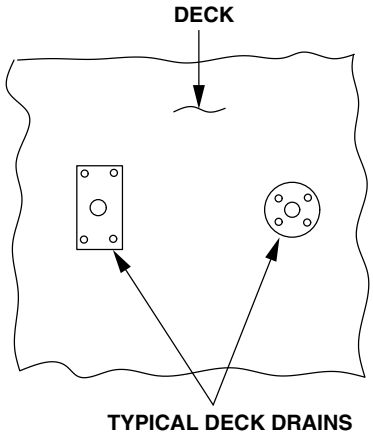
b. Remove residue by wiping with wiping rags (D164).

Sealing Compound

c. Coat deck drain edges, top and bottom, with sealing compound (D184).

d. Allow sealing compound (D184) to cure at room temperature for 24 hours.

e. Check area No. 8 for water leaks (Task 2-2-91).



TYPICAL DECK DRAINS

VIEW LOOKING DOWN

INSPECT

REPAIR — AREA NO. 9

NOTE

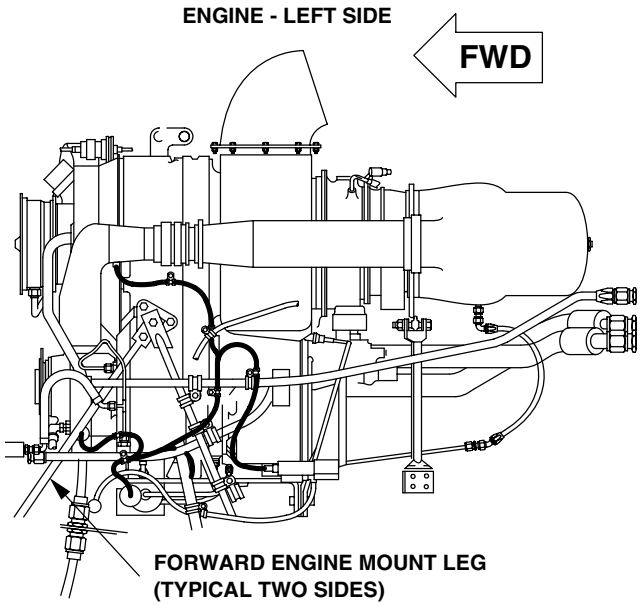
The following repair procedures are applicable to both the left and right forward engine mount leg.

20. Repair left or right forward engine mount leg mating surface showing indication of leakage:

a. Remove affected forward engine mount leg (Task 4-7-1).

Acetone

b. Clean mating surfaces of forward engine mount and engine mount deck with acetone (D2) and abrasive pads (D1).



FORWARD ENGINE MOUNT LEG (TYPICAL TWO SIDES)

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J0424

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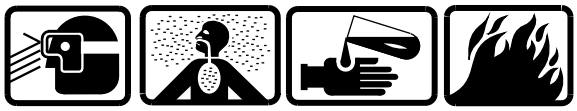
c. Remove residue by wiping with wiping rags (D164).



Sealing Compound

d. Coat mating surface of forward engine mount leg pad with sealing compound (D184).

e. Install forward engine mount leg (Task 4-7-1).

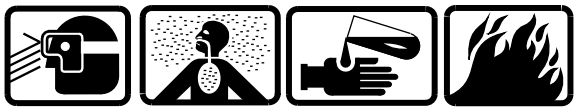
f. Allow sealing compound (D184) to cure at room temperature for 24 hours.

g. Check area No. 9 for water leaks (Task 2-2-91).

21. Repair engine gas producer turbine rpm (Ng) cable aft support bracket showing indication of leakage:

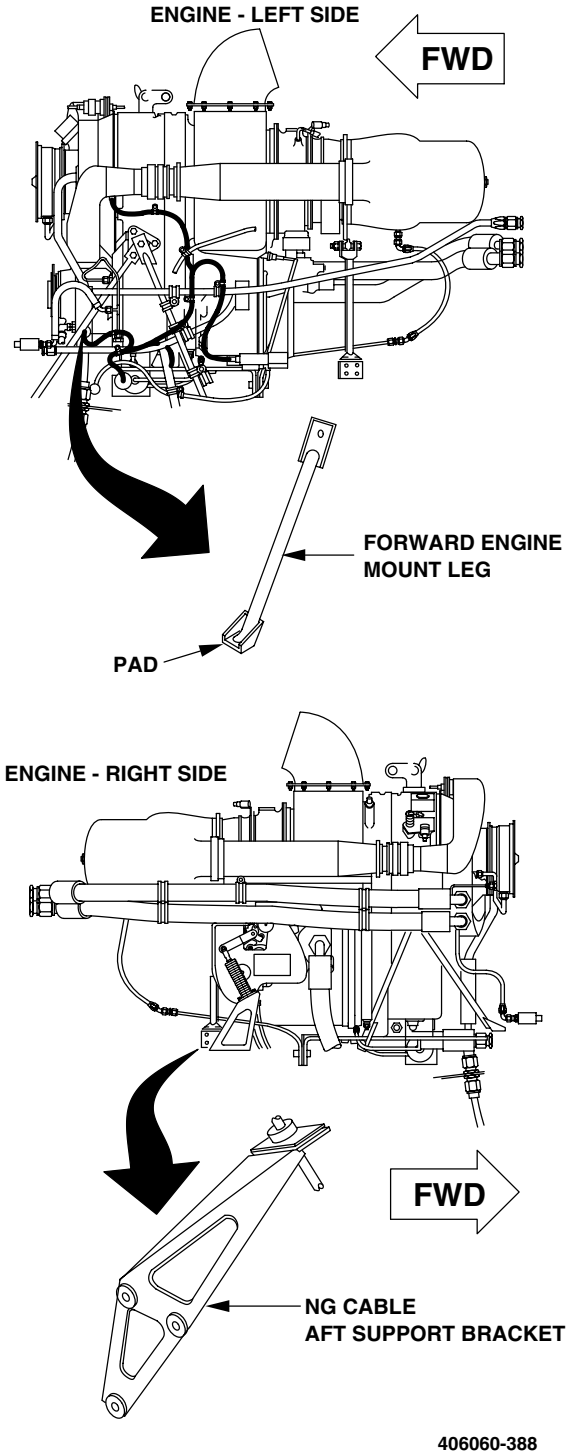
a. Remove Ng cable aft uniball bearing (Task 4-6-4).

b. Remove Ng cable aft support bracket (Task 4-6-5).



Acetone

c. Clean mating surface of Ng cable aft support bracket and mating surface on side of engine deck with acetone (D2).



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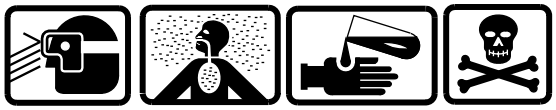
2-2-92. WATER LEAKS — REPAIR (CONT)

d. Remove residue by wiping with wiping rags (D164).

e. Install Ng cable aft support bracket (Task 4-6-5).



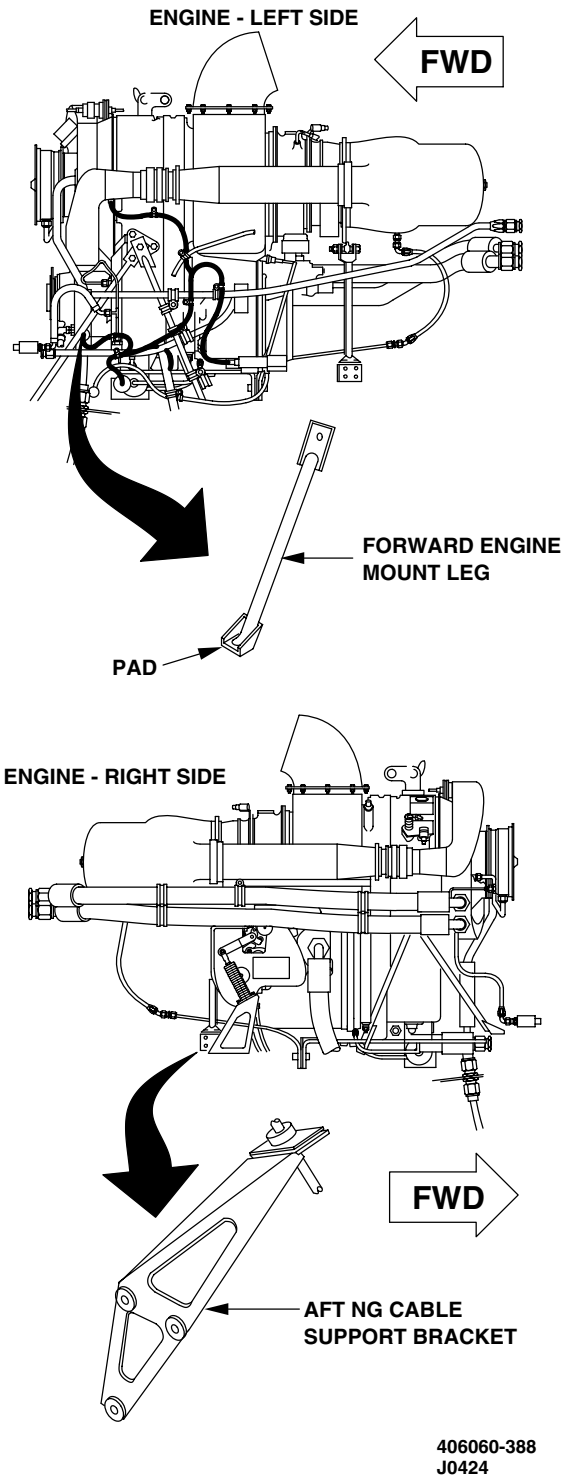
Adhesive

f. Seal edges of Ng cable aft support bracket with adhesive (D35).

g. Install Ng cable aft uniball bearing (Task 4-6-4).

h. Allow adhesive (D35) to cure at room temperature for 24 hours.

i. Check area No. 9 for water leaks (Task 2-2-91).



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2-2-92. WATER LEAKS — REPAIR (CONT)

22. Repair typical air, oil, and hydraulic deck unions showing indication of leakage:

a. Disconnect affected air, oil, or hydraulic tube from fitting (both ends).

b. Remove nut and washer from fitting.

c. Remove fitting from deck.

Acetone

d. Clean mating surface of washer and mating surface on deck with acetone (D2) and abrasive pads (D1).

e. Remove residue by wiping with wiping rags (D164).

Sealing Compound

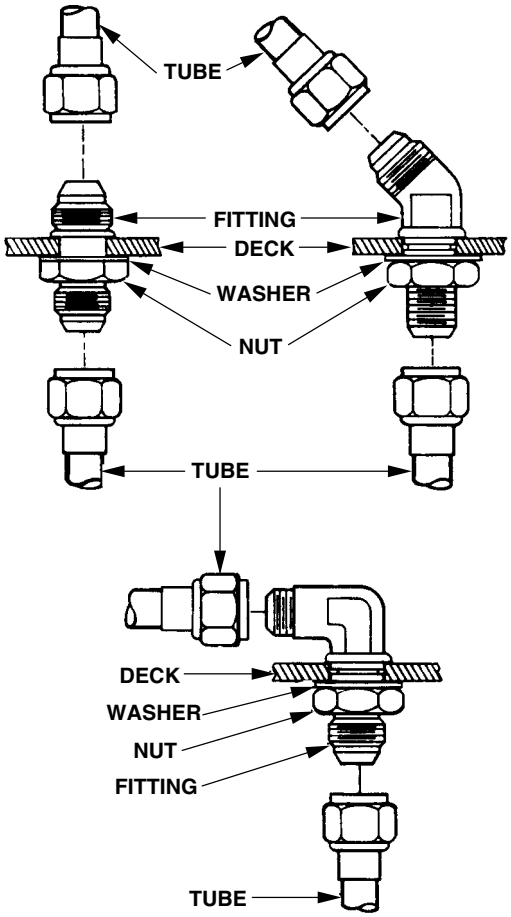
f. Coat mating surface of washer with sealing compound (D184).

g. Place fitting in deck, install washer with sealing compound (D184) surface facing deck, and install nut.

h. Connect air, oil, or hydraulic tube, as applicable, to both ends of fitting.

i. Allow sealing compound (D184) to cure at room temperature for 24 hours.

j. Check area No. 9 for water leaks (Task 2-2-91).



406032-56
J0424

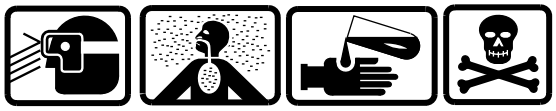
GO TO NEXT PAGE

23. Repair typical deck drains showing indication of leakage:

a. Repair per instructions in preceding step 19.

b. Check area No. 9 for water leaks (Task 2-2-91).

24. Repair typical electrical connector showing indication of leakage:



Adhesive

a. Repair per instructions in preceding step 17 and by substituting adhesive (D35) in step f.

b. Check area No. 9 for water leaks (Task 2-2-91).

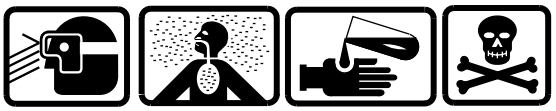
25. Repair typical deck rivets and screws showing indication of leakage:

Acetone

a. Clean existing adhesive from affected deck rivet or screw using acetone (D2) and a wire brush.

b. Remove residue by wiping with wiping rags (D164).

c. Check rivet or screw for proper installation; tighten or replace as necessary.



Adhesive

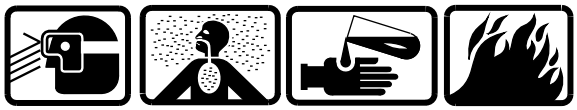
d. Reseal rivet or screw by coating with adhesive (D35).

e. Allow adhesive (D35) to cure at room temperature for 24 hours.

f. Check area No. 9 for water leaks (Task 2-2-91).

GO TO NEXT PAGE

26. Repair edges of engine pan showing indication of leakage:



Acetone

a. Remove existing adhesive in leaking area using acetone (D2) and abrasive pads (D1).

b. Remove residue by wiping with wiping rags (D164).

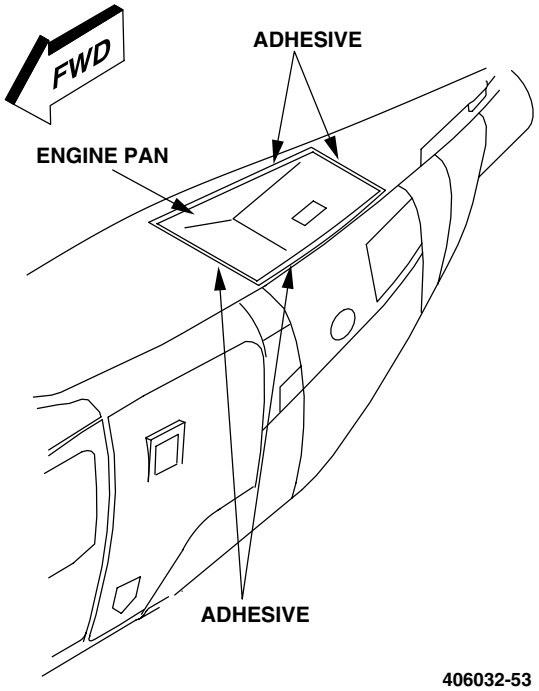
c. Don rubber gloves (D111).

d. Apply adhesive (D35) to edge of pan and smooth with gloved fingers.

Adhesive

e. Allow adhesive (D35) to cure at room temperature for 24 hours.

f. Check area No. 9 for water leaks (Task 2-2-91).



406032-53
J0424

INSPECT

GO TO NEXT PAGE

REPAIR — AREA NO. 10

NOTE

The following repair procedures are typical for both left and right access doorframes and left and right crew doorframes.

27. Repair typical doorframe seal showing indication of leakage:

a. Remove affected access door (Task 2-2-6) or crew door (Task 2-2-10).

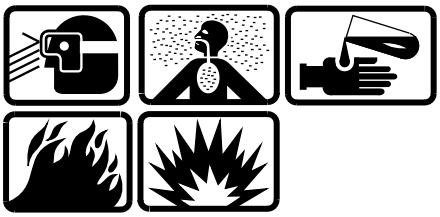
b. Remove seal retainer plate by drilling out rivets as necessary using accepted sheet metal practices in accordance with TM 1-1500-204-23.

c. Remove seal from doorframe.

Acetone

d. Clean seal mating surface on doorframe using acetone (D2) and abrasive pads (D1).

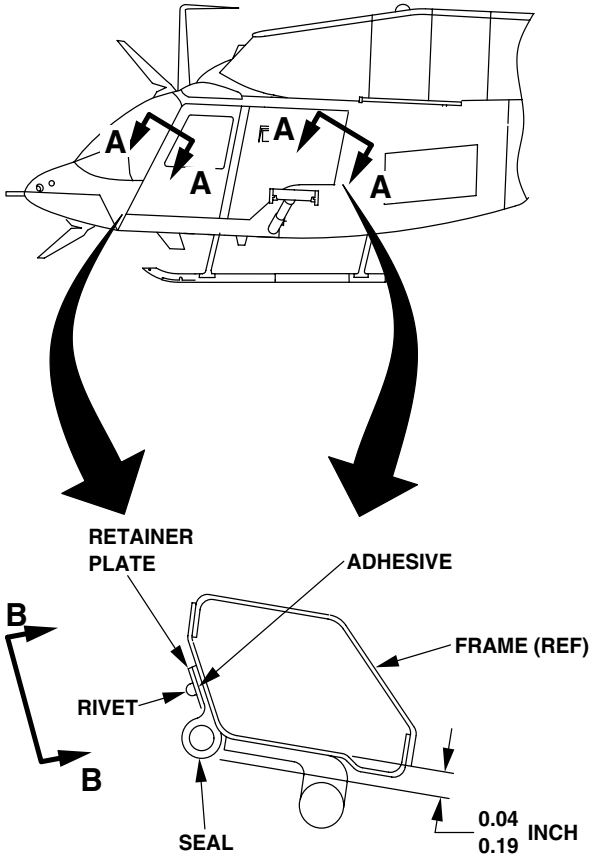
e. Remove residue by wiping with wiping rags (D164).



Adhesive Primer

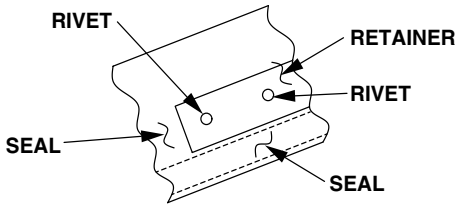
f. Apply adhesive primer (D30) to seal mating surface on doorframe.

g. Allow adhesive primer (D30) to air dry 30 minutes.



OUTBOARD-LOOKING DOWN

SECTION A - A
(TYPICAL)



VIEW B - B

TYPICAL INSTALLATION FROM DOOR FRAME SEAL

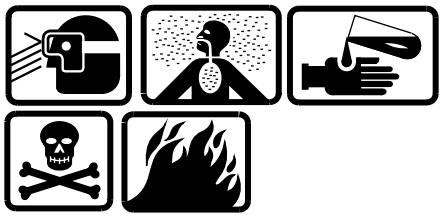
406031-8
J0424

GO TO NEXT PAGE

2-2-92. WATER LEAKS — REPAIR (CONT)

h. Cut new seal to length from bulk seal material (H13).

i. Abrade mating surface of seal using 80 grit sandpaper (D176).



Naphtha/Naphthalene, TT-N-97

j. Remove residue from seal by wiping with cheesecloth (D56) moistened with aliphatic naphtha (D141).

Adhesive

k. Apply adhesive (D31) to mating surface of both doorframe and seal.

l. Allow adhesive (D31) to air dry for 30 minutes, or until tack free surfaces are obtained.

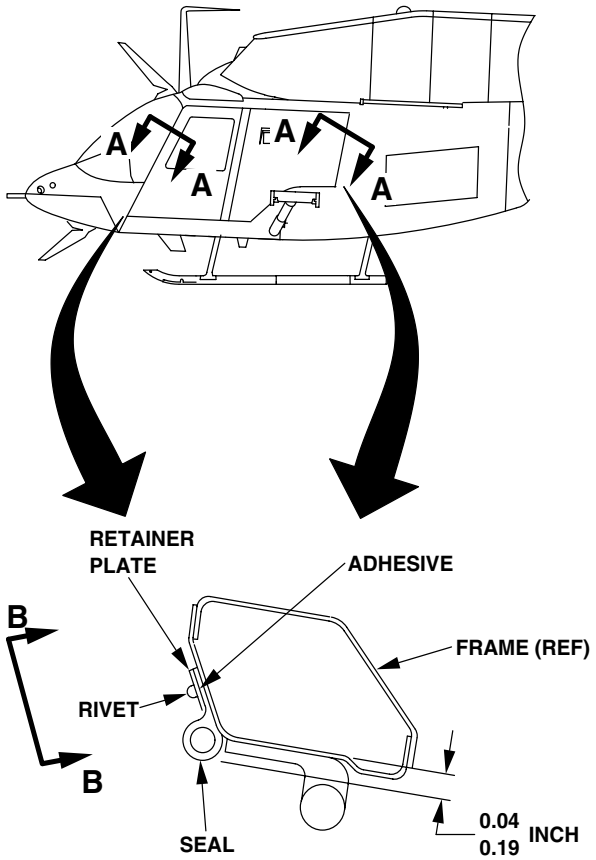
m. Place seal on doorframe, press firmly, and hold in place until seal will not lift away from doorframe.

n. Install seal retainer plates by installing rivets using accepted sheet metal practices in accordance with TM 1-1500-204-23.

o. Allow adhesive (D31) and seal to cure undisturbed at room temperature 75 to 80 °F for 24 hours.

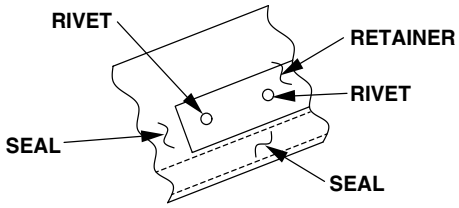
p. Install either access door (Task 2-2-7) or crew door (Task 2-2-10).

q. Check area No. 10 for water leaks (Task 2-2-91).



OUTBOARD-LOOKING DOWN

SECTION A - A
(TYPICAL)



VIEW B - B

TYPICAL INSTALLATION FROM DOOR FRAME SEAL

406031-8
J0424

INSPECT

GO TO NEXT PAGE

2-2-92. WATER LEAKS — REPAIR (CONT)

REPAIR — AREA NO. 11

28. Repair left or right lower window retainer strips showing indication of leakage:

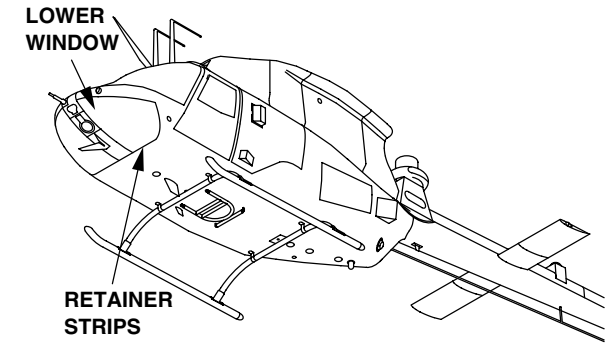
a. Refer to repair of typical windshield retainer strip, preceding step 11.

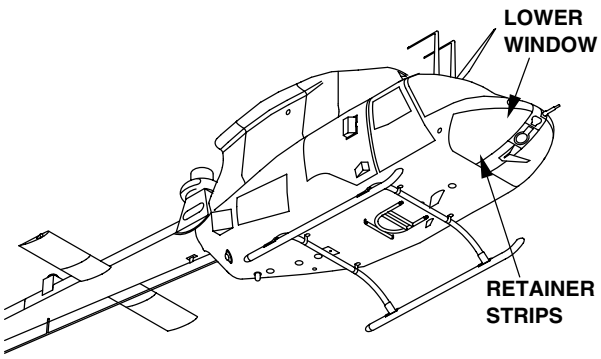
b. Check area No. 11 for water leaks (Task 2-2-91).

INSPECT

FOLLOW-ON MAINTENANCE

Perform MOC (TM 1-1500-328-23).





406032-54
J0424

END OF TASK

2-2-93. UNIVERSAL WEAPONS PYLON (UWP) MOUNT FITTING COVER — REMOVAL/ INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
UWP Removed (TM 9-1090-214-23&P)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-93. UNIVERSAL WEAPONS PYLON (UWP) MOUNT FITTING COVER — REMOVAL/ INSTALLATION (CONT)

REMOVE

NOTE

Procedure for removing UWP fitting cover (1) from area below access door on right side of helicopter is the same as shown for left side.

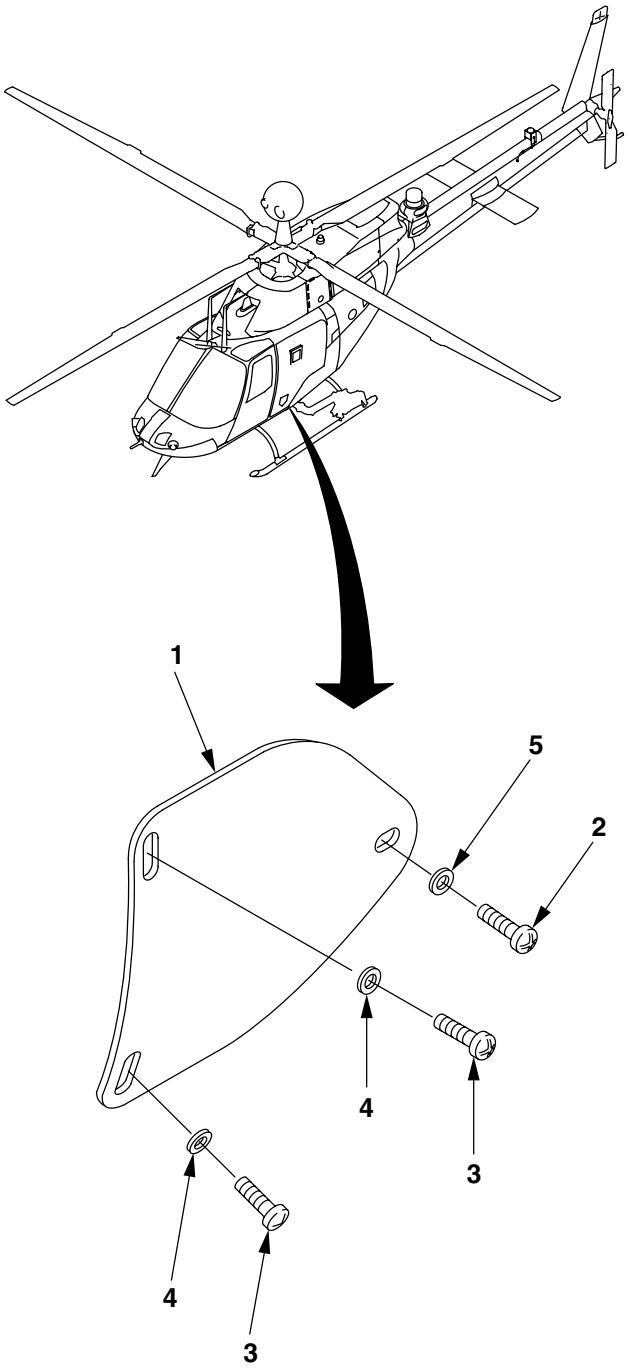
1. Remove screws (2 and 3) with washers (4 and 5).

2. Remove UWP mount fitting cover (1) from helicopter.

INSTALL

3. Position UWP mount fitting cover (1) in place.

4. Secure UWP mount fitting cover using screws (2 and 3) with washers (4 and 5).



406030-59
J0424

END OF TASK

2-2-94. UWP MOUNT FITTING — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 9-1090-214-23&P
TM 1-1520-266-23
TM 11-1520-248-23

Equipment Condition:
UWP Mount Fitting Cover Removed (Task 2-2-93)
UWP Removed (TM 9-1090-214-23&P)
HF COMSEC Unit Mount Removed (Task 9-2-1)
Helicopter Safed (Task 1-6-7)

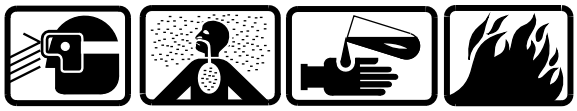
GO TO NEXT PAGE

2-2-94. UWP MOUNT FITTING — CLEANING/INSPECTION/REPAIR (CONT)

NOTE

All procedures are applicable to both left and right UWP mount fittings. See figure UWP Mount Fitting.

CLEAN



Drycleaning Solvent

1. Wipe fitting and adjacent airframe structure with wiping rag (D164) dampened with drycleaning solvent (D199).

INSPECT

2. Visually inspect for loose or missing fasteners within shown limits.

3. Inspect fitting and adjacent airframe structure for cracks utilizing 10X magnifying glass. If suspected cracks are found when performing a visual inspection with a 10X magnifying glass, perform eddy current inspection (TM 1-1520-266-23).

4. Inspect fitting for nicks, scratches, and gouges exceeding **0.005 inch** in depth.

REPAIR

5. Burnish edges of allowable nicks, scratches, and gouges to a **0.250 inch** radius.

NOTE

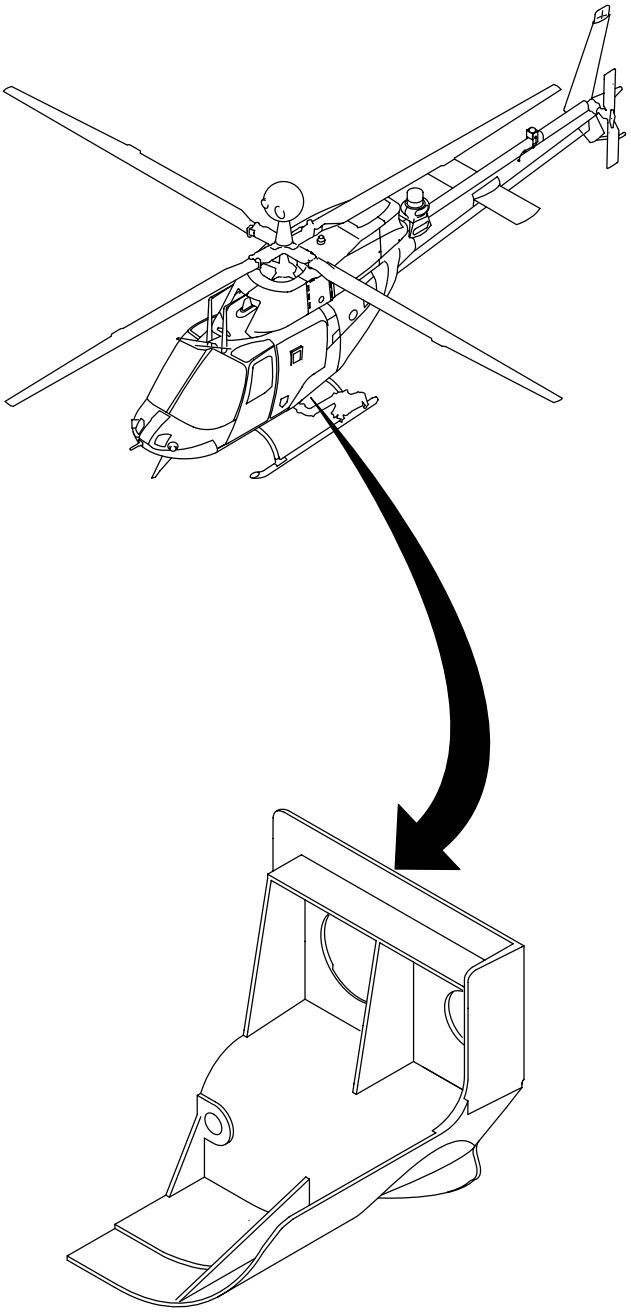
Damage exceeding limits shown requires evacuation of aircraft to depot level maintenance activity for removal of UWP mount fitting and airframe inspection.

INSPECT

FOLLOW-ON MAINTENANCE

Install UWP mount fitting cover (Task 2-2-93) or UWP (TM 9-1090-214-23&P).

Install HF COMSEC unit mount (Task 9-2-1).



406071-53
J0424

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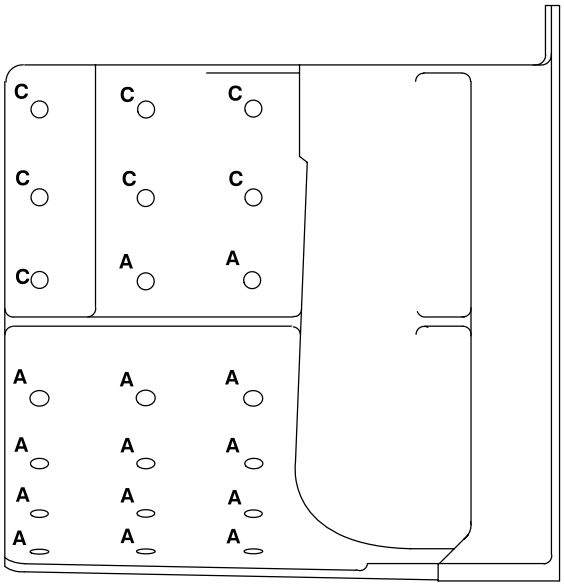
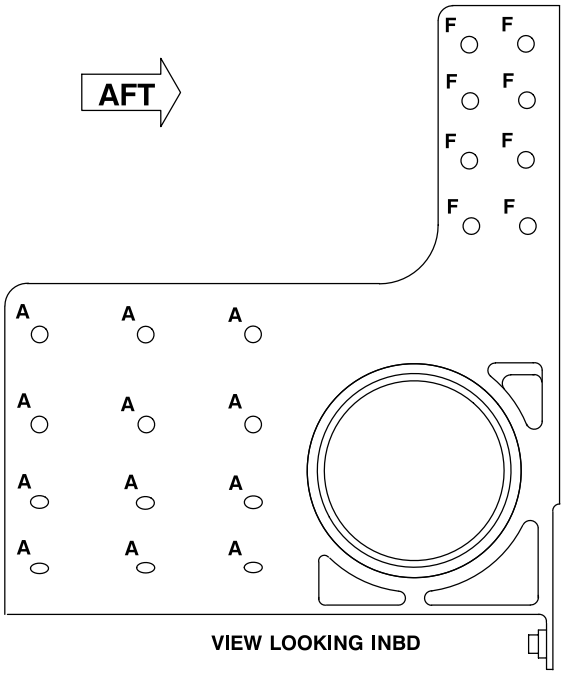


VIEW LOOKING DOWN



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J0566

UWP Mount Fitting (Sheet 1 of 2)

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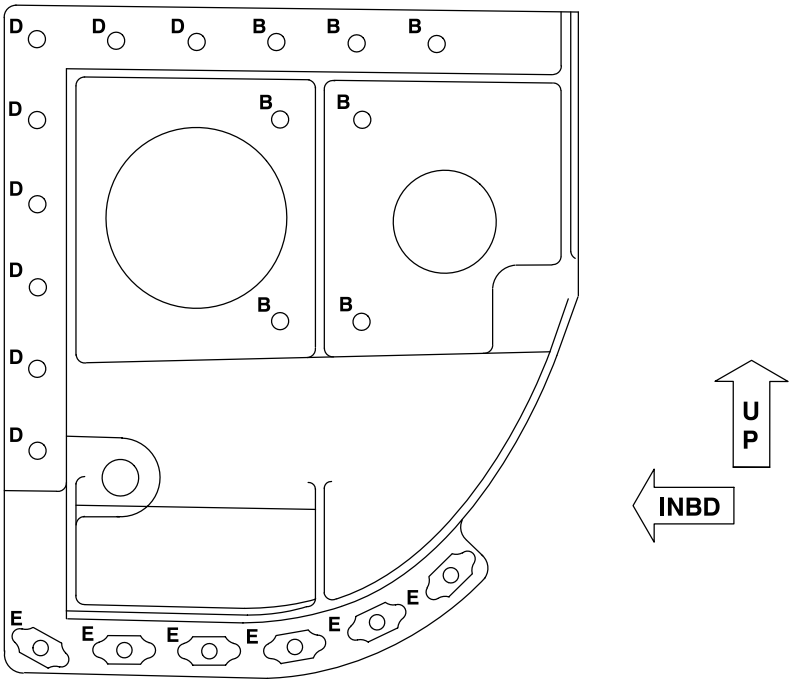
2-2-94. UWP MOUNT FITTING — CLEANING/INSPECTION/REPAIR (CONT)



VIEW LOOKING AFT

NOTES:

1. If cracks are suspected, inspect fitting adjacent airframe members for cracks with 10x magnifying glass. No cracks allowed.
2. Inspect for loose or missing fasteners.
3. If the number of loose fasteners exceeds the limits shown below, evacuate aircraft to depot level maintenance facility for removal of fitting and inspection of airframe for damage.

FASTENER GROUP	A	B	C	D	E	F
MAX. NO. OF LOOSE FASTENERS	3	2	1	2	2	1

4. Replace all missing fasteners.
5. Tighten all loose fasteners.
6. Scratches, nicks, and gouges less than 0.005 inch in depth are negligible. Blend to minimum blend radius of 0.250 inch.

406071-2-2
J0566

UWP Mount Fitting (Sheet 2 of 2)

END OF TASK

2-2-95. LOWER FORWARD SUPPORT FITTINGS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Forward Crosstube Removed (Task 3-1-24)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-95. LOWER FORWARD SUPPORT FITTINGS — REMOVAL/INSTALLATION (CONT)

REMOVE

NOTE

Lower forward support fittings (1) are located on both sides of the helicopter.

1. Remove screws (2) with washers (3).

2. Separate lower forward support fitting (1) from fuselage.

INSTALL

NOTE

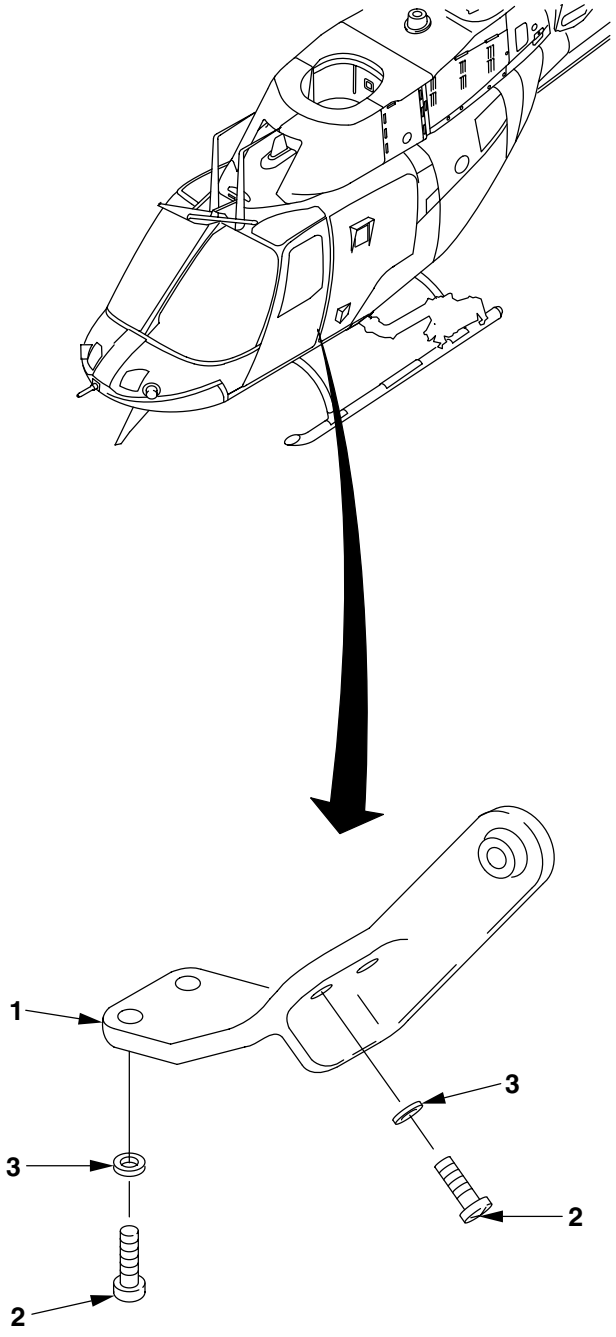
Lower forward support fittings are located on both sides of the helicopter.

3. Place lower forward support fitting (1) on fuselage.

4. Secure in place using screws (2) with washers (3).

FOLLOW-ON MAINTENANCE

Install forward crosstube (Task 3-1-24).



406030-61
J0424

END OF TASK

2-2-96. EXTERNAL FUSELAGE FITTINGS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Sandpaper (D174)
Sealing Compound (D184)
Sealant (D180)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 1-1520-266-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

NOTE

For all procedures see appropriate illustration.

CLEAN

Drycleaning Solvent

1. Use drycleaning solvent (D199) and wiping rags (D164) to clean external fuselage fittings.

2. Wipe dry with clean wiping rag (D164).

INSPECT

3. Visually inspect installed external fuselage fittings for the following damage exceeding the limits shown. See Damage Limits figures that follow this page.

a. Wear

b. Cracks. If crack in external fuselage fitting is suspected perform eddy current inspection (TM 1-1520-266-23)

c. Corrosion (TM 1-1500-344-23)

d. Scratches, nicks, and gouges

e. Loose bushings

f. Missing or deteriorated sealing compound or sealant.

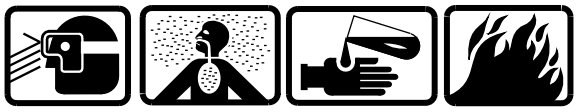
REPAIR

4. Replace external fuselage fittings with damage exceeding repair limits shown.

5. Remove corrosion damage and treat corrosion (TM 1-1500-344-23).

6. Polish out scratches, nicks, and gouges using 320 grit sandpaper (D174).

7. Replace loose bushings and bushings worn beyond allowable limits.



Sealing Compound

8. Remove and replace deteriorated sealing compound (D184) or sealant (D180) as required.

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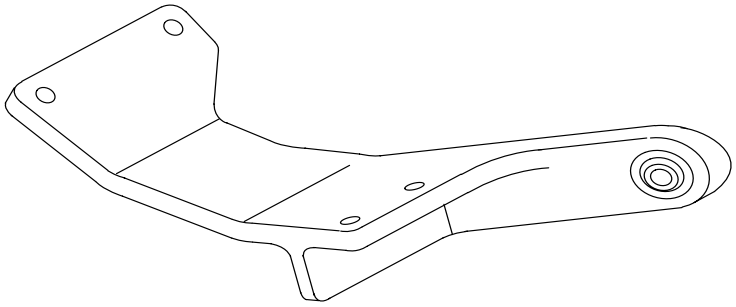
2-2-96. EXTERNAL FUSELAGE FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)



406-030-209-101 (SHOWN)
406-030-209-102 (OPPOSITE)
LOWER FORWARD SEAT SUPPORT FITTING

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.010
CORROSION ◁2	0.007 Before and 0.015 after repair
MAXIMUM AREA PER REPAIR	0.020 Sq. In.
NUMBER OF REPAIRS	Not critical ◁1
EDGE CHAMFER TO REMOVE DAMAGE	0.030 X 45° or 0.020 radius
BORE DAMAGE	0.002 for 1/4 circumference

NOTES:

1. ◁1 No repair may be made within 1.00 inch of a previous repair.
2. ◁2 Corrosion damage must be cleaned up to twice the depth of damage, not to exceed limits above.
3. No cracks are permitted.
4. All dimensions are in inches.

406030-73
J2143

Lower Forward Seat Support Fitting — Damage Limits

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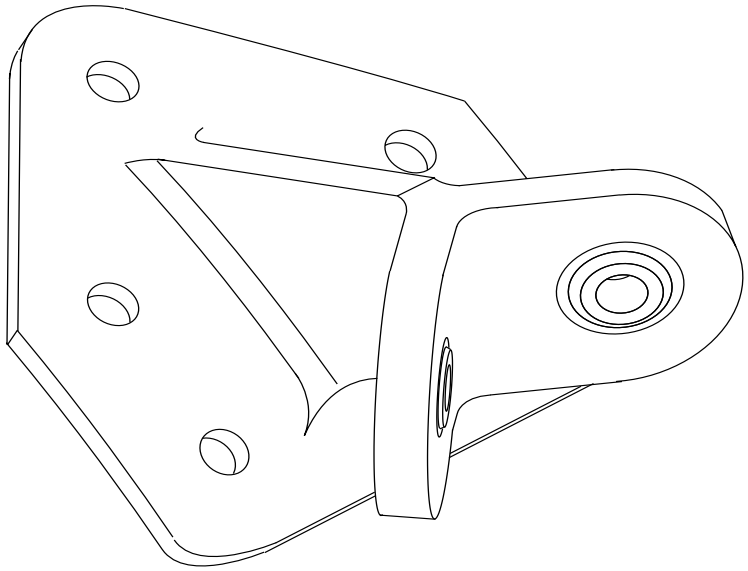

406-030-222-101
HOIST FITTING ASSEMBLY

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL AND CORROSION	0.020 Before and after repair
MAXIMUM AREA PER REPAIR	0.20 Sq. in.
NUMBER OF REPAIRS	Not critical <1>
EDGE CHAMFER TO REMOVE DAMAGE	0.040 x 45° or 0.020 radius
BORE DAMAGE	0.002 for 1/2 circumference

NOTES:

<1> Overlapping repairs are not permitted.

2. No cracks are permitted.

3. All dimensions are in inches.

406030-71
H0204

Hoist Fitting Assembly — Damage Limits

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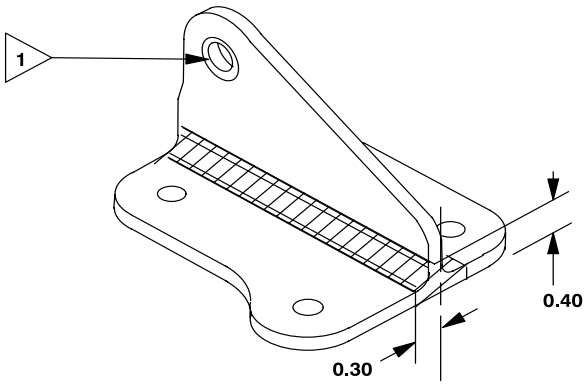
2-2-96. EXTERNAL FUSELAGE FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)



406-030-200
CLEVIS ASSY, LOWER HARGO HOOK

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	NONE ALLOWED	0.015
CORROSION 2	NONE ALLOWED	0.007 Before 0.015 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR 4	———	0.20 Sq. In.
NUMBER OF REPAIRS	———	3
EDGE CHAMFER	———	0.030 X 45°
BORE DAMAGE	———	0.002 for 1/4 circumference

NOTES:

1. Maximum bushing I.D. 0.314 inch.
2. Corrosion damage must be cleaned up to twice the depth of damage, not to exceed allowable limits.
3. Unlimited, except no repair may be made within 1.00 inch of previous repair.
4. Repairs near a bolt bore shall be made uniformly around the bore to provide a flat and square bolt head bearing surface.
5. No cracks are permitted.
6. All dimensions are in inches.

406030-75
J2143

Lower Cargo Hook Clevis Assembly — Damage Limits

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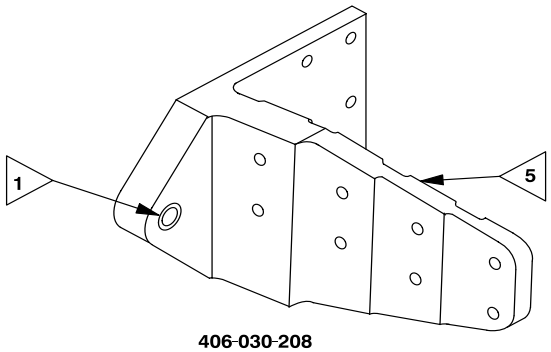
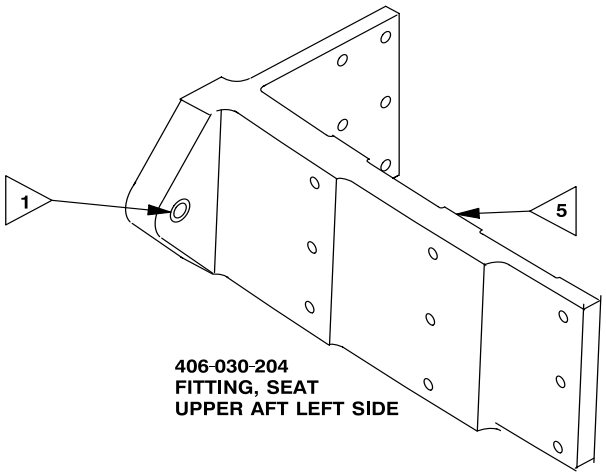
2-2-96. EXTERNAL FUSELAGE FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)



406-030-208
FITTING, SEAT
UPPER AFT RIGHT SEAT



406-030-204
FITTING, SEAT
UPPER AFT LEFT SIDE

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.015
CORROSION 2	0.017 Before and 0.015 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR 4	0.20 Sq. In.
NUMBER OF REPAIRS	3
EDGE CHAMFER	0.030 x 45°
BORE DAMAGE	0.002 for 1/4 circumference

NOTES:

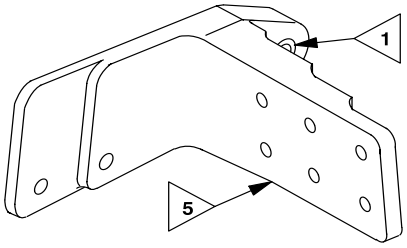
1. Maximum bushing I.D. 0.314 inch.
2. Corrosion damage must be cleaned up to twice the depth of damage, not to exceed allowable limits.
3. Unlimited, except no repair may be made within 1.00 inch of previous repair.
4. Repairs near a bolt bore shall be made uniformly around the bore to provide a flat and square bolt head bearing surface.
5. Seal perimeter with sealing compound (D185).
6. No cracks are permitted.
7. All dimensions are in inches.

406030-77
J2143

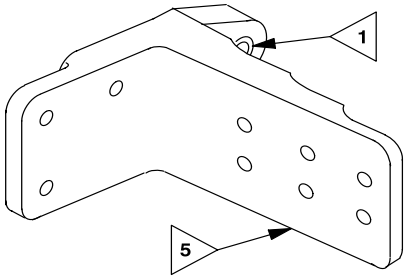
Upper Aft Seat Fittings — Damage Limits

GO TO NEXT PAGE

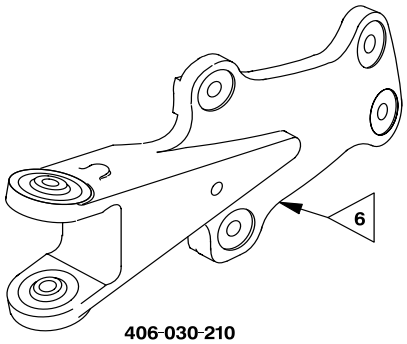
2-2-96. EXTERNAL FUSELAGE FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)



406-030-213
FITTING ASSEMBLY
AFT RIGHT SIDE LITTER



406-030-207
FITTING ASSEMBLY
LEFT SIDE LITTER



406-030-210
FITTING ASSEMBLY
LOWER AFT SEAT SUPPORT

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.015
CORROSION 2	0.017 Before and 0.015 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR 4	0.20 Sq. in.
NUMBER OF REPAIRS	3
EDGE CHAMFER	0.030 x 45°
BORE DAMAGE	0.002 for 1/4 circumference

NOTES:

1. Maximum bushing I.D. 0.252 inch.
2. Corrosion damage must be cleaned up to twice the depth of damage, not to exceed allowable limits.
3. Unlimited, except no repair may be made within 1.00 inch of previous repair.
4. Repairs near a bolt bore shall be made uniformly around the bore to provide a flat and square bolt head bearing surface.
5. Seal perimeter with sealing compound (D185).
6. Seal perimeter with sealant (D180).
7. No cracks are permitted.
8. All dimensions are in inches.

406030-76
J2143

Litter Fitting Assemblies — Damage Limits

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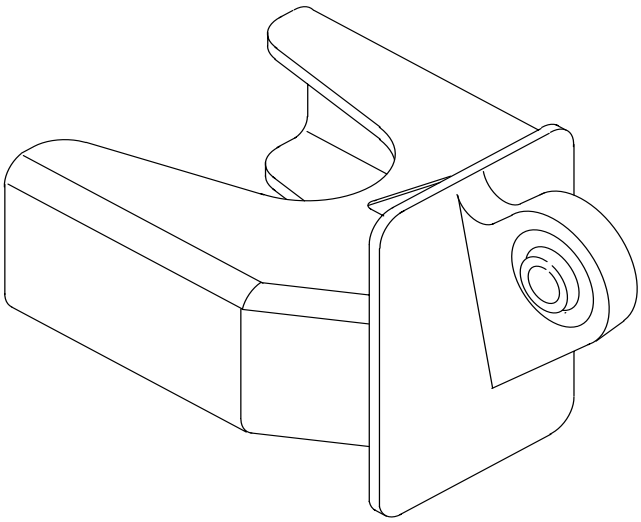
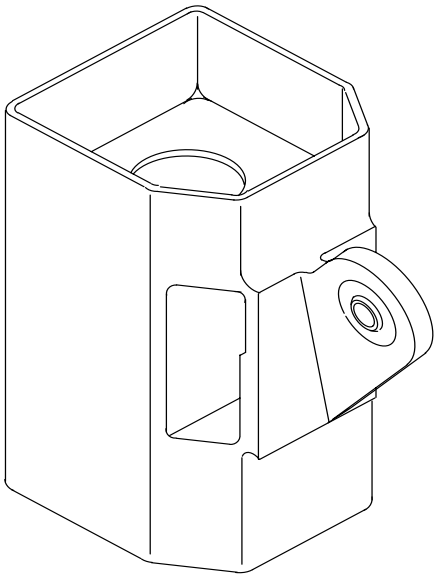


406-030-205-101 (SHOWN)
406-030-205-102 (OPPOSITE)
FWD LITTER SUPPORT FITTING ASSY



406-030-206-101 (SHOWN)
406-030-206-102 (OPPOSITE)
UPPER FWD EXTERNAL SEAT SUPPORT

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.010
CORROSION ◁2	0.007 Before and 0.015 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.20 Sq. in.
NUMBER OF REPAIRS	Not critical ◁1
EDGE CHAMFER	0.030 x 45°
BORE DAMAGE	0.002 for 1/4 circumference

NOTES:

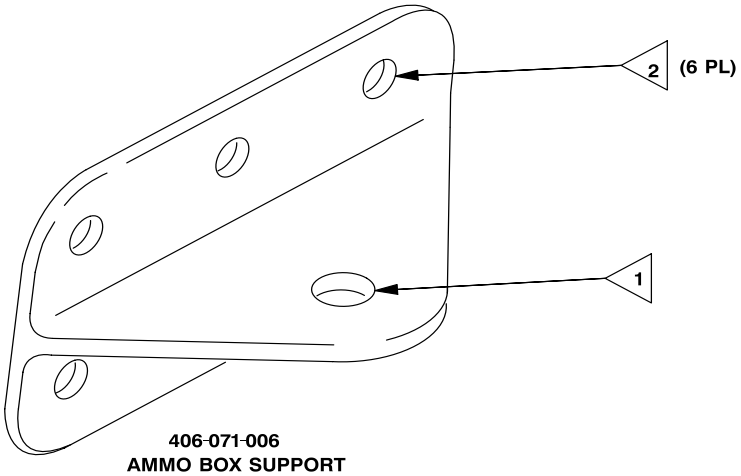
1. No repair may be made within 1.00 inch of a previous repair.
2. Corrosion damage must be cleaned up to twice the depth of damage, not to exceed limits above.
3. All dimensions are in inches.
4. No cracks allowed.
5. Minimum bearing breakaway torque 0.25 in.-lb..

406030-72
J2143

Litter Support Fitting and External Seat Support — Damage Limits

GO TO NEXT PAGE

2-2-96. EXTERNAL FUSELAGE FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)



406-071-006
AMMO BOX SUPPORT

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.020
CORROSION 3	0.010 Before and 0.020 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR 4	Not critical
NUMBER OF REPAIRS	Not critical
EDGE CHAMFER	0.040 X 45°
BORE DAMAGE 1 2	0.005 for 1/2 circumference

NOTES:

1. Maximum diameter 0.255 inch.
2. Maximum diameter 0.200 inch.
3. Corrosion damage must be cleaned up to twice the depth of damage, not to exceed allowable limits.
4. Overlapping repairs are not permitted. Repairs cannot reduce net material thickness by more than 0.020 inch.
5. No cracks are permitted.
6. All dimensions are in inches.

406071-69
J2143

Ammo Box Support — Damage Limits

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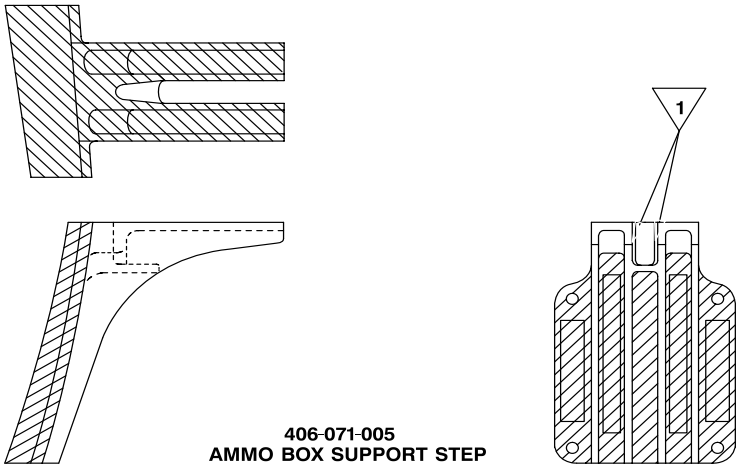


406-071-005
AMMO BOX SUPPORT STEP

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	0.040	0.020
CORROSION	0.020 Before and 0.040 after repair	0.010 Before and 0.020 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	Not critical	0.50 Sq. in.
NUMBER OF REPAIRS	Not critical	2 3
EDGE CHAMFER	0.060 x 45°	0.040 x 45°
BORE DAMAGE		0.002 for 1/3 circumference
BUSHING WEAR (I.D.)		0.255

NOTES:

1. Bushing (P/N 21-006B8-32.5).
2. No repair may be made within 1.00 inch of a previous repair.
3. Repairs in this area cannot reduce material thickness by more than 0.020 inch.
4. No cracks are permitted.
5. All dimensions are in inches.

406071-70
J1972

Ammo Box Support Step — Damage Limits

END OF TASK

2-2-97. LANDING GEAR SUPPORT FITTING ASSEMBLIES — REMOVAL/INSTALLATION/ INSPECTION

This task covers: Removal, Installation and Inspection (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B237)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)

References:
TM 1-1520-266-23

Equipment Condition:
Landing Gear Removed (Task 3-1-5)

GO TO NEXT PAGE

2-2-97. LANDING GEAR SUPPORT FITTING ASSEMBLIES — REMOVAL/INSTALLATION/ INSPECTION (CONT)

REMOVE

1. Remove aft support fitting assemblies as follows:

a. Remove two bolts (1 and 2) and washers (3 and 4) from right and left aft landing gear support fitting assemblies (5).

b. Separate aft landing gear support fitting assemblies (5) from fuselage.

2. Remove left forward support fitting as follows:

a. Remove four bolts (6) and washers (7) from left forward support fitting (8).

b. Separate left forward support fitting assembly (8) from fuselage.

3. Remove right forward support fitting as follows:

NOTE

Nuts (9) are located aft of cockpit bulkhead.

a. Gain access to nuts (9).

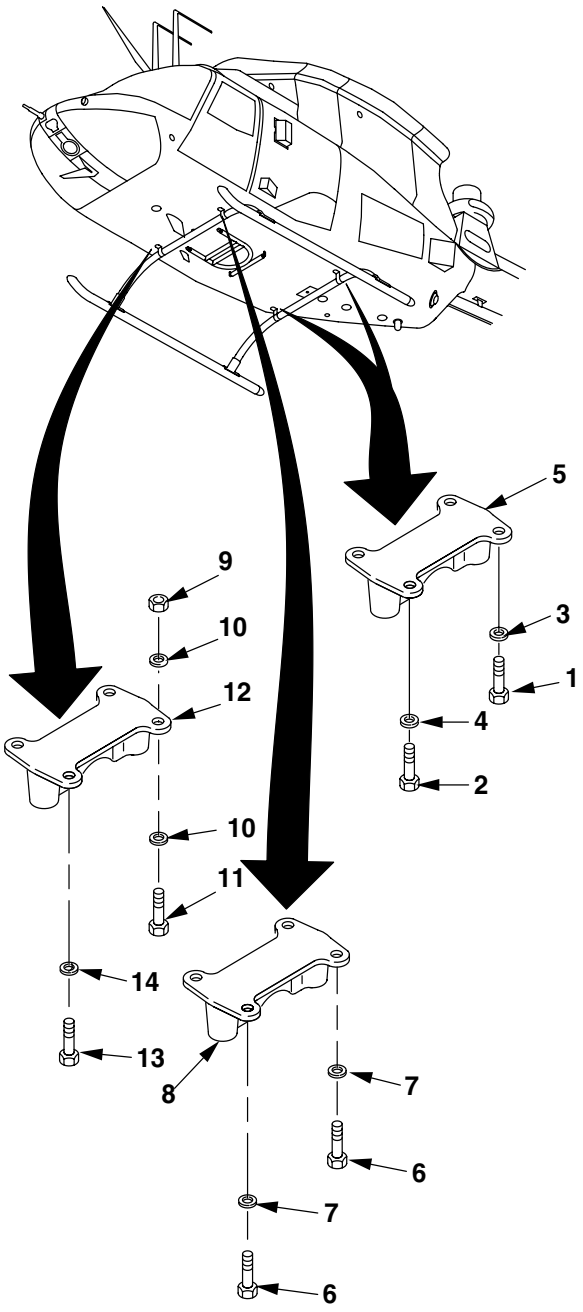
b. Remove two nuts (9), four washers (10), and two bolts (11) from aft mount holes in right forward support fitting assembly (12).

c. Remove two bolts (13) with washers (14) from forward mount holes in right forward support fitting assembly (12).

4. Separate right forward landing gear support fitting (12) from fuselage.

INSPECT

Inspect fittings for damage exceeding limits shown. See figure Landing Gear Support Fitting Assemblies — Damage Limits.



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J1972

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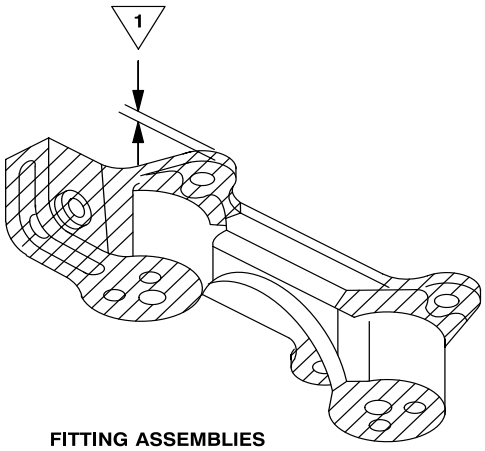
2-2-97. LANDING GEAR SUPPORT FITTING ASSEMBLIES — REMOVAL/INSTALLATION/ INSPECTION (CONT)



FITTING ASSEMBLIES
406-030-217-101 & -102

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION 1 2 3	0.005 Before and 0.010 after repair	0.010 Before and 0.020 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.38 sq. in.	0.50 sq. in.
NUMBER OF REPAIRS	1 Per repair area	4
EDGE CHAMFER TO REMOVE DAMAGE	0.030 X 45°	0.060 X 45°
BORE DAMAGE 5	0.003 For one-half bushing diameter only	Not applicable

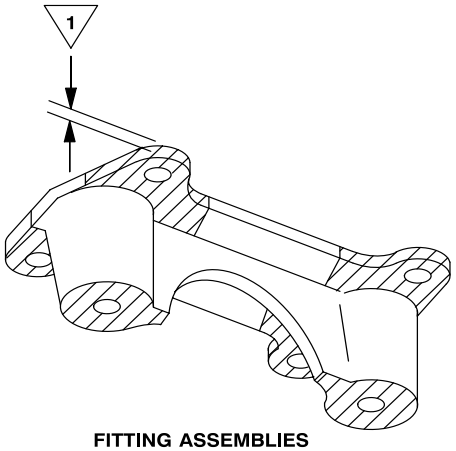
NOTES:

1. 0.150 inch minimum flange thickness after repair, typical.
2. Corrosion damage must be cleaned up to twice damage depth.
3. If maximum depth is exceeded, replace fitting.
4. Damage areas must be at least 1.25 inches apart.
5. Above this limit, remove and replace bushing.
6. No cracks are permitted.
7. All dimensions are in inches.

406030-124
J2143

Landing Gear Support Fitting Assemblies — Damage Limits (Sheet 1 of 2)

GO TO NEXT PAGE



FITTING ASSEMBLIES
406-052-016-101 & -105
406-552-001-107
406-552-002-103

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
	DAMAGE LOCATION SYMBOLS	
MECHANICAL AND CORROSION 1 2 3	0.005 Before and 0.010 after repair	0.010 Before and 0.020 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.38 sq. in.	0.50 sq. in.
NUMBER OF REPAIRS	1 Per repair area	4
EDGE CHAMFER TO REMOVE DAMAGE	0.030 X 45°	0.060 X 45°
BORE DAMAGE	Not allowed	Not applicable

NOTES:

1. 0.120 inch minimum flange thickness after repair, typical.
2. Corrosion damage must be cleaned up to twice damage depth.
3. If maximum depth is exceeded, replace fitting.
4. Damage areas must be at least 1.25 Inches apart.
5. No cracks are permitted.
6. All dimensions are in inches.

406030-123
J2143

Landing Gear Support Fitting Assemblies — Damage Limits (Sheet 2 of 2)

GO TO NEXT PAGE

2-2-97. LANDING GEAR SUPPORT FITTING ASSEMBLIES — REMOVAL/INSTALLATION/ INSPECTION (CONT)

INSTALL

5. Place right forward landing gear support fitting (12) on fuselage and secure with two bolts (13) and washers (14).

6. Install two bolts (11), four washers (10), and two nuts (9).

7. Place left forward support fitting assembly (8) on fuselage and secure with four bolts (6) and washers (7). Torque bolts (6) **50 TO 70 INCH-POUNDS**.

NOTE

Aft fitting assemblies with cargo hook attach provisions will require two washers under each bolt head on installation.

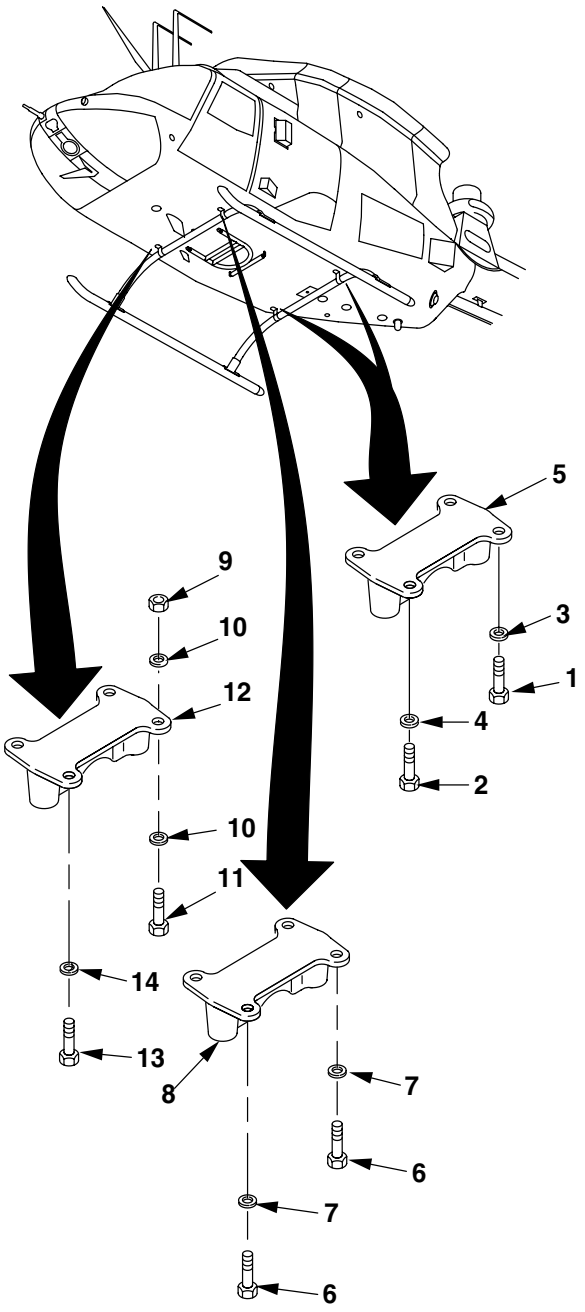
8. Place aft landing gear support fitting assemblies (5) on fuselage and secure with two bolts (1 and 2) and washers (3 and 4). Torque bolts (1 and 2) **50 TO 70 INCH-POUNDS**.

INSPECT

If cracks of landing gear support fitting are suspected perform magnetic particle inspection (TM 1-1520-266-23).

FOLLOW-ON MAINTENANCE

Install landing gear (Task 3-1-5).



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J1972

END OF TASK

2-2-98. PROTECTIVE RUBBER PAD BELOW FUEL RECEIVER — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)

Material:
Acetone (D2)
Sandpaper (D172)
Masking Tape (D216)
Cheesecloth (D56)
Rubber (D208)
Adhesive (D33)
Adhesive (D12)

Personnel Required:
67S Scout Helicopter Repairer

References:
DOD 6050.5-L

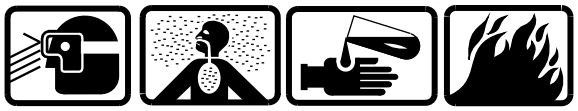
Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-2-98. PROTECTIVE RUBBER PAD BELOW FUEL RECEIVER — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove pad (1) from below fuel receiver (2) using plastic scraper (B123).



Acetone

2. Remove adhesive residue using cheesecloth (D56) moistened with acetone (D2).

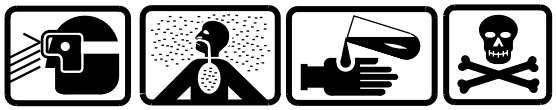
INSTALL

3. Cut **10.00 inch** square pad (1) from rubber (D208) and cut one edge to match contour around fuel receiver retainer (2). Bevel all edges **0.125 inch**.

Adhesive

4. Apply adhesive (D33) to pad (1) and place on helicopter with contoured cut around fuel receiver retainer (2).

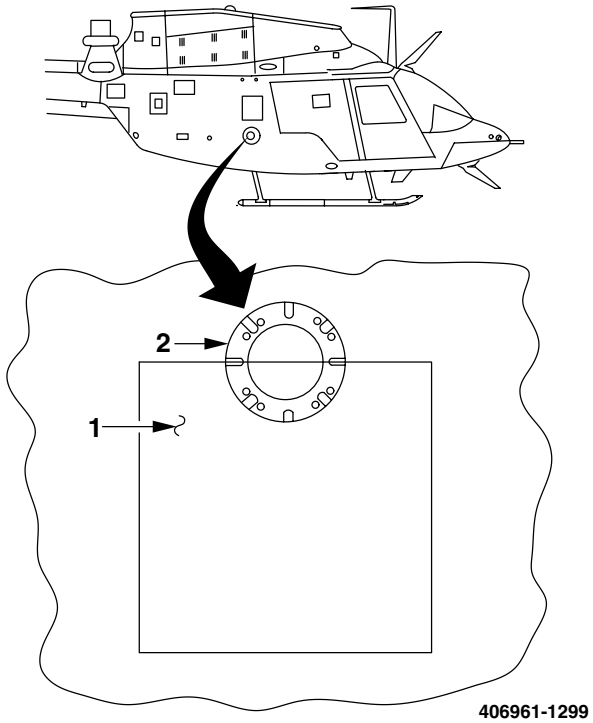
5. After adhesive has cured tape area around pad (1) with masking tape (D216) leaving **0.250 inch** border between tape and pad (1).



Adhesive

6. Apply adhesive (D12) under all edges and along outside edge of pad (1).

7. Remove tape and allow adhesive (D12) 6 to 8 hours to cure.



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J0425

END OF TASK

2-2-99. CENTER CONSOLE TOP COVER — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68F Aircraft Electrician

References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Electrical Power Removed (Tasks 1-6-5 and 1-6-6)
Pilot Collective Stick Cover Removed (Task 11-2-3)

GO TO NEXT PAGE

2-2-99. CENTER CONSOLE TOP COVER — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove center console cover (1) attaching hardware.

2. Remove collective friction knob (2) (Task 11-2-64).

3. Remove keylock switch (3) from center console cover (1) (Task 9-6-54).

4. Remove center console cover (1).

INSTALL

5. Install keylock switch (3) on center console cover (1) (Task 9-6-54).

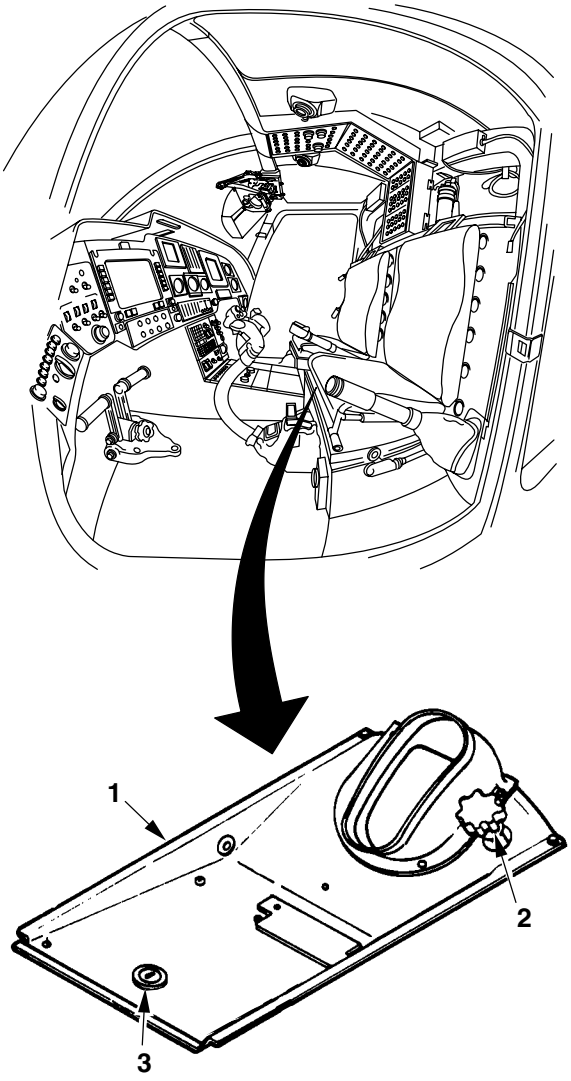
6. Install center console cover (1) and attaching hardware.

7. Install friction knob assembly (2) (Task 11-2-64).

INSPECT

FOLLOW-ON MAINTENANCE

Install pilot collective stick cover (Task 11-2-3).



406001-265
J0537

END OF TASK

2-2-100. BATTERY BALLAST — REMOVAL/CLEANING/INSPECTION/INSTALLATION

This task covers: Removal, Cleaning, Inspection, and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Battery Ballast (H-228)

Material:
Boric Acid (D234)
Acid Swabbing Brush (D51)
Distilled Water (D94)
Rubber Gloves (D111)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

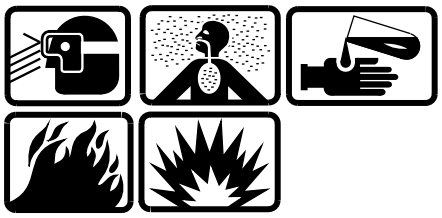
References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Battery Removed (TM 11-1520-248-23)

REMOVAL

1. Remove ballast clip (1).
2. Remove battery ballast (H-228) (2).

CLEAN



Mixed Acid Solution

CAUTION

To avoid contaminating laminations of ballast weight, boric acid solution shall not be allowed to stand in rivet area.

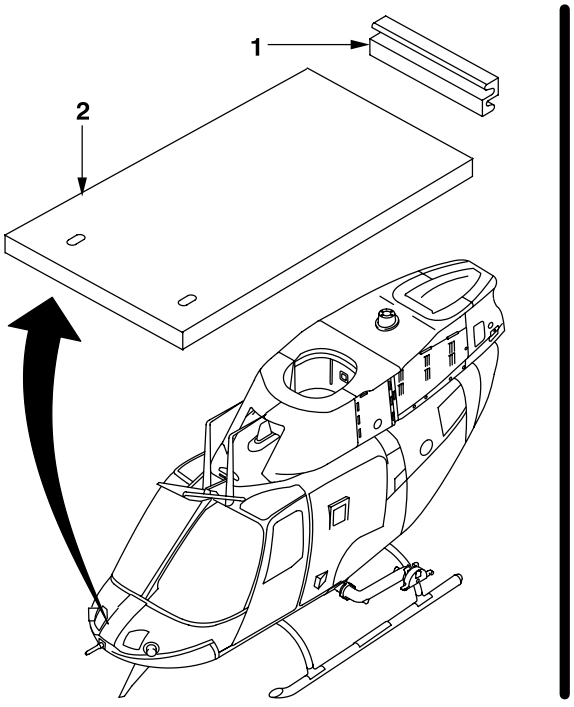
3. Neutralize any spilled electrolyte by applying a 3 percent solution of boric acid (D234) with acid swabbing brush (51).

4. Allow solution to remain on surface of battery ballast (H-228) (2) for 10 minutes and remove neutralized electrolyte with wiping rags (D164) and distilled water (D94).

INSPECT

5. Inspect battery ballast (H-228) (2) for corrosion and loose rivets.

INSTALL



406961-512-1
J2700

6. Position battery ballast (H-228) (2) into compartment.
7. Install ballast clip (1).

INSPECT

FOLLOW-ON MAINTENANCE

Install battery (TM 11-1520-248-23).

END OF TASK

Section III. TAILBOOM

2-7. TAILBOOM

2-8. INTRODUCTION

This section contains: maintenance procedures for cleaning, inspection, repair, removal and installation of tailboom, aft fuselage attach fittings, attach bolts, tail rotor gearbox support bearing hanger supports, driveshaft cover, vertical fin, tail skid, horizontal stabilizer, and taillight support. Standard torques are provided in Appendix P and TM 1-1500-204-23.

2-9. TASK LIST

The task list consists of tasks required to support unit and intermediate level maintenance.

LIST OF TASKS

2-3-1. TAILBOOM — CLEANING/INSPECTION (VISUAL AND FLUORESCENT PENETRANT)/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)
Forward Support (Work Aid)
Aft Support (Work Aid)
Plastic Scraper (B123)

Material:
Rubber Gloves (D111)
Drycleaning Solvent (D199)
Acetone (D2)
Adhesive (D19)
Chemical Conversion Coating (Alodine 1201) (D57)
Epoxy Primer Coating (D98)
Polyurethane Top Coating (D71)
Sandpaper (D174)
Wiping Rags (D164)
Corrosion Preventive Compound (D231)

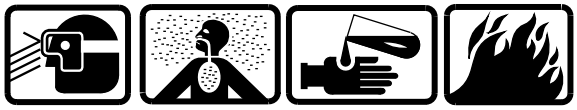
Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
DOD 6050.5-L
TM 1-1500-204-23
TM 1-1500-344-23
TM 1-1520-266-23
TM 55-1500-345-23
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter Washed (Task 1-4-11)

CLEAN

1. Make sure outside of tailboom is clean.



Drycleaning Solvent

2. Use wiping rags (D164) and drycleaning solvent (D199) to clean primed surfaces on inside of tailboom. Clean primed surfaces as required for inspection.

Acetone

3. Use wiping rags (D164) and acetone (D2) to clean unprimed surfaces as required for inspection.

4. Dry unprimed surfaces with wiping rags (D164).

INSPECT

5. While inspecting tailboom, observe following:

a. Damage in the area between B.S. 44.00 and B.S. 98.89 which does not exceed 10 percent of tailboom circumference in height and 30 percent of tailboom circumference in length may be repaired by patching (circumference to be measured at aft end of damage).

b. A maximum of two damaged areas per cross section of the tailboom is permitted. Example: A line drawn around the circumference of the tailboom must not touch more than two damaged areas.

c. Damage areas must be a minimum of **8.00 inches** apart to be negligible.

d. Total damage to the tailboom is not to exceed 5 percent of tailboom area (approximately

GO TO NEXT PAGE

2-3-1. TAILBOOM — CLEANING/INSPECTION (VISUAL AND FLUORESCENT PENETRANT)/REPAIR (CONT)

160.00 square inches). Replace tailboom having more damage (Tasks 2-3-2 and 2-3-8).

e. Any damage forward of B.S. 44.00 exceeding negligible limits requires repair (TM 1-1500-204-23).

f. If limits are exceeded, replacement or repair of tailboom is required. Unless reference is made to specific task, damage exceeding negligible limits is to be repaired within limits established for sheet metal damage after cleanup (TM 1-1500-204-23).

6. Inspect tailboom skin for waviness.

a. Tailboom waviness, excluding dents and creases aft of horizontal stabilizer (between B.S. 98.84 and 174.11), is negligible provided irregularities do not exceed **0.090 inch** deep when measured with straight edge and standoff and change in profile is gradual.

b. Tailboom waviness, excluding dents and creases forward of the horizontal stabilizer (between B.S. 42.6 and 80.80), is negligible provided irregularities do not exceed **0.060 inch** deep when measured with straight edge and standoff and change in profile is gradual.

7. Inspect tailboom for localized buckling and bending. Buckling or distortion of upper or lower skin surface resulting from hard landing is cause for replacement of tailboom (Task 2-3-2 and Task 2-3-8).

8. Inspect tailboom for skin crinkling, i.e., localized buckling of skin with sharp changes in profile. This usually involves skin rippling or wrinkle overlap.

9. Inspect tailboom for scratches and creases.

10. Use fluorescent penetrant method to inspect any scratch or crease which obviously exceeds thickness of finish (TM 1-1500-204-23).

NOTE

Scratches not in excess of **0.005 inch** depth and at angles greater than 45 degrees from the longitudinal axis of the tailboom may be blended out provided they do not exceed 1/6 the circumference of the tailboom, and provided they are not also accompanied by creasing. Scratches not in excess of **0.010 inch** depth and at angles less than 45 degrees from the longitudinal axis may also be blended out. No limit on length or number of longitudinal scratches provided damage is not clustered.

11. Inspect tailboom for dents and creases.

a. Any dent or crease which obviously causes misalignment of tailboom or tail rotor driveshaft is nonreparable. A tailboom with these deficiencies shall be replaced (Task 2-3-2 and Task 2-3-8).

b. Any dent within following limits shall be repaired:

(1) More than two smooth dents per bulkhead section.

(2) Dent exceeding **1.250 inches** in diameter.

(3) Dents separated by less than 90 degrees about circumference of tailboom.

(4) Clustered minor dimpling and peening forward of horizontal stabilizer to B.S. 42.59.

NOTE

In general there are no limitations to the number of minor dimples or peenings provided this damage is not clustered. Dimpling or peening is any dent **0.125 to 0.250 inch** in diameter which does not tear or significantly stretch the skin.

c. Any dent within following limits is negligible:

(1) Smooth contour and free of cracks, nicks, or scratches.

GO TO NEXT PAGE

2-3-1. TAILBOOM — CLEANING/INSPECTION (VISUAL AND FLUORESCENT PENETRANT)/REPAIR (CONT)

(2) Maximum of one dent and minimum of **2 inches** (edge to edge) between dents on circumference of tailboom at any boom station.

(3) Maximum diameter of dents is **1.250 inches**. Maximum depth and location of dents acceptable without repair are as follows:

From Boom Station	To (BS)	Lower Right Side Quadrant	Other Three Quadrants
31.92	42.59	0.005	0.005
42.59	55.00	no dents	*0.005
55.00	-80.0	no dents	*0.010
80.0-	136.0-	0.010	0.020
136.0-	163.0-	0.020	0.030

*NOTE: No dents are permitted in the lower left side quadrant between BS 42.59 to 80.00.

12. Inspect tailboom for loose or missing rivets. Loose or missing rivets must be replaced (TM 1-1500-204-23).

NOTE

Approval and instruction from AMCOM Engineering shall be obtained before repairing cracks in tailboom.

13. Inspect tailboom for cracks, especially in area around tail rotor driveshaft hanger bearing brackets and tail rotor gearbox support fitting utilizing eddy current method (TM 1-1520-266-23). Cracks forward of BS 98.89 must be repaired (TM 1-1500-204-23). No repairs are allowed for cracks aft of BS 98.89. Tailboom must be replaced.

14. Inspect tailboom for punctures.

15. Inspect all tailboom repairs for buckling between rivets. Inspect patches for creasing and cracks. Inspect for missing or loose rivets.

16. Inspect tailboom for corrosion. Reparable corrosion is limited to **0.002 inch** before repair and **0.004 inch** after cleanup for 10 percent of tailboom circumference and maximum of **4 inches** in longitudinal length.

a. Maximum of two corrosion damaged areas per cross section of tailboom is permitted. Example: Line drawn around circumference of tailboom must not touch more than two damaged areas.

b. Damage areas must be minimum of **8 inches** apart.

c. Total damage to tailboom is not to exceed 5 percent of tailboom area (approximately 160.0 square inches).

d. Clean up corrosion within reparable limits (TM 1-1500-344-23). Replace tailboom if limits are exceeded.

e. Refinish area after cleanup (TM 55-1500-345-23).

17. Inspect tailboom for structural damage. If damage is located forward of B.S. 43.00 between B.S. 78.00 and 99.00 or aft of B.S. 172.0, determine if bulkheads, supports, and fittings have sustained damage. Damage to these parts is cause for tailboom replacement (Task 2-3-2 and Task 2-3-8).

INSPECT TAIL ROTOR DRIVESHAFT COVER

18. Inspect tail rotor driveshaft cover (Task 2-3-12).

INSPECT FIN ASSEMBLY

19. Inspect fin assembly (Task 2-3-16).

INSPECT TAIL ROTOR AND TAIL ROTOR GEARBOX

20. Inspect tail rotor and tail rotor gearbox (Task 5-4-1 and Task 6-7-2).

21. Inspect tail rotor gearbox support (Task 2-3-6).

INSPECT HORIZONTAL STABILIZER

22. Inspect horizontal stabilizer (Task 2-3-25 and Task 2-3-26).

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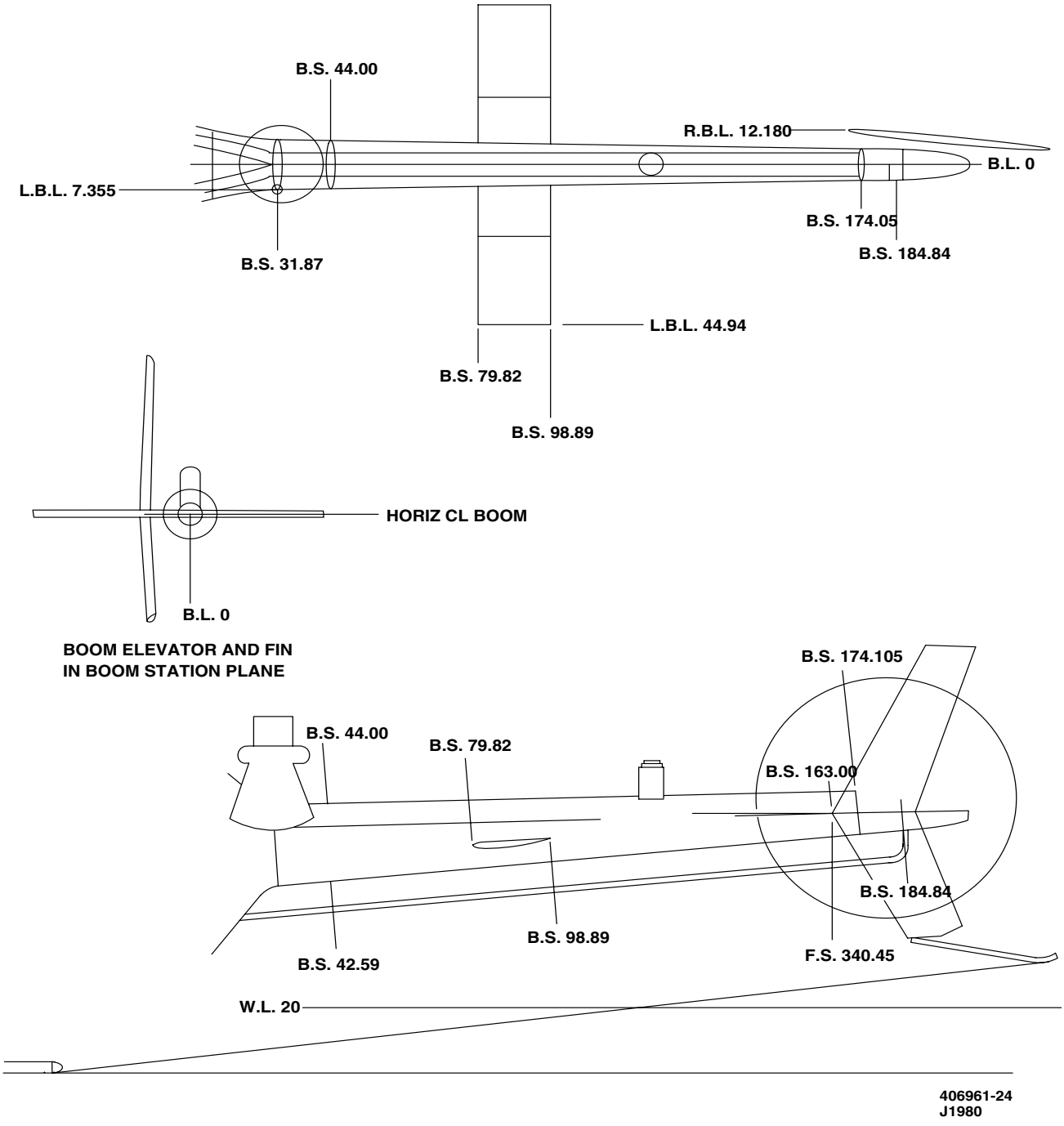
2-3-1. TAILBOOM — CLEANING/INSPECTION (VISUAL AND FLUORESCENT PENETRANT)/REPAIR (CONT)



Tailboom Bulkhead Stations

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2-3-1. TAILBOOM — CLEANING/INSPECTION (VISUAL AND FLUORESCENT PENETRANT)/REPAIR (CONT)

INSPECT HF ANTENNA

23. Inspect HF antenna (TM 11-1520-248-23).

INSPECT TAILBOOM ATTACH BOLTS

24. Inspect four tailboom attach bolts and nuts (Task 2-3-4).

SCHEDULED VISUAL INSPECTION

25. Inspect tailboom top and bottom skin for previous repairs aft of horizontal stabilizer. If previous repairs are found, replace tailboom (Tasks 2-3-2 and 2-3-8).

NOTE

Inspection area is **1.00** inch forward and aft, and **3.00** inches above and below aftmost rivet securing aft tailrotor driveshaft cover to tailboom. Inspection area includes Hi-Locs.

26. Inspect tailboom inspection area for cracks and other obvious flaws and condition and security of Hi-Locs.

SCHEDULED FLUORESCENT PENETRANT INSPECTION

27. Chemically remove paint and primer (TM 55-1500-345-23) **1.00 inch** forward and aft and **3.00 inches** above and below aftmost rivet securing aft tailrotor driveshaft cover to tailboom.

Drycleaning Solvent

28. If applicable remove corrosion preventive compound from inspection area using drycleaning solvent (D199).

CAUTION

To prevent failure to detect flaws in aircraft skin in inspection area, inspectors shall not wear eyeglasses with light sensitive lenses while performing inspection.

NOTE

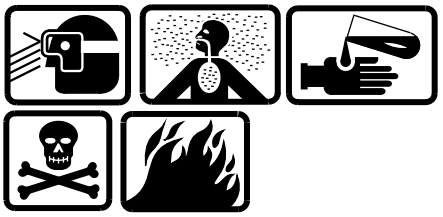
Eddy current method may be used in place of fluorescent penetrant if equipment and qualified personnel permit.

29. Perform fluorescent penetrant inspection of inspection area (TM 1-1520-266-23).

a. If cracks are found, replace tailboom (Tasks 2-3-2 and 2-3-8).

Drycleaning Solvent

b. If no cracks are found, clean inspection area with drycleaning solvent (D199).



Corrosion Preventive Compound

30. Apply coat of corrosion preventive compound (D231).

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2-3-1. TAILBOOM — CLEANING/INSPECTION (VISUAL AND FLUORESCENT PENETRANT)/REPAIR (CONT)

REPAIR

NOTE

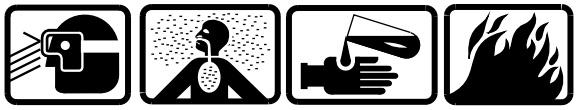
- Tailboom repair is limited to patching of minor damage forward of BS 98.89. All repairs shall be within accepted sheet metal practices (TM 1-1500-204-23).
- Tailboom skin repairs shall not interfere with fit of tail rotor driveshaft cover.

31. Clean up damaged skin. Use minimum **0.125 inch** radius for all patches.

32. Prepare patch of aluminum alloy sheet.

33. Shape patch to contour of tailboom.

34. Extend patch minimum of **3.00 inches** forward of damaged area, **3.00 inches** aft of damaged area, **1.00 inch** below damaged area, and **1.00 inch** above damaged area.

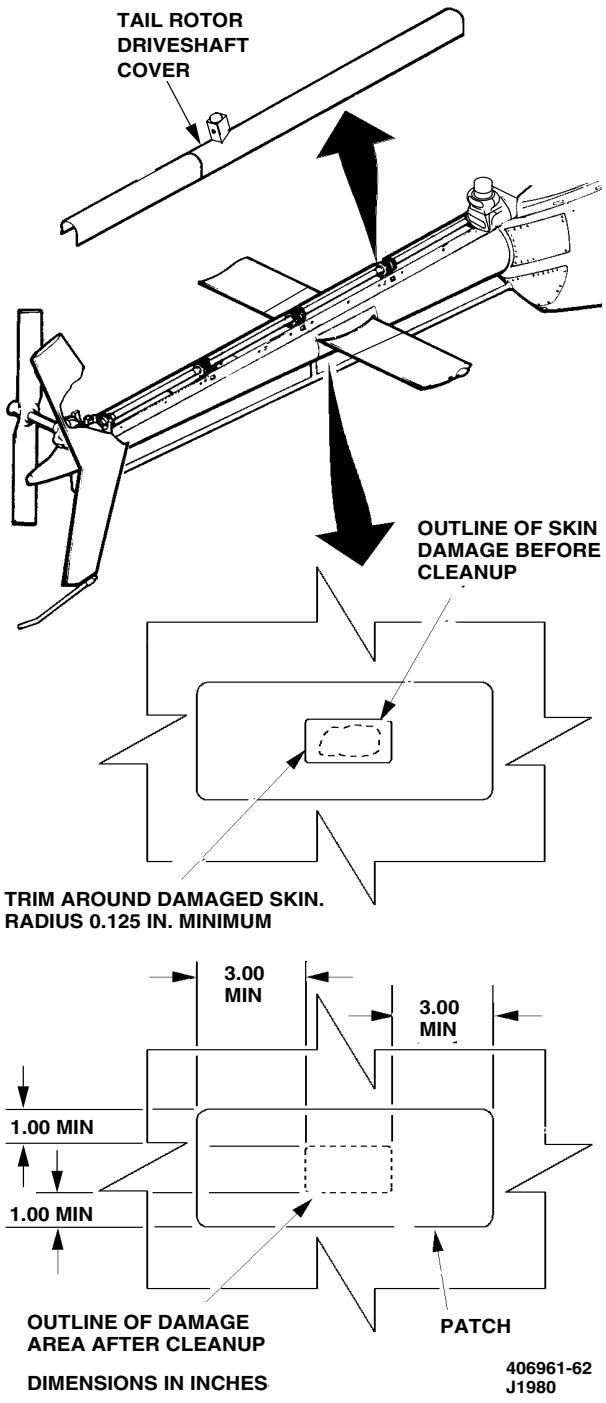


Acetone

35. Use wiping rags (D164) and acetone (D2) to clean surfaces to be bonded.

Sanding Operations

36. Use 320 grit sandpaper (D174) to lightly sand surfaces to be bonded. Remove all surface finish.



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2-3-1. TAILBOOM — CLEANING/INSPECTION (VISUAL AND FLUORESCENT PENETRANT)/REPAIR (CONT)

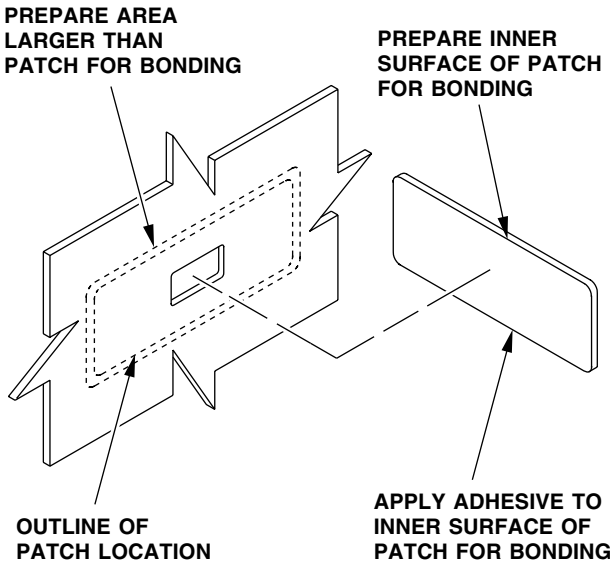
Acetone

37. Use wiping rags (D164) and acetone (D2) to remove sanding residue from surfaces. Use wiping rags (D164) for dry surfaces before acetone (D2) evaporates.

APPLY PATCH

38. Apply adhesive (D19) to inner surface of patch (Task 2-2-66).

39. Place patch over damaged area.



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2-3-1. TAILBOOM — CLEANING/INSPECTION (VISUAL AND FLUORESCENT PENETRANT)/REPAIR (CONT)

40. Install rivets with at least three vertical rows forward of damaged area, at least three vertical rows aft of damaged area, at least one horizontal row above damaged area, and at least one horizontal row below damaged area. Install rivets within pot life of adhesive (D19).

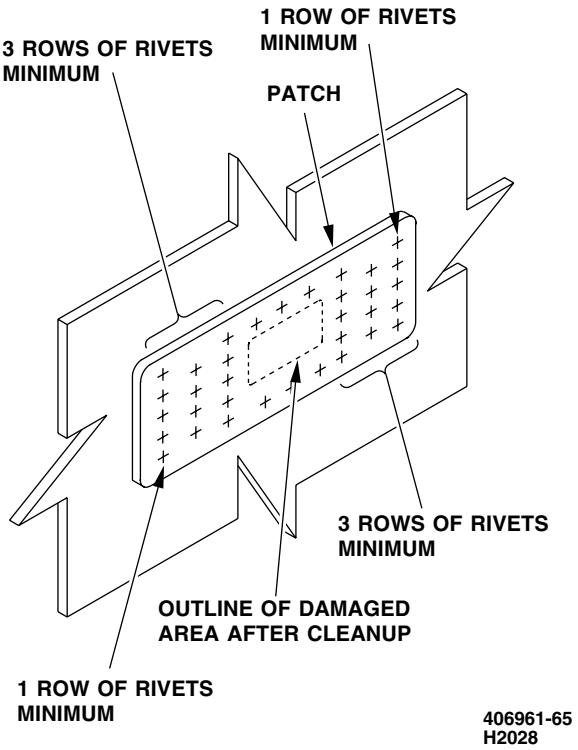
NOTE

- Pot life of adhesive (D19) is 40 minutes at 75 °F.
- Rivet size and spacing to be the same as skin lap joints.

41. Allow adhesive to cure for 24 hours at 65 to 85 °F.

NOTE

Alternate cure procedure — Allow adhesive to cure for 55 to 65 minutes at 175 to 195 °F.



42. Use plastic scraper (B123) to remove excess adhesive.

FINISH PATCH AREA

43. Apply Alodine 1201 (D57) (TM 55-1500-345-23).

44. Apply one coat of epoxy primer coating (D98) (TM 55-1500-345-23).

45. Apply one coat of conductive coating (D71) (Task 2-2-64).

46. Apply two coats of polyurethane top coating (D150) (Task 2-2-65).

47. Replace markings if damaged (TM 55-1500-345-23).

INSPECT

END OF TASK

2-3-2. TAILBOOM — REMOVAL

This task covers: Removal (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Forward Support (Work Aid)
Aft Support (Work Aid)

Personnel Required:
67S Scout Helicopter Repairer (4)

Equipment Condition:
Helicopter Safed (Task 1-6-7)
AN/ALQ-144 IR Jammer Mount Removed (Task 2-3-13)
Aft Fairing Assembly Removed (Task 2-2-55)
Aft Fairing Extension Removed (Task 2-2-56)
HF Antenna Removed (TM 11-1520-248-23)

NOTE

Remove components and structural items only to the extent necessitated by maintenance requirements.

Pivotable Fin Removed (Task 2-3-22)
Tail Rotor Driveshaft Covers Removed (Task 2-3-11)
Tail Rotor Assembly Removed (Task 5-4-11)
Tail Rotor Gearbox Removed (Task 6-7-1)
Folding Horizontal Stabilizer Removed (Task 2-3-27)
Adapter/Bearing Hanger/Segmented Shaft (Typical) Removed (Task 6-6-9)

GO TO NEXT PAGE

2-3-2. TAILBOOM — REMOVAL (CONT)

1. Remove 27 screws (1) from tailboom access panel (2).

2. Remove tailboom access panel (2).

WARNING

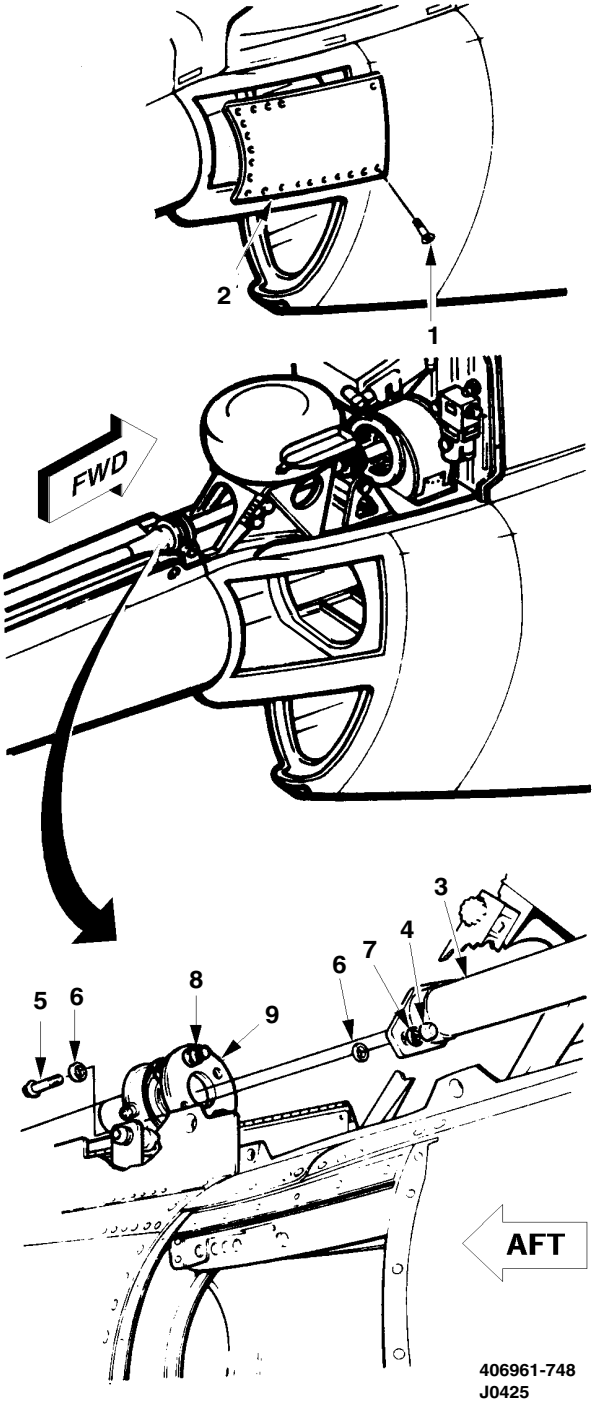
FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

All surfaces of the tail rotor driveshaft are critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

3. Disconnect tail rotor driveshaft as follows:

a. Disconnect tail rotor driveshaft (3) at coupling just aft of tailboom attachment point. Remove two nuts (4), two bolts (5), four washers (6), and two washers (7). Break torque on two remaining nuts (8) on disc pack (9).

b. Support shaft (3) with wooden block, or equivalent, to prevent warping disc pack.



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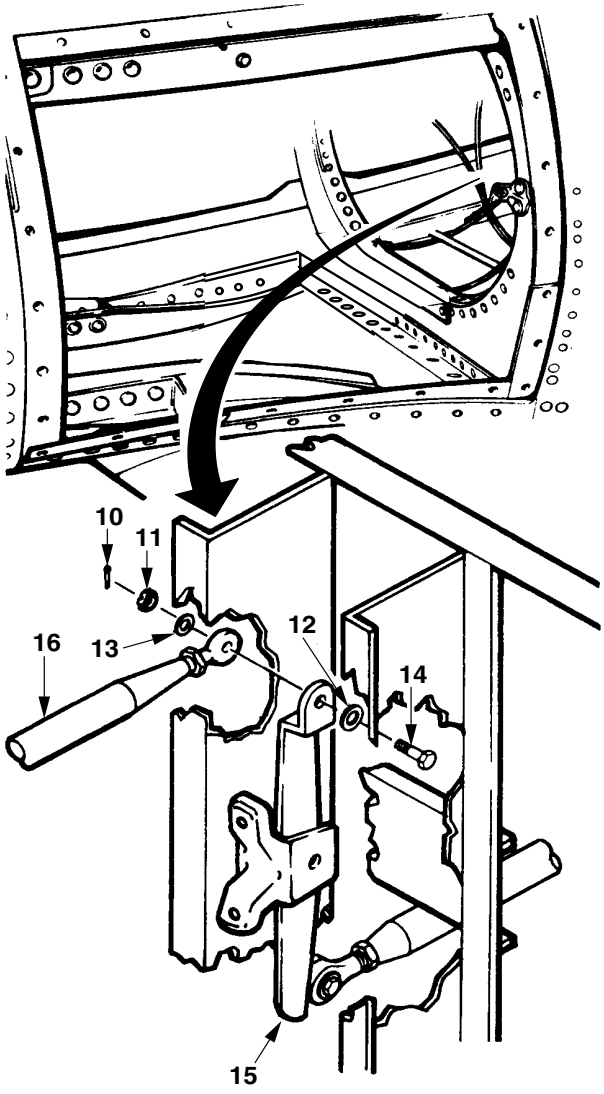
4. Disconnect directional control tube as follows:

a. Remove cotter pin (10), nut (11), washer (12), spacer (13), and bolt (14). Discard cotter pin.

NOTE

Bolt (14) will not come all the way out of walking beam (15).

b. Separate directional control tube (16) from walking beam (15).



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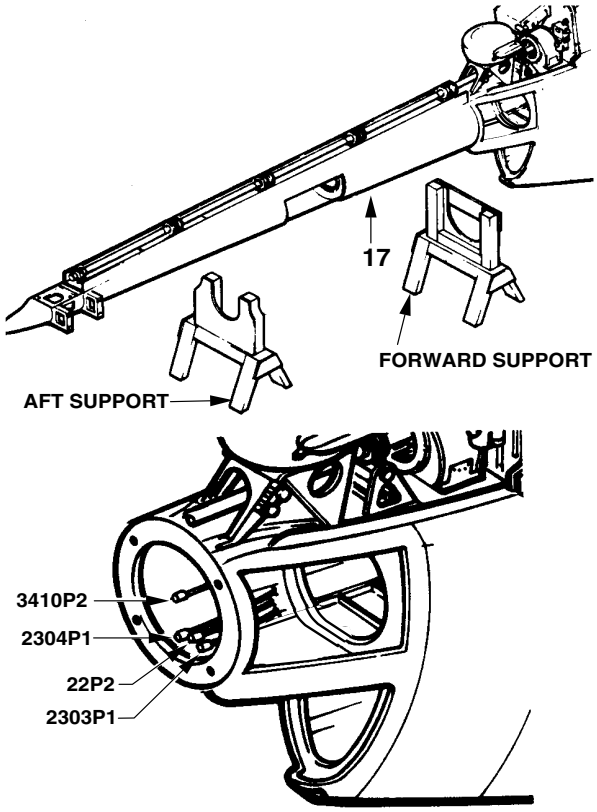
2-3-2. TAILBOOM — REMOVAL (CONT)

5. Provide tailboom supports as follows:

a. Place locally fabricated support under forward end of tailboom (17).

b. Place locally fabricated support under tailboom (17) aft of horizontal stabilizer location.

6. Disconnect electrical connectors (3410P2, 2304P1, 2303P1, and 22P2).



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2-3-2. TAILBOOM — REMOVAL (CONT)

7. Remove attaching parts as follows:

a. Station four persons to support tailboom.

b. Reach through tailboom access opening and remove two nuts (18) and four washers (19).

c. Remove nut (20) and two washers (21).

d. Remove nut (22) and two washers (23).

CAUTION

To prevent damage to bolts during removal, tailboom shall be moved gently from side to side and pull tailboom aft to separate from fuselage.

e. Drive out bolt (24) and remove washer (25).

f. Drive out bolt (26) and remove washer (27).

g. Drive out two bolts (28) and remove two washers (29).

WARNING

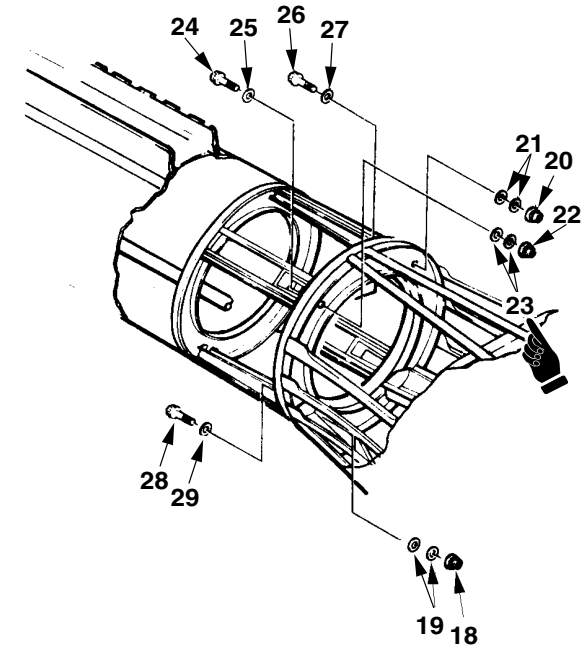
To prevent injury to personnel, forward support shall be kept bolted to tailboom.

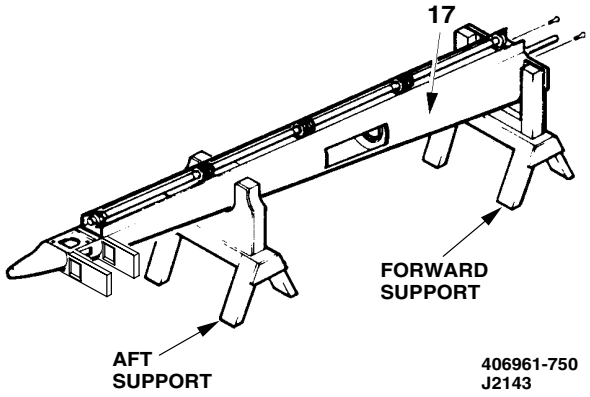
h. Place tailboom (17) on locally fabricated supports.

i. Bolt forward support to tailboom (17).

FOLLOW-ON MAINTENANCE

Remove directional control tailboom tube as necessary (Task 11-4-42).





END OF TASK

2-3-3. TAILBOOM AND AFT FUSELAGE ATTACH FITTINGS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
Forward Support (Work Aid)
Aft Support (Work Aid)
General Mechanic Tool Kit (B178)
Vernier Caliper (B14)
Extension Light (B92)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)
Corrosion Preventive Compound (D81)
Corrosion Preventive Compound (D84)

Personnel Required:
67S Scout Helicopter Repairer (3)
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 1-1500-344-23
TM 55-1500-345-23

GO TO NEXT PAGE

2-3-3. TAILBOOM AND AFT FUSELAGE ATTACH FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Use brush and drycleaning solvent (D199) to clean aft fuselage attach fittings and bearing hanger supports on tailboom.

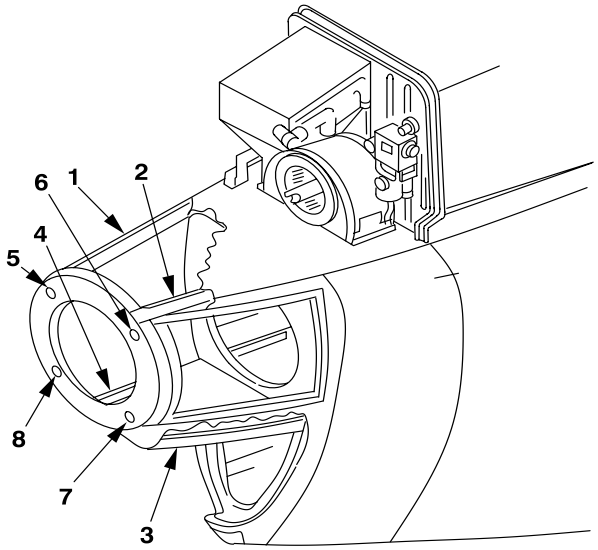
2. Wipe aft fuselage attach fittings and bearing hanger supports dry with wiping rags (D164).

INSPECT

NOTE

For all inspection procedures see appropriate illustration.

3. Negligible damage: Structural or corrosion damage, or loose or missing fasteners are classified as negligible damage.



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NOTE

- Negligible damage is classified as damage which may be repaired without prior AMCOM approval or instructions.
- Vernier caliper (B14) shall be used for all measurements in diameter.

a. Structural damage to forward tailboom bulkhead and aft fuselage bulkhead is limited to 10 percent of thickness of the part before and after repair, provided damage is at least **2.00 inches** from any attach point. Depth of repair is limited to 5 percent of part thickness if damage is within **2.00 inches** of any attach point.

b. Corrosion damage to forward tailboom bulkhead and aft fuselage bulkhead is limited to 10 percent of part thickness before repair and 15 percent after repair, provided damage is not within **2.00 inches** of any attach point. Maximum corrosion damage within **2.00 inches** of any attach point is 5 percent of part thickness before repair and 7.5 percent of part thickness after repair.

c. Only one repair may be made per area of damage. Damage area is limited to **0.250 inch** diameter circle within **2.00 inches** of any attach point, or **0.500 inch** diameter circle if not within **2.00 inches** of any attach point. Damage areas must be spaced no closer than **2.00 inches** apart from edge to edge.

d. Edge chamfer to remove damage shall be **0.010 inch** $\times$ 45 degrees.

e. Bore damage is limited to **0.004 inch** maximum for **1.400 inch** circumference.

f. Loose, damaged, or missing fasteners shall be replaced immediately. Refer to TM 1-1500-204-23.

4. Inspect aft fuselage attach fittings as follows:

a. Inspect four aft fuselage attach fittings (1, 2, 3, and 4) for loose rivets and cracks. No cracks allowed; loose rivets must be replaced. Refer to TM 1-1500-204-23.

b. Inspect aft fuselage attach fitting holes (5, 6, 7, and 8) for excessive wear and elongation. Maximum diameter allowed is **0.391 inch** as a result of elongation, wear, or rework. Refer to TM 1-1500-204-23.

GO TO NEXT PAGE

2-3-3. TAILBOOM AND AFT FUSELAGE ATTACH FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)

5. Inspect tailboom attach fittings as follows:

a. Have two persons support forward end of tailboom (9).

b. Remove forward support.

c. Inspect mounting holes (11, 12, 13, and 14) in tailboom attach fittings. Maximum diameter allowed is **0.391 inch** as a result of elongation, wear, or rework. Refer to TM 1-1500-204-23.

6. Inspect bulkheads, fittings and longerons as follows:

a. Inspect forward tailboom bulkhead (14) for cracks, corrosion, and distortion.

b. Inspect aft fuselage bulkhead (15) for cracks, corrosion, and distortion.

c. Inspect upper tailboom attach fittings for damage and corrosion. Refer to figure Upper Tailboom Attachment Fitting — Damage Limits.

d. Inspect tailboom attachment fitting center longerons for damage and corrosion. Refer to figure Longerons — Center and Upper Fuselage — Damage Limits.

e. Inspect longeron upper aft fuselage for damage and corrosion. Refer to figure Longerons — Center and Upper Fuselage — Damage Limits.

f. Apply corrosion preventive compound (D23) to readily accessible areas of components only after wash or flight in rain.

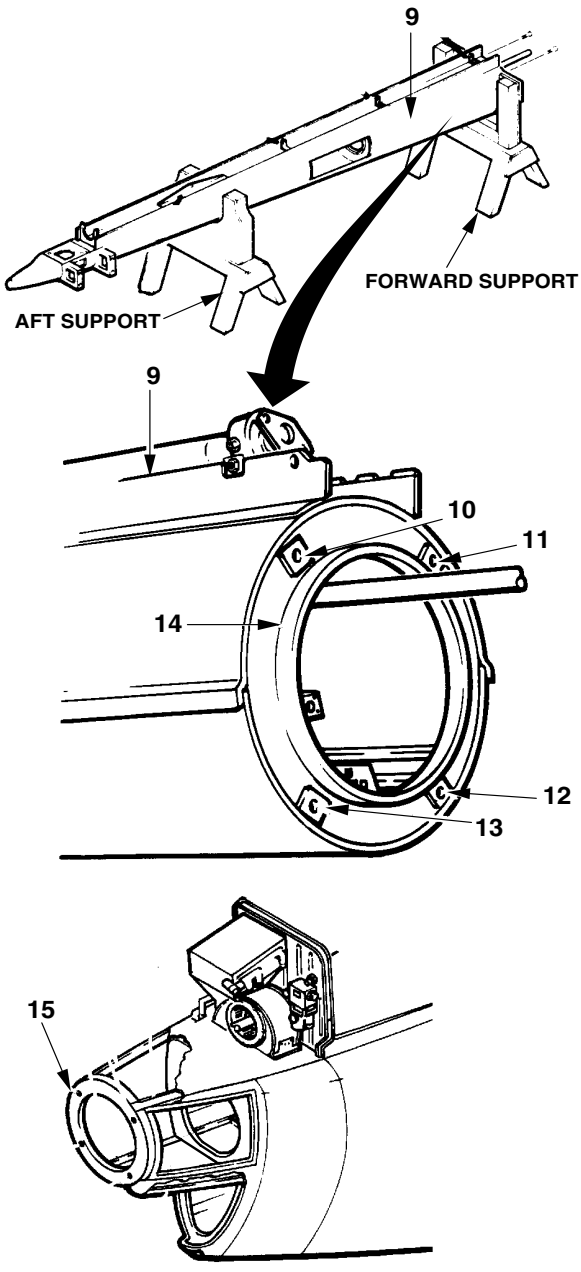
g. Refer to TM 1-1500-344-23 for complete corrosion control, repair methods, and application of corrosion preventive compounds (CPC) (D81), and adhesive (D84).

7. Support tailboom as follows:

a. Bolt forward support to tailboom (9).

b. Have two persons release tailboom (9).

8. Inspect tailboom attach bolts (Task 2-3-5).



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NOTE

Interior of tailboom as well as exterior shall be inspected. Refer to inspection procedures for exterior (Task 2-3-1).

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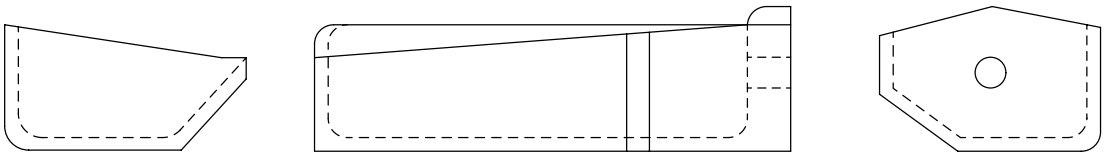
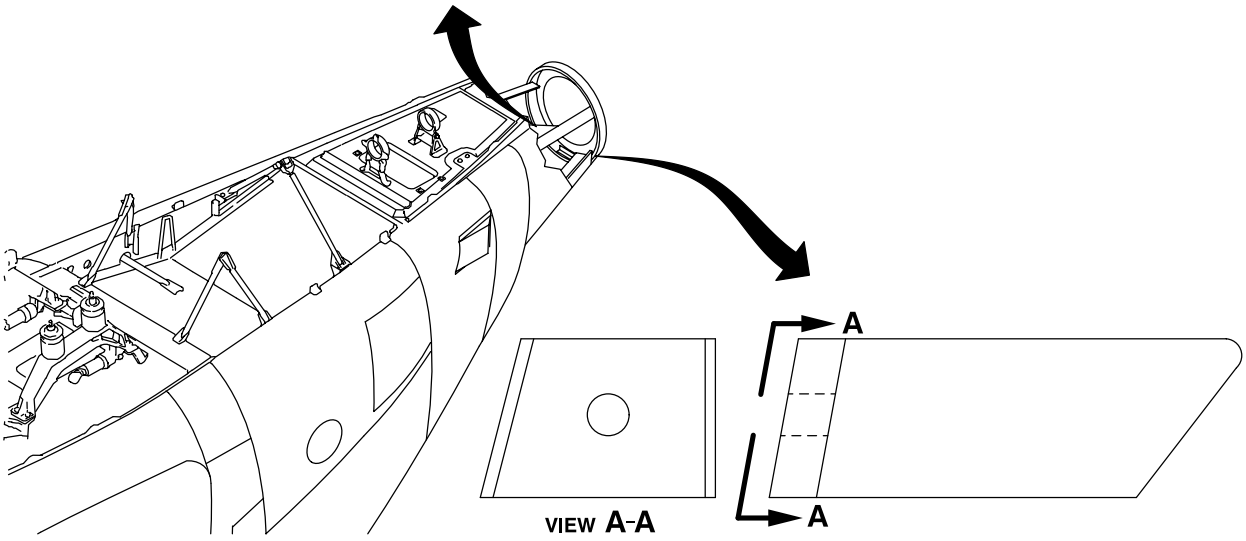
2-3-3. TAILBOOM AND AFT FUSELAGE ATTACH FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)



TAILBOOM ATTACHMENT FITTING - CENTER LONGERON
(206-031-327-106)



UPPER TAILBOOM ATTACHMENT FITTING
(206-021-329-314)

DAMAGE LOCATION SYMBOL

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL AND CORROSION	0.010 in. before and 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.250 sq. in.
NUMBER OF REPAIRS	Maximum one repair per part
EDGE CHAMFER	0.010 in. x 45°
MOUNT BOLT BORES	0.002 in. for 1/4 circumference

NOTE: No cracks are permitted.
All parts are corrosion prone.

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Upper Tailboom Attachment Fitting — Damage Limits

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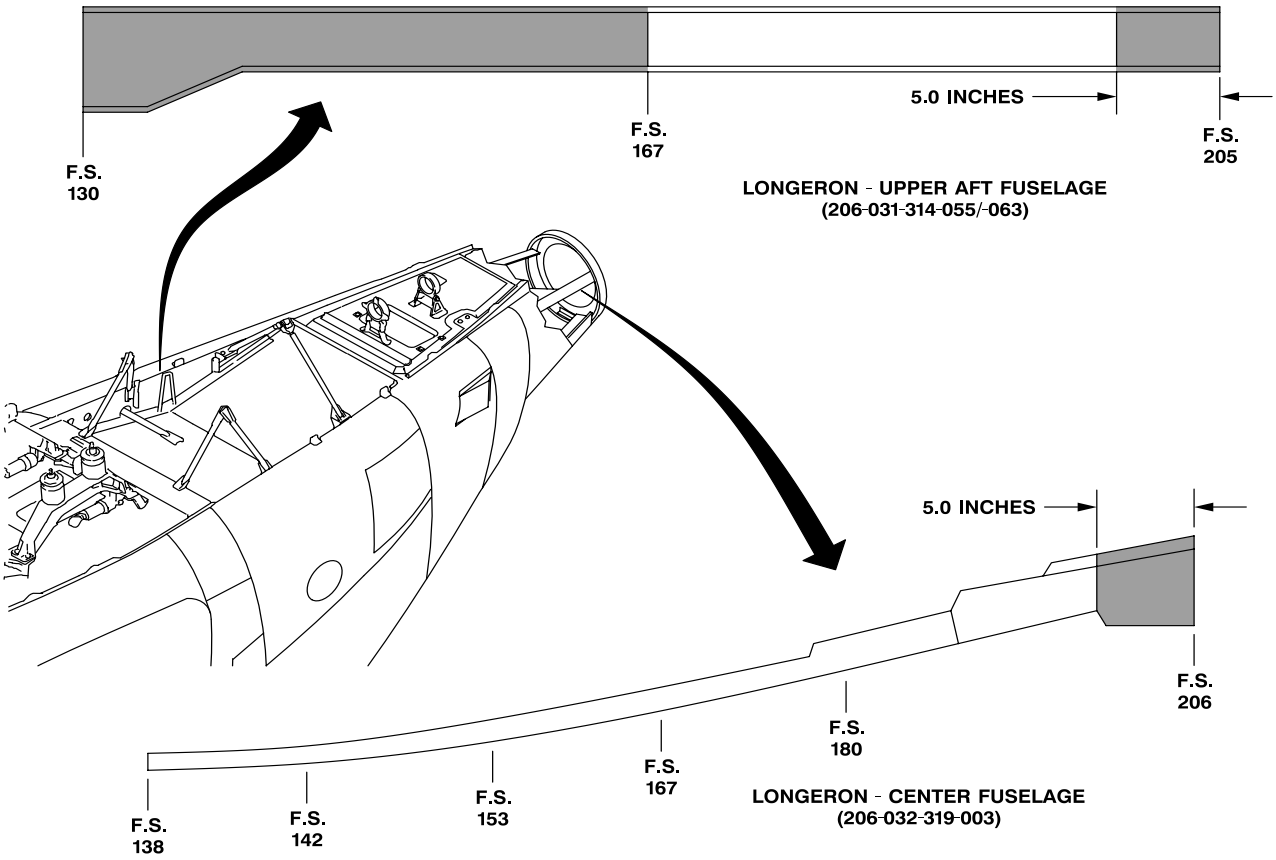
2-3-3. TAILBOOM AND AFT FUSELAGE ATTACH FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)



DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	None allowed None allowed	0.002 in. before repair 0.004 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR		0.500 sq. in.
NUMBER OF REPAIRS		One per part
EDGE CHAMFER		0.010 in. x 45°

NOTE: All parts are corrosion prone.

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Longerons — Center and Upper Fuselage — Damage Limits

GO TO NEXT PAGE

2-3-3. TAILBOOM AND AFT FUSELAGE ATTACH FITTINGS — CLEANING/INSPECTION/REPAIR (CONT)

9. Inspect tailboom for cracks, corrosion, loose rivets, and foreign material. Refer to TM 1-1500-204-23 and Task 2-3-1.

10. Inspect tail rotor gearbox support fitting as follows:

a. Inspect tail rotor gearbox support (Task 2-3-6).

b. Inspect area around tail rotor gearbox support for corrosion. Corrosion must be removed and area refinished. Refer to TM 1-1500-334-23, TM 55-1500-345-23, and Task 2-3-6.

11. Inspect bearing hanger supports as follows:

a. Inspect forward bearing hanger support (19) (Task 2-3-9).

b. Inspect midbearing hanger supports (19 and 20) (Task 2-3-9).

c. Inspect aft bearing hanger support (21) (Task 2-3-9).

REPAIR

NOTE

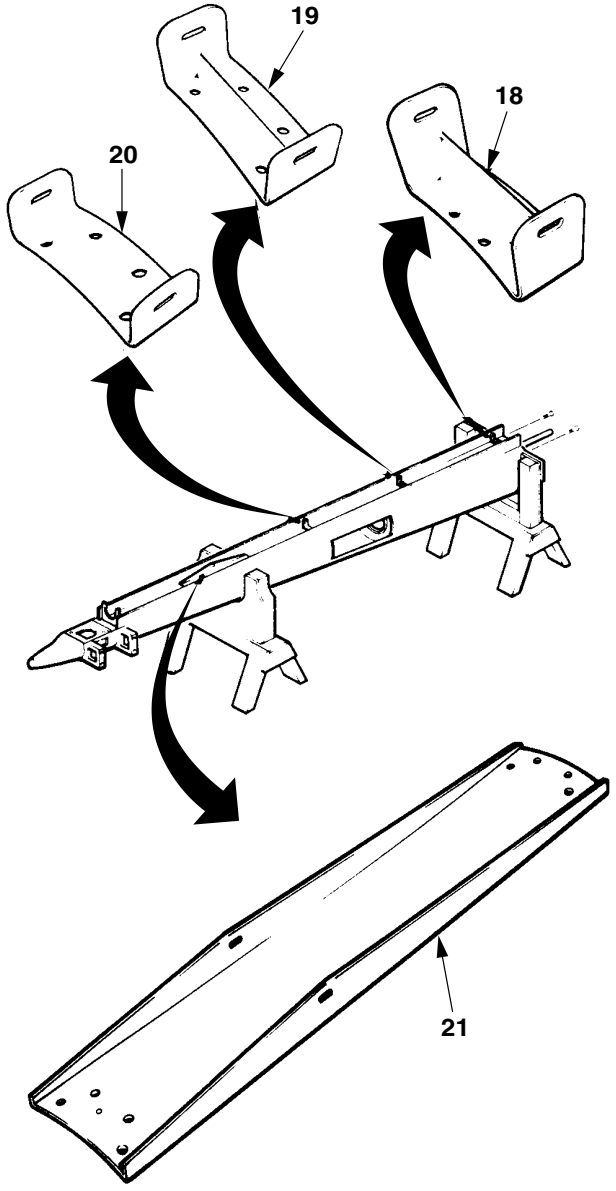
Damage which exceeds negligible damage limits requires AMCOM engineering inspection and approval before repair.

12. Replace loose, damaged, or missing fasteners (TM 1-1500-204-23).

13. Repair any cracks in forward tailboom bulkhead and aft fuselage bulkhead (TM 1-1500-204-23).

14. Repair forward bearing hanger support (18), mid-bearing hanger supports (19 and 20), and aft bearing hanger support (21) (Task 2-3-9).

INSPECT



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J2143

END OF TASK

2-3-4. TAILBOOM ATTACH BOLTS — CLEANING/INSPECTION

This task covers: Cleaning and Inspection (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-3-4. TAILBOOM ATTACH BOLTS — CLEANING/INSPECTION (CONT)

CLEAN

NOTE

Location and length of screws (1), (2), and (4) shall be identified to aid in reinstallation.

1. Loosen screws (1 and 2) on countermeasures set AN/ALQ-144 IR jammer mount (3).

2. Remove 27 screws (4) from tailboom access panel (5).

3. Remove tailboom access panel (5).

Drycleaning Solvent

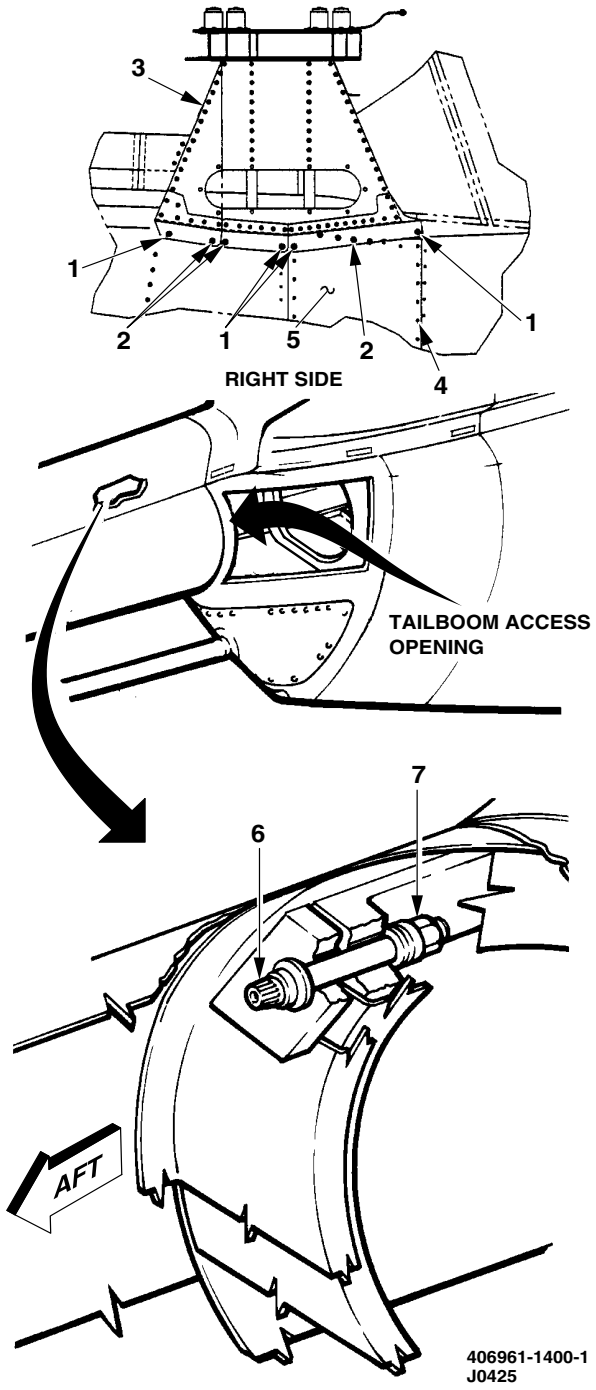
4. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of tailboom attach bolts (6) and nuts (7).

5. Dry tailboom attach bolts (6) and nuts (7) with wiping rags (D164).

INSPECT

6. Inspect four tailboom attach bolts (6) and nuts (7) for unbroken bead of sealing compound.

7. Inspect four tailboom attach bolts (6) and nuts (7) for other indications of looseness.



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2-3-4. TAILBOOM ATTACH BOLTS — CLEANING/INSPECTION (CONT)

NOTE

Sealing compound stripe shall extend from bolt shank to nut and from nut to airframe structure.

8. If bead of sealing compound is broken or if there is any other indication of looseness at any tailboom attach bolt (6), retorque (Task 2-3-8).

9. Inspect exposed threads of bolt protruding through nut for not less than one thread nor more than three threads.

INSPECT

10. Place tailboom access panel (5) in position.

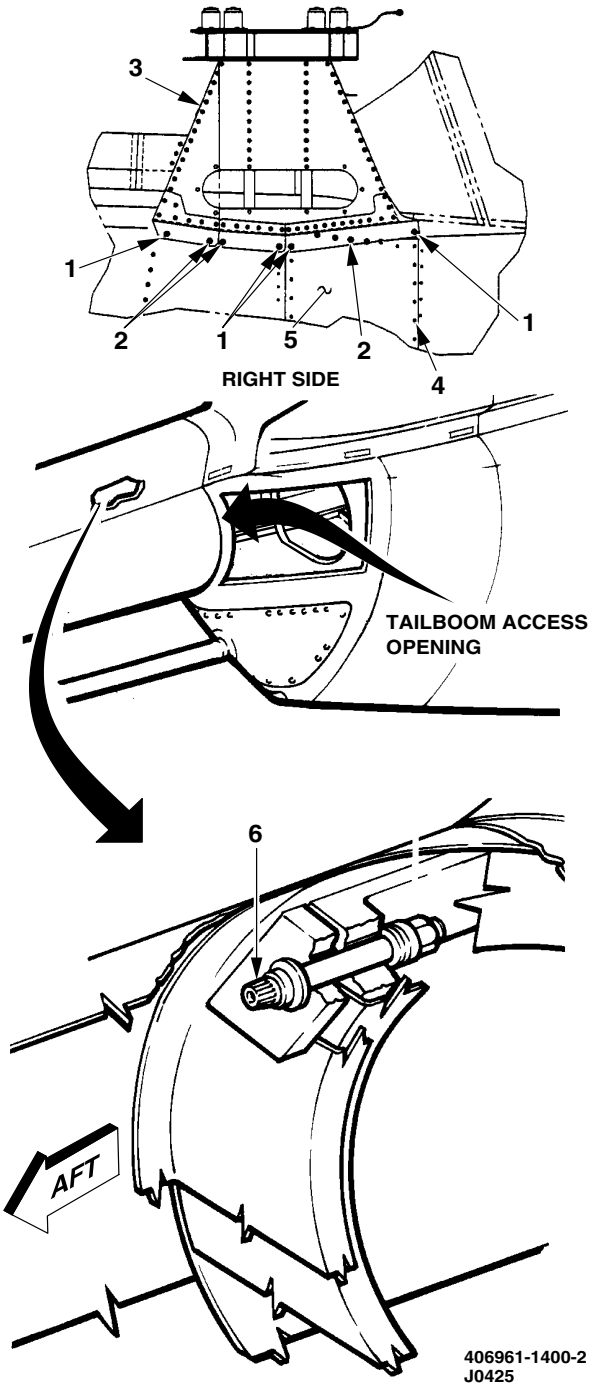
CAUTION

To prevent damage to aircraft structure, ensure that screws (1), (2), and (4) are used in correct location. They are not the same length.

11. Install 27 screws (4).

12. Tighten screws (1 and 2) on countermeasures set AN/ALQ-144 IR jammer mount (3).

INSPECT



END OF TASK

2-3-5. TAILBOOM ATTACH BOLTS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Crocus Cloth (D90)
Sandpaper (D175)
Wiping Rags (D164)
LHE Cadmium Solution (D129)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1500-344-23
TM 1-1520-266-23
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of tailboom attach bolts.

2. Dry tailboom attach bolts with wiping rags (D164).

INSPECT

3. Inspect tailboom attach bolts to limits shown in figure Tailboom Attach Bolts — Damage Limits. If crack in tailboom attach bolt is suspected perform magnetic particle inspection (TM 1-1520-266-23).

REPAIR

4. Smooth out scratches and corrosion damage using 400 grit sandpaper (D175) (TM 1-1500-344-23).

5. Blend repaired area into surrounding area with crocus cloth (D90).

6. Touch up finish of bolts with brush coat of LHE cadmium plate solution (D129) (TM 55-1500-345-23).

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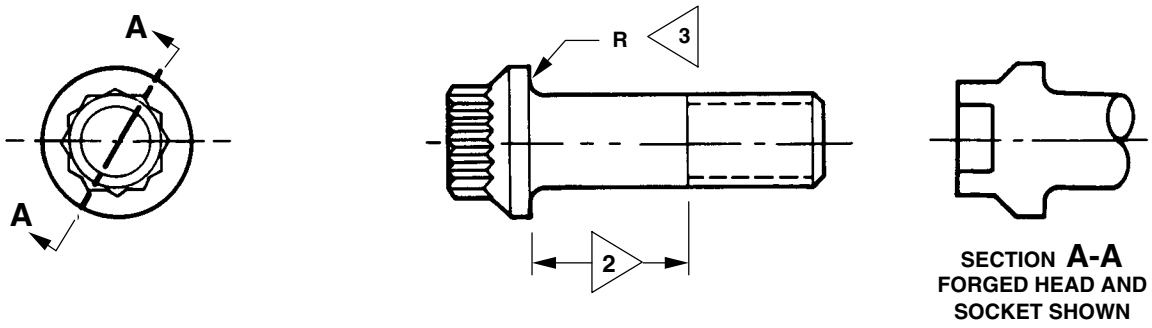
2-3-5. TAILBOOM ATTACH BOLTS — CLEANING/INSPECTION/REPAIR (CONT)



DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL AND CORROSION	0.005 in. before repair and 0.010 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.
NUMBER OF REPAIRS	Not critical
EDGE CHAMFER	0.03 In. x 45°
THREAD DAMAGE	
Depth	1/3 Of thread
Length	1/4 Of circumference
Number	One per three threads
EXTERNAL WRENCHING POINTS DAMAGE	
Fit: SECTION A-A	Ensure good fit of 1/2 in. socket (12-point) with head of bolt

NOTES: 1 No cracks are permitted.

2 Touch up cadmium plating on any repaired area of shank grip (D129).

3 Radius 0.47 to 0.57 inch after rework.

406961-79
J2143

Tailboom Attach Bolts — Damage Limits

END OF TASK

2-3-6. TAIL ROTOR GEARBOX SUPPORT ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Naphtha (D141)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 1-1520-266-23
TM 55-1500-345-23

Equipment Condition:
Taillight Support Removed (Task 2-3-31)
Tail Rotor Gearbox Removed (Task 6-7-1)
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-3-6. TAIL ROTOR GEARBOX SUPPORT ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

1. Remove 12 screws (1) and access panel (2).

Drycleaning Solvent

2. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of tail rotor gearbox support assembly.

3. Dry tail rotor gearbox support assembly with wiping rags (D164).

INSPECT

4. Inspect tail rotor gearbox support assembly to limits shown in figure Tail Rotor Gearbox Support Assembly — Damage Limits. If crack in tail rotor gearbox is suspected perform eddy current inspection (TM 1-1520-266-23).

5. Use mirror and flashlight to inspect interior of tailrotor gearbox support assembly for cracks and evidence of loose rivets.

6. Inspect access panel (2) for scratches, cracks, corrosion, and distortion. If crack in access door is suspected perform eddy current inspection (TM 1-1520-266-23).

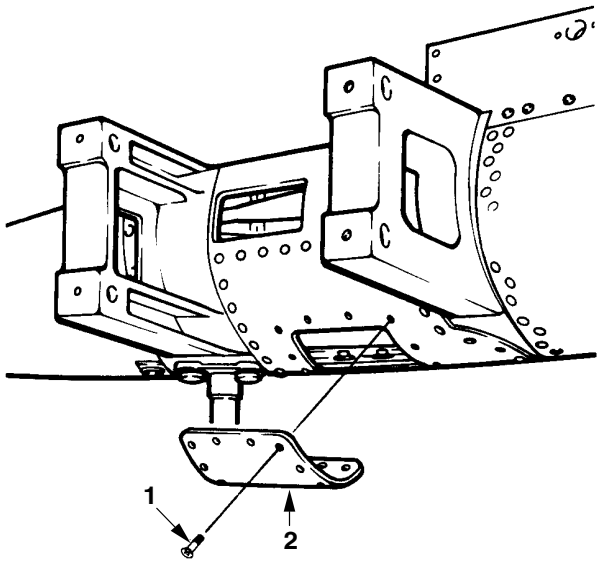
REPAIR

7. Repair loose rivets in accordance with TM 1-1500-204-23.

8. Repair access panel (2) in accordance with TM 1-1500-204-23.

9. Place access panel (2) in position. Install 12 screws (1).

10. Replace tailboom if tail rotor gearbox support assembly does not meet inspection requirements (Task 2-3-2 and Task 2-3-8).



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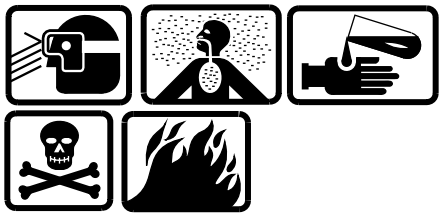
Sanding Operations

11. Smooth out scratches and corrosion damage to support assembly with 400 grit sandpaper (D175).



Naphtha/Naphthalene, TT-N-97

12. Use wiping rag (D164) and naphtha (D141) to remove sanding residue from surfaces.

Epoxy Primer Coating

13. Apply epoxy primer coating (D98) to refinished surfaces of support assembly in accordance with TM 55-1500-345-23.

FOLLOW-ON MAINTENANCE

Send tailboom that does not meet inspection requirements to depot for disposition.

Install tail rotor gearbox (Task 6-7-1).

Install taillight support (Task 2-3-31).

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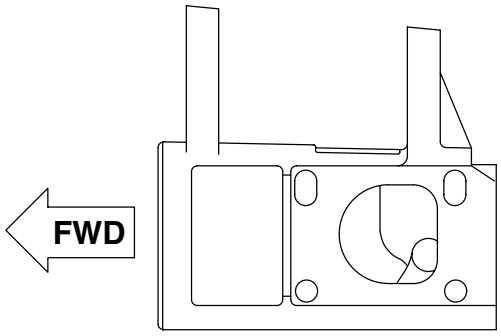
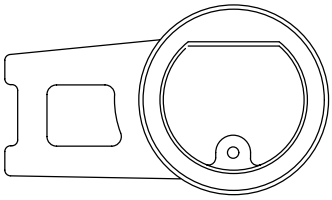
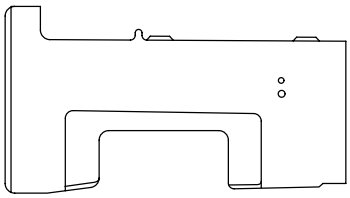


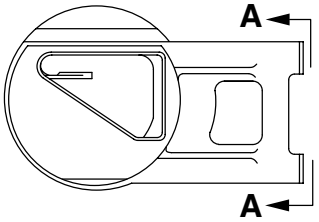
VIEW LOOKING DOWN



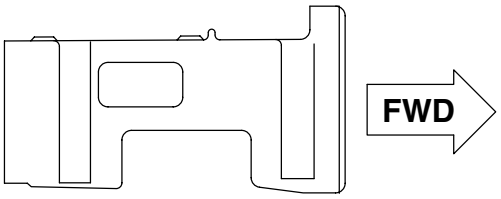
VIEW LOOKING AFT



VIEW FROM LEFT SIDE



VIEW LOOKING FORWARD



VIEW FROM RIGHT SIDE

VIEW **A-A**

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL AND CORROSION	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	1.00 Sq. in.
NUMBER OF REPAIRS	Not critical
EDGE CHAMFER	0.04 in. x 45°
MOUNT BOLT BORES	0.002 in. for 1/4 of circumference
PIVOT BORES	0.002 in. for 1/4 of circumference

NOTE: No cracks are permitted.

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Tail Rotor Gearbox Support Assembly — Damage Limits

END OF TASK

2-3-7. TAILBOOM FAIRLEADS — INSPECTION/REMOVAL/INSTALLATION

This task covers: Inspection, Removal, and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Folding Horizontal Stabilizer Removed (Task 2-3-27)
Taillight Support Removed (Task 2-3-31)
Tail Rotor Gearbox Support Access Panel Removed (Task 2-3-6)

GO TO NEXT PAGE

2-3-7. TAILBOOM FAIRLEADS — INSPECTION/REMOVAL/INSTALLATION (CONT)

INSPECT

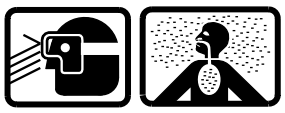
1. Inspect seven fairleads (1) for loose or missing rivets, cracks, and elongation.

2. Inspect ID (2) of fairlead (1) for wear and elongation. If ID is worn to metal of bulkhead or support, replace fairlead (1).

REPAIR

(None Authorized)

REMOVE



Compressed Air

Drilling Operations

NOTE

If defective fairlead is not accessible through an opening or door, request assistance from higher level of maintenance.

1. Drill out six rivets (3) and remove support (4) from tailboom (5).

2. Drill out 16 rivets (6) and remove four screws (7) in bearing hanger support (8) to remove bearing hanger support (8).

3. Drill out four rivets (6) and remove fairleads (1) (typical) in accordance with TM 1-1500-204-23.

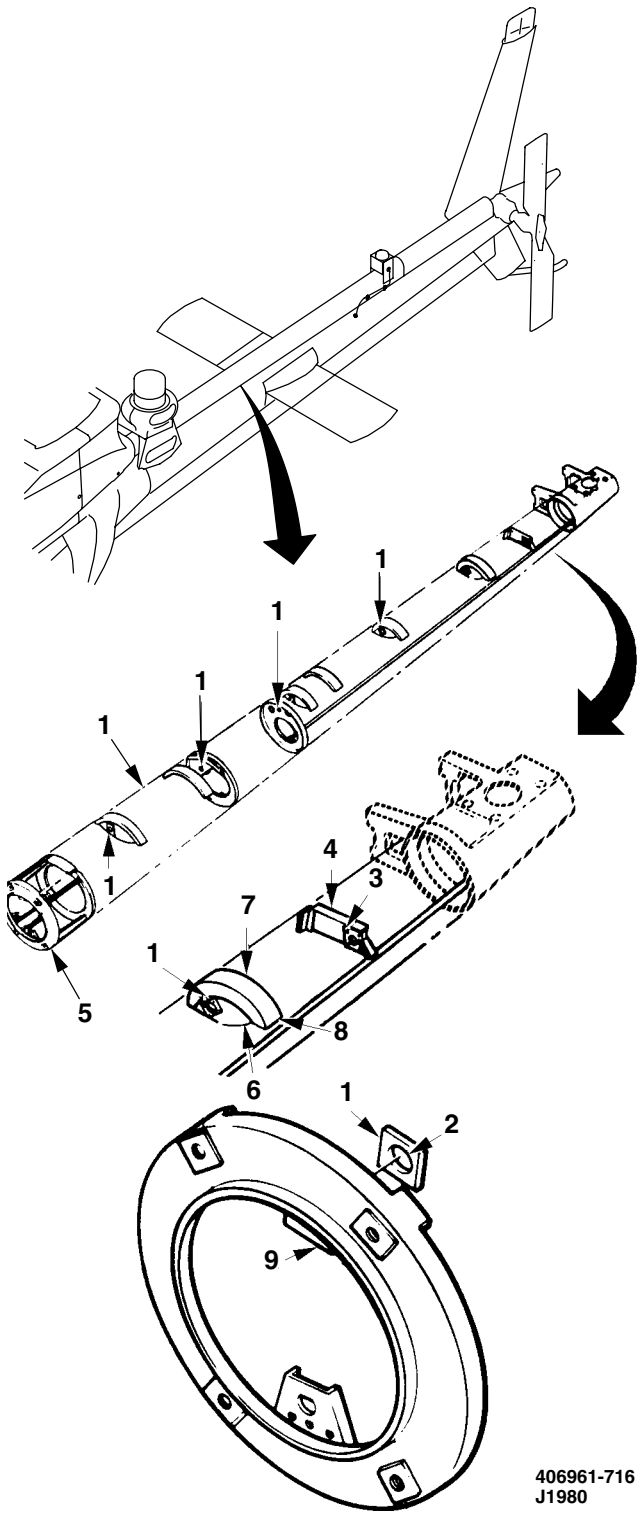
INSTALL

4. Place fairlead (1) on tailboom to attach points (9) and secure with four rivets (6) in accordance with TM 1-1500-204-23.

5. Install bearing hanger support (8) with 16 rivets (6) and four screws (7) through bearing hanger support (8).

6. Install support (4) with six rivets (3).

INSPECT



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2-3-7. TAILBOOM FAIRLEADS — INSPECTION/REMOVAL/INSTALLATION (CONT)

FOLLOW-ON MAINTENANCE

Install tail rotor gearbox support access panel (Task 2-3-6).

Install taillight support (Task 2-3-31).

Install folding horizontal stabilizer (Task 2-3-27).

END OF TASK

2-3-8. TAILBOOM — INSTALLATION

This task covers: Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B236)
Torque Wrench (B240)
Torque Wrench (B242)
Forward Support (Work Aid)
Aft Support (Work Aid)
Plastic Scraper (B123)

Material:
Zinc Chromate Putty (D162)
Sealing Compound (D182)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (4)

References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

INSTALL

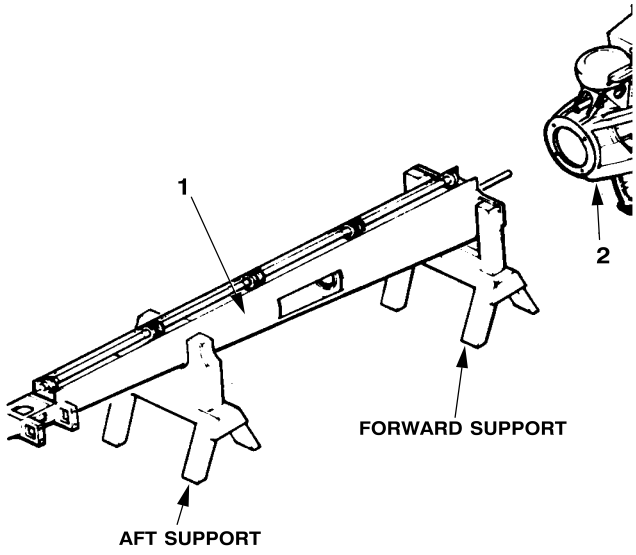
1. Have four persons move tailboom (1) and locally fabricated supports near aft end of fuselage (2).

2. Have two persons support forward end of tailboom (1).

3. Remove forward support.

4. Install attaching parts as follows:

   a. Have three persons support tailboom (1).



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WARNING

To prevent failure of repair and consequent injury to personnel, only countersunk washers shall be installed under bolt heads and countersink in washers shall be next to bolt head.

CAUTION

To prevent damage to helicopter, proper length bolt (3) shall be installed in right side top hole, bolt (4) in left side top hole and two bolts (5) in bottom holes.

NOTE

Bolts may fit tight. Nut and washer shall be used to pull bolts up through bolt holes into position.

b. Align tailboom attachment holes with aft fuselage attachment holes.

NOTE

Washers shall be installed between fitting and nut so that no less than one thread and not more than three threads of bolt show.

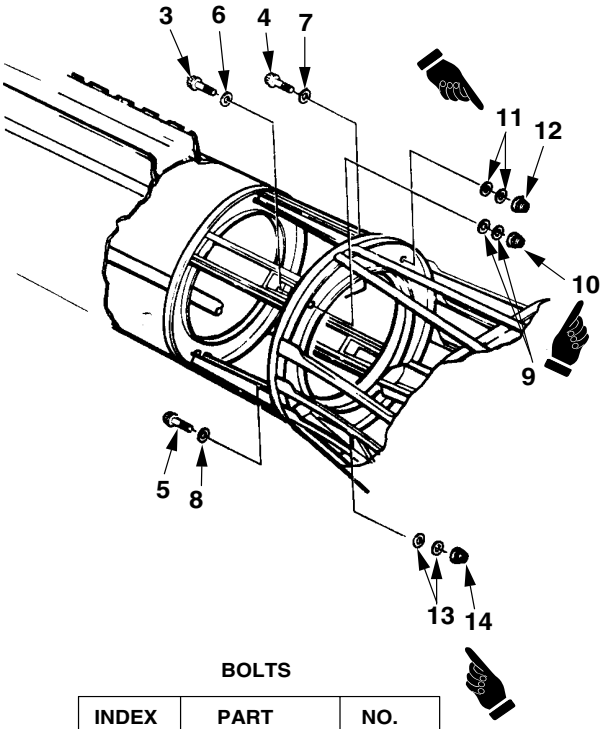
c. Install bolts (3 and 4) and countersunk washers (6 and 7) and two bolts (5) and countersunk washers (8) with bolt heads aft in proper position in tailboom attachment holes.

d. Install two washers (9) with nut (10), two washers (11) with nut (12), and four washers (13) with two nuts (14).

e. Torque nuts (10, 12, and 14) **375 TO 415 INCH-POUNDS**.

NOTE

A bead of sealing compound (D182) shall not be applied to bolts (3, 4 and 5) and nuts (10, 12 and 14) until after maintenance test flight (MTF).



BOLTS

INDEX NO.	PART NUMBER	NO. REQD
3	NAS626-23	1
4	NAS626-26	1
5	NAS626-20	2

406961-73
J2143

GO TO NEXT PAGE

2-3-8. TAILBOOM — INSTALLATION (CONT)

5. Install directional control tube as follows.

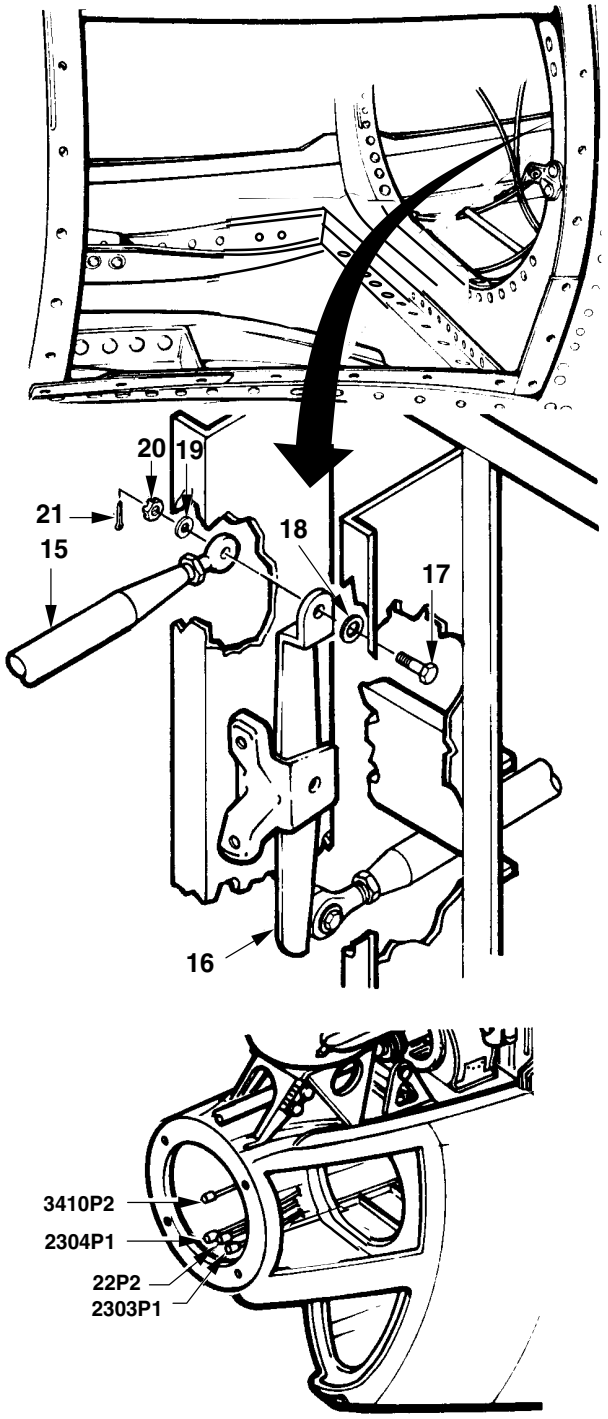
a. Place directional control tube (15) in position against walking beam (16).

NOTE

Bolt (17) shall be kept in walking beam (16).

b. Push bolt (17) with spacer (18) part way through directional control tube (15), rod end against walking beam (16), and push bolt rest of the way through. Install washer (19) under nut (20). Torque nut (20) **30 TO 40 INCH-POUNDS** and install cotter pin (21) through nut (20).

6. Connect four electrical connectors (3410P2, 2304P1, 2303P1, and 22P2).



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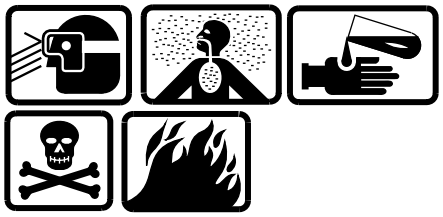


Zinc Chromate Putty

7. Apply zinc chromate putty (D162) to access panel supports (22).

8. Install tailboom access panel (23) with 27 screws (24).

9. Remove excess putty with plastic scraper (B123).

INSPECT

FOLLOW-ON MAINTENANCE

Install fin assembly as necessary (Task 2-3-22).

Install horizontal stabilizer as necessary (Task 2-3-27).

Install coupling disc pack (Task 6-6-6).

Align tail rotor bearing hanger as necessary (Task 6-6-17).

Align tail rotor driveshaft (Task 6-6-18)

Install aft fairing assembly (Task 2-2-55).

Install aft fairing extension (Task 2-2-56).

Install AN/ALQ-144 Mount (Task 2-3-13).

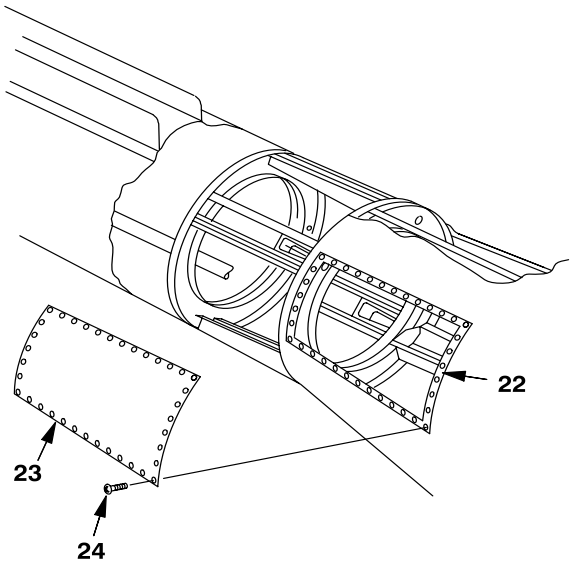
Install HF antenna in accordance with TM 11-1520-248-23.

Install tail rotor assembly and tail rotor gearbox as necessary (Task 5-4-16 and Task 6-7-1).

Install tail rotor driveshaft cover as necessary (Task 2-3-11).

Apply a bead of sealing compound (D182) to bolts (3, 4, and 5) and nuts (10, 12, and 14).

Perform retorques (Chapter 1, Section IX).



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END OF TASK

2-3-9. TAILBOOM BEARING HANGER SUPPORTS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Wiping Rags (D164)
Drycleaning Solvent (D199)
Rubber Gloves (D111)
Sandpaper (D175)
Epoxy Primer Coating (D98)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of bearing hanger supports.

2. Dry bearing hanger supports with wiping rags (D164).

INSPECT

3. Inspect bearing hanger supports for damage and corrosion to limits shown. See appropriate illustration.

REPAIR

Sanding Operations

4. Polish out scratches, nicks, dents, and corrosion with 400 grit sandpaper (D175).

5. Touch up repaired areas with epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

6. Replace nonreparable bearing hanger supports.

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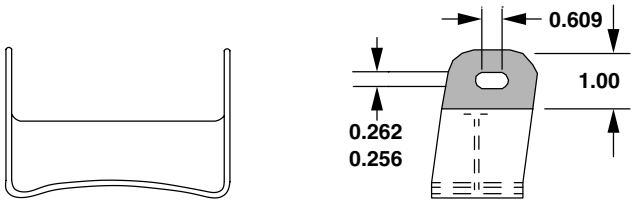


FORWARD BEARING HANGER SUPPORT

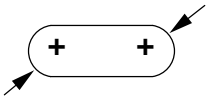
NOTE:

1. All dimensions are in inches unless otherwise specified.

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	0.010 in. before repair 0.020 in. after repair	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.250 Sq. in.	0.250 Sq. in.
NUMBER OF REPAIRS	One per lug	Two per part
EDGE CHAMFER	0.040 in. x 45°	0.040 in. x 45°

Slot elongation not to exceed 0.002 in. x 1/4 of circumference in full radius areas



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Forward Bearing Hanger Support — Damage Limits

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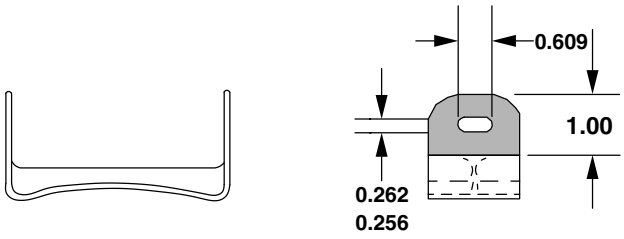


MIDDLE BEARING HANGER SUPPORT

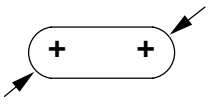
NOTE:

1. All dimensions are in inches unless otherwise specified.

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	0.010 in. before repair 0.020 in. after repair	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.250 Sq. in.	0.250 Sq. in.
NUMBER OF REPAIRS	One per lug	Two per part
EDGE CHAMFER	0.040 in. x 45°	0.040 in. x 45°

Slot elongation not to exceed 0.002 in. x 1/4 of circumference in full radius areas



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Middle Bearing Hanger Support — Damage Limits (Sheet 1 of 2)

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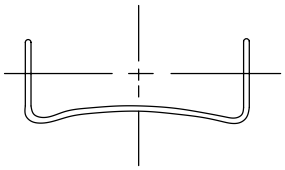
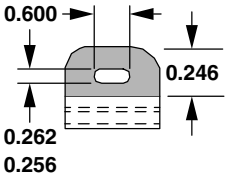




MIDDLE BEARING HANGER SUPPORT

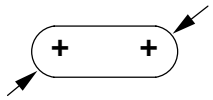
NOTE:

1. **All dimensions are in inches unless otherwise specified.**

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	0.010 in. before repair 0.020 in. after repair	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.	0.250 Sq. in.
NUMBER OF REPAIRS	One per lug	Two per part
EDGE CHAMFER	0.040 in. x 45°	0.040 in. x 45°

Slot elongation not to exceed 0.002 in. x 1/4 of circumference in full radius areas



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Middle Bearing Hanger Support — Damage Limits (Sheet 2 of 2)

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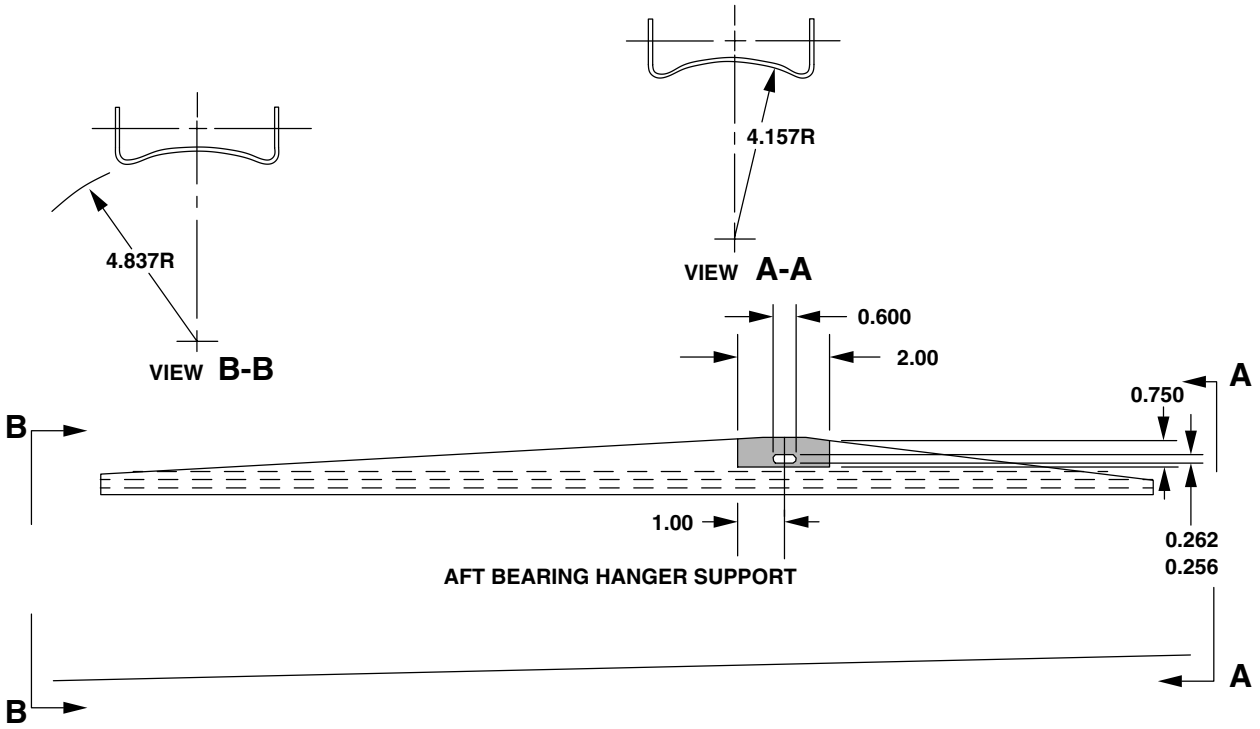
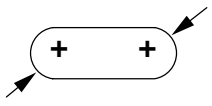


NOTE:

1. All dimensions are in inches unless otherwise specified.

	DAMAGE LOCATION SYMBOLS	
TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	0.010 in. before repair 0.020 in. after repair	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.	0.250 Sq. in.
NUMBER OF REPAIRS	One per lug	Two per part
EDGE CHAMFER	0.040 in. x 45°	0.040 in. x 45°

Slot elongation not to exceed 0.002 in. x 1/4 of circumference in full radius areas



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Aft Bearing Hanger Support — Damage Limits

END OF TASK

2-3-10. TAILBOOM BEARING HANGER SUPPORTS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Tail Rotor Driveshaft Removed (Task 6-6-8)

GO TO NEXT PAGE

2-3-10. TAILBOOM BEARING HANGER SUPPORTS — REMOVAL/INSTALLATION (CONT)

REMOVE

NOTE

Removal and installation procedures are similar for all bearing hanger supports on tailboom.

1. Remove bearing hanger support (2).

   a. Remove four screws (1).

NOTE

If shim under support is loose, identify for reinstallation.

   b. Remove support (2) from tailboom.

2. Remove bearing hanger supports (3 and 4).

   a. Remove eight screws (1) from supports (3 and 4).

NOTE

If shims under supports are loose, they shall be identified for reinstallation.

   b. Remove supports (3 and 4) from tailboom.

3. Remove bearing hanger support (5).

   a. Remove eight screws (1) from support (5).

NOTE

If shims under support are loose, they shall be identified for reinstallation.

   b. Remove support (5) from tailboom.

INSTALL

NOTE

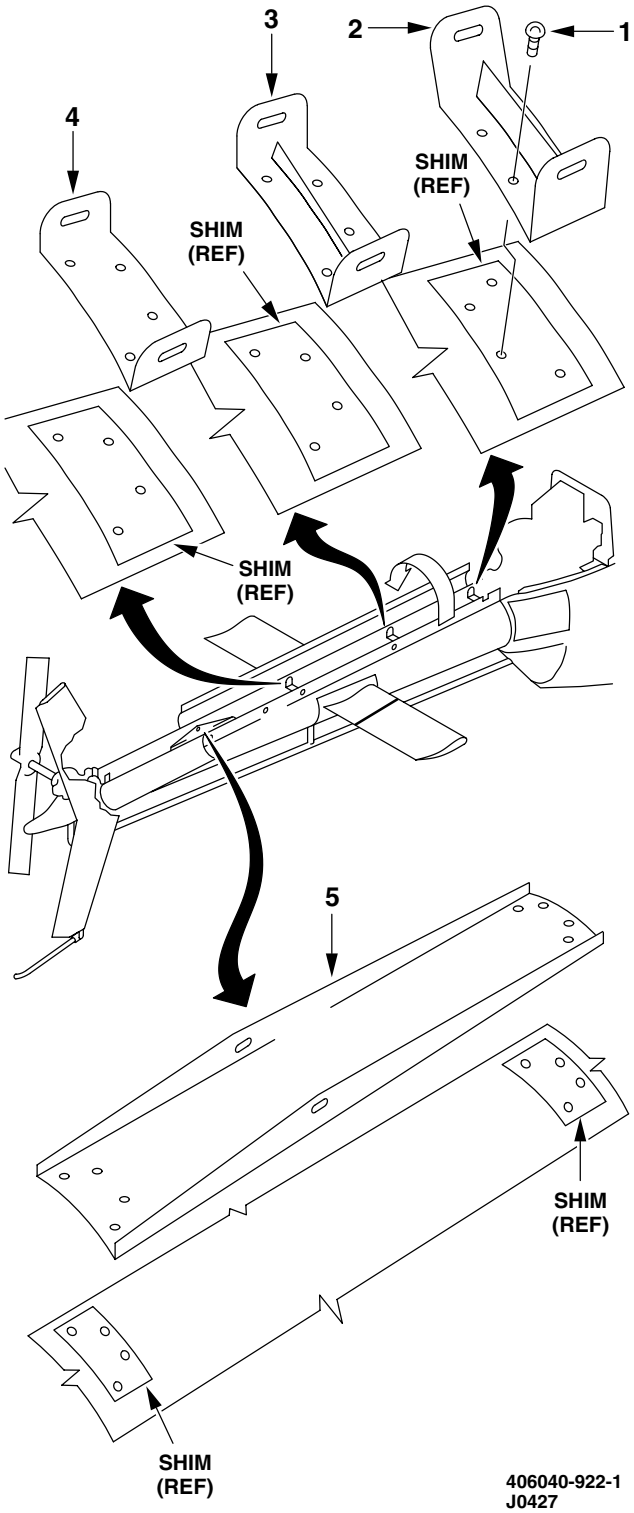
It is permissible to add washers (six maximum) under screwhead to obtain desired torque.

4. Install bearing hanger support (2).

   a. Place shim (if removed) in proper location for support (2).

   b. Place support (2) on shim in proper location.

   c. Install four screws (1).



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2-3-10. TAILBOOM BEARING HANGER SUPPORTS — REMOVAL/INSTALLATION (CONT)

5. Install bearing hanger supports (3 and 4).

a. Place shim(s) (if removed) in proper location for supports (3 and 4).

b. Place supports (3 and 4) on shims in proper location.

c. Install eight screws (1).

6. Install bearing hanger support (5).

a. Place shims (if removed) in proper location for support (5).

b. Place support (5) on shim(s) in proper location.

c. Install eight screws (1).

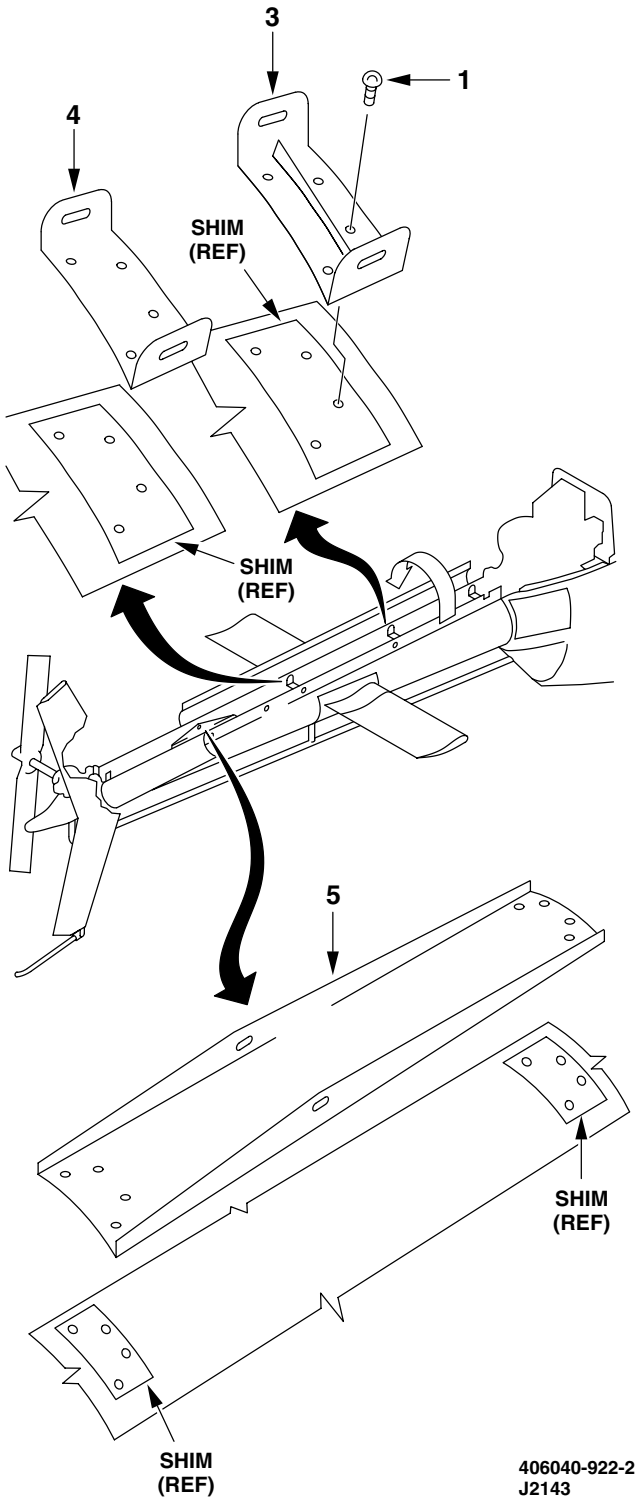
INSPECT

FOLLOW-ON MAINTENANCE

Install tail rotor driveshaft (Task 6-6-8).

Align tail rotor bearing hanger (Task 6-6-17).

Align tail rotor driveshaft (Task 6-6-18).



END OF TASK

2-3-11. TAIL ROTOR DRIVESHAFT COVERS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

REMOVE

1. Open tail rotor driveshaft aft cover (1):

   a. Loosen three Dzus fasteners (2).

   b. Swing tail rotor driveshaft cover (1) to the right to full open.

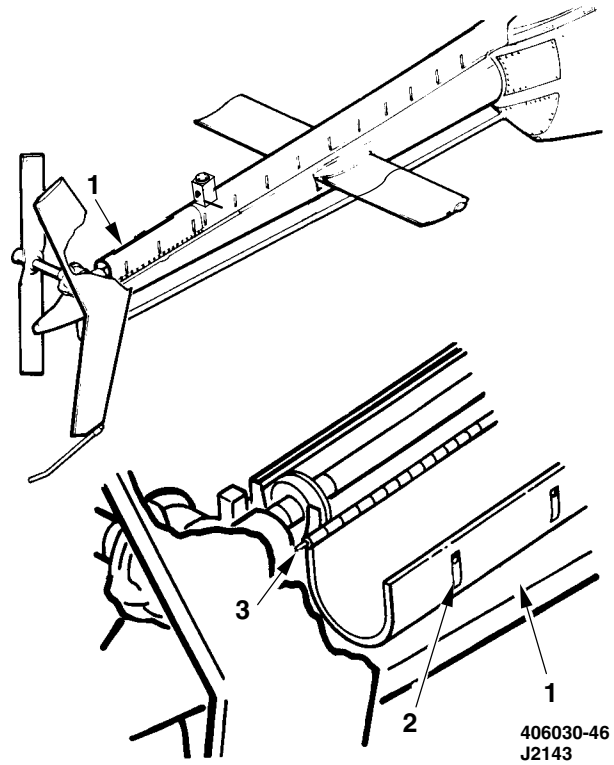
2. Remove hinge pin (3):

   a. Use a drift pin and hammer to drive hinge pin (3) out far enough to grip with pliers.

CAUTION

Care shall be exercised during hinge pin removal. If hinge pin and/or tail rotor driveshaft cover is bent, reinstallation will be difficult.

   b. Use vise grips to remove hinge pin (3) while slowly rotating cover.



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2-3-11. TAIL ROTOR DRIVESHAFT COVERS — REMOVAL/INSTALLATION (CONT)

3. Open tail rotor driveshaft forward cover (4):

a. Loosen 10 Dzus fasteners (2).

b. Swing tail rotor driveshaft cover (4) left to full open position.

4. Remove hinge pin (5):

a. Use a drift pin and hammer to drive hinge pin (6) into hinge pin (5) far enough to grip hinge pin (5) with pliers.

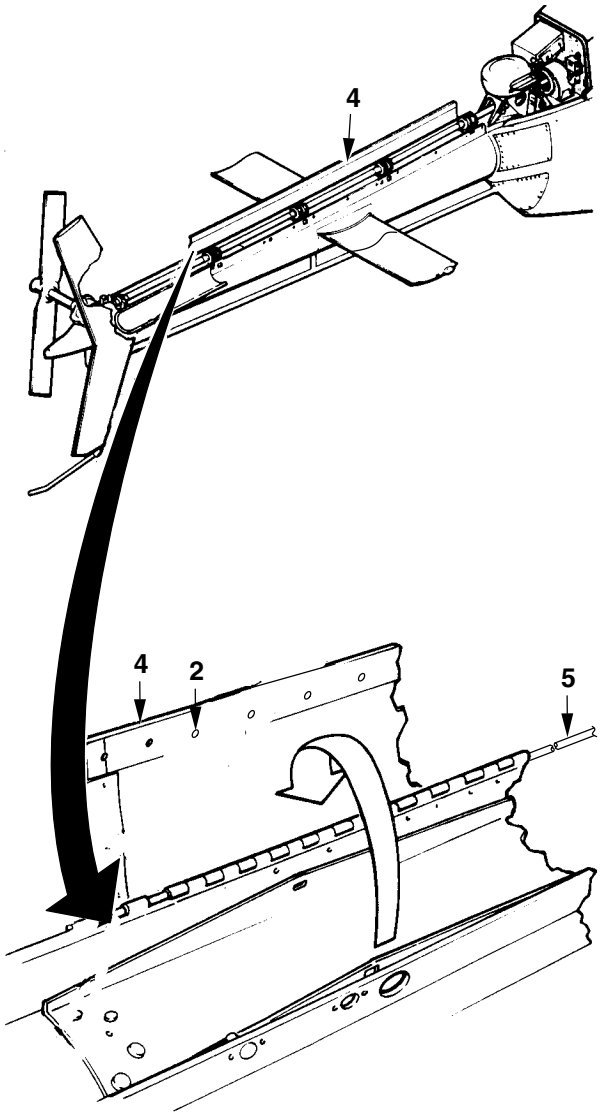
b. Raise tail rotor driveshaft cover (4) high enough to allow clearance for hinge pin (5).

CAUTION

Care shall be exercised during hinge pin removal. If hinge pin and/or tail rotor driveshaft cover is bent, reinstallation will be difficult.

c. Use vise grips to remove hinge pin (5) while slowly rotating cover.

5. Remove tail rotor driveshaft cover (4).



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2-3-11. TAIL ROTOR DRIVESHAFT COVERS — REMOVAL/INSTALLATION (CONT)

INSTALL

6. Place tail rotor driveshaft forward cover (4) in position on tailboom.

7. Install hinge pins (5 and 6).

NOTE

Each hinge pin should be tapped lightly on end. Both halves of hinge can be kept in line by hands.

8. Using a No. 55 drill, drill hole (View A) in forward and aft ends of hinge half (7). Retain hinge pins (5 and 6) with lockwire (D132).

9. Close tail rotor driveshaft cover (4).

a. Swing tail rotor driveshaft cover (4) right to fully closed position.

b. Fasten 10 fasteners (2).

10. Place tail rotor driveshaft aft cover (1) in position on tailboom.

11. Install hinge pin (3).

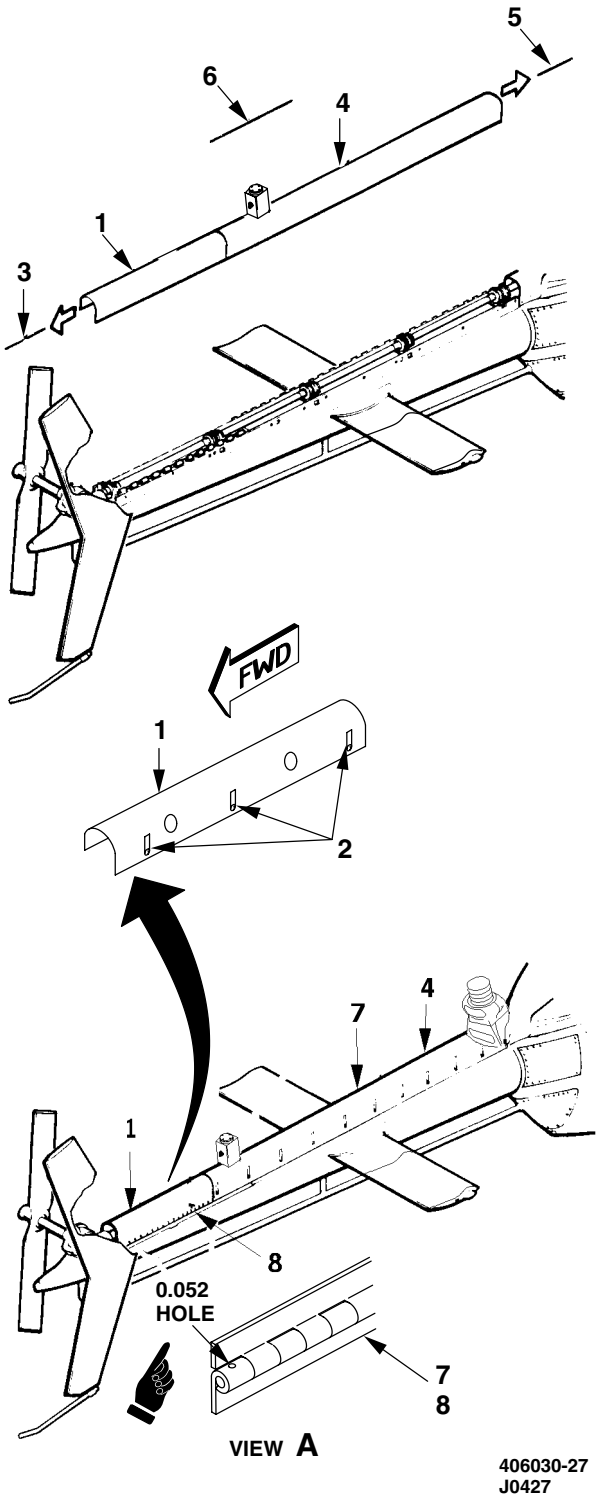
NOTE

Hinge pin should be tapped lightly on end. Both halves of hinge can be kept in line by hand.

12. Using a No. 55 drill, drill hole (View A) in forward and aft ends of hinge half (8). Retain hinge pin (3) with lockwire (D132).

13. Fasten three Dzus fasteners (2).

INSPECT



END OF TASK

2-3-12. TAIL ROTOR DRIVESHAFT COVERS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)

Material:
Sandpaper (D175)
Epoxy Primer Coating (D98)
Rubber Gloves (D111)
Drycleaning Solvent (D199)
Acetone(D2)
Wiping Rags (D164)
Acrylic Lacquer (D127)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 1-1520-266-23
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter Washed (Task 1-4-11)

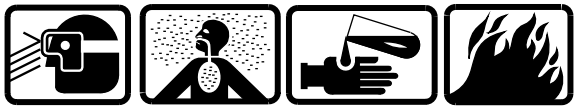
GO TO NEXT PAGE

2-3-12. TAIL ROTOR DRIVESHAFT COVERS — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

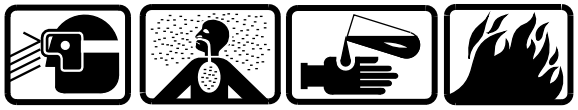
WARNING

To prevent injury to personnel, no one shall operate tail rotor controls from inside helicopter during cover maintenance.



Acetone

1. Use wiping rags (D164) and acetone (D2) to clean primed surfaces on inside of tail rotor driveshaft covers (1 and 2).



Drycleaning Solvent

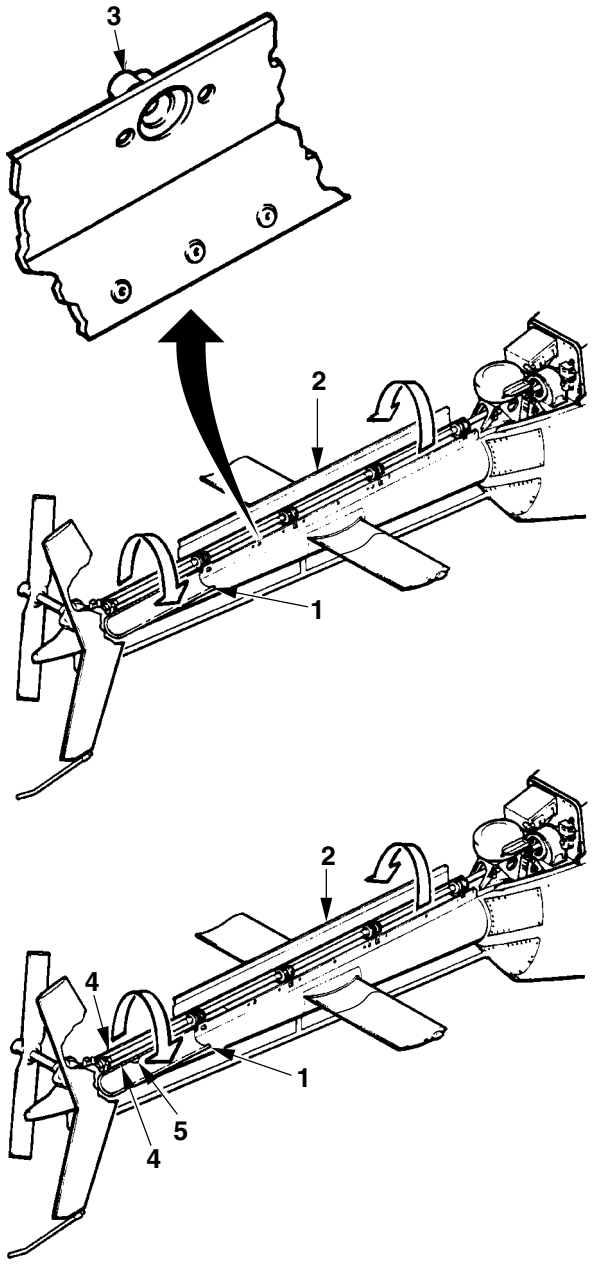
2. Use wiping rags (D164) and drycleaning solvent (D199) to clean unprimed surfaces of tail rotor driveshaft covers (1 and 2) and 13 Dzus fastener receptacles (3).

INSPECT

3. Use fluorescent penetrant method to inspect any scratch or crease which obviously exceeds the thickness of the finish in accordance with TM 1-1520-266-23.

4. Inspect supports (4 and 5) for cracks, bends, distortion, gouges, corrosion, loose and missing rivets, and other damage. If crack in support is suspected perform eddy current inspection (TM 1-1520-266-23).

5. Inspect tail rotor driveshaft covers (1 and 2) for cracks, bends, distortion, gouges, corrosion, loose and missing rivets, and other damage. If crack in tail rotor cover is suspected perform eddy current inspection (TM 1-1520-266-23).



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2-3-12. TAIL ROTOR DRIVESHAFT COVERS — CLEANING/INSPECTION/REPAIR (CONT)

6. Inspect hinge halves (7 through 10) for cracks, distortion, and loose or missing rivets.

7. If tail rotor driveshaft covers (1 and 2) do not open and close smoothly, replace hinge pins (11 and 12).

8. Inspect hinge pins (11 and 12) for distortion and excessively deep nicks and scratches.

9. Inspect 13 Dzus fastener studs (13) for damage to slots, pins, and retainers.

10. Inspect 13 Dzus fastener receptacles (3) for damage to springs and attaching rivets.

NOTE

Tail rotor driveshaft covers shall be opened and closed as required.

11. Ensure 13 Dzus fastener studs (13) and 13 Dzus fastener receptacles (3) engage, hold, and release.

12. Inspect tail rotor driveshaft covers. Refer to figures Tail Rotor Driveshaft Forward Cover — Damage Limits and Aft Tail Rotor Driveshaft Cover — Damage Limits.

REPAIR

13. Replace damaged Dzus fastener stud in accordance with TM 1-1500-204-23.

14. Replace damaged Dzus fastener receptacle in accordance with TM 1-1500-204-23.

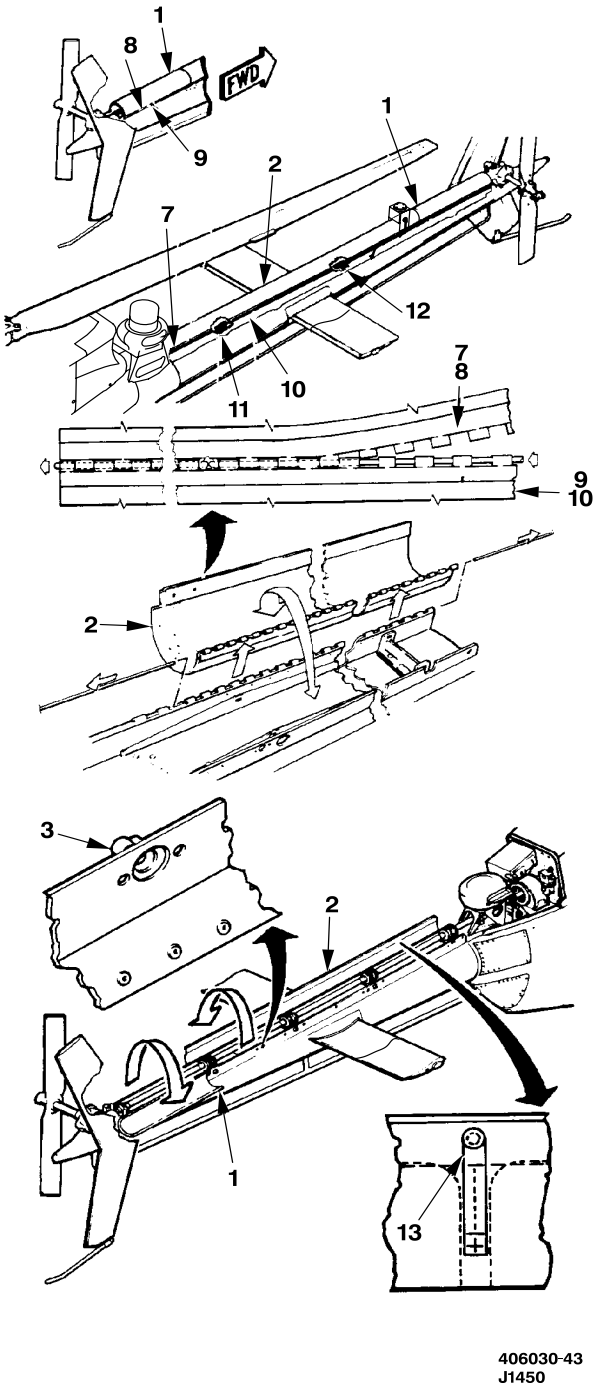
15. Replace damaged hinge half in accordance with TM 1-1500-204-23.

16. Replace bent, flattened, nicked, or worn hinge pin.

17. Replace loose or missing rivets in accordance with TM 1-1500-204-23.

18. Repair cracks in accordance with TM 1-1500-204-23.

19. Sand repaired areas using sandpaper (D175). Restore to original finish with epoxy primer coating (D98) and acrylic lacquer (D127). Refer to TM 55-1500-345-23.



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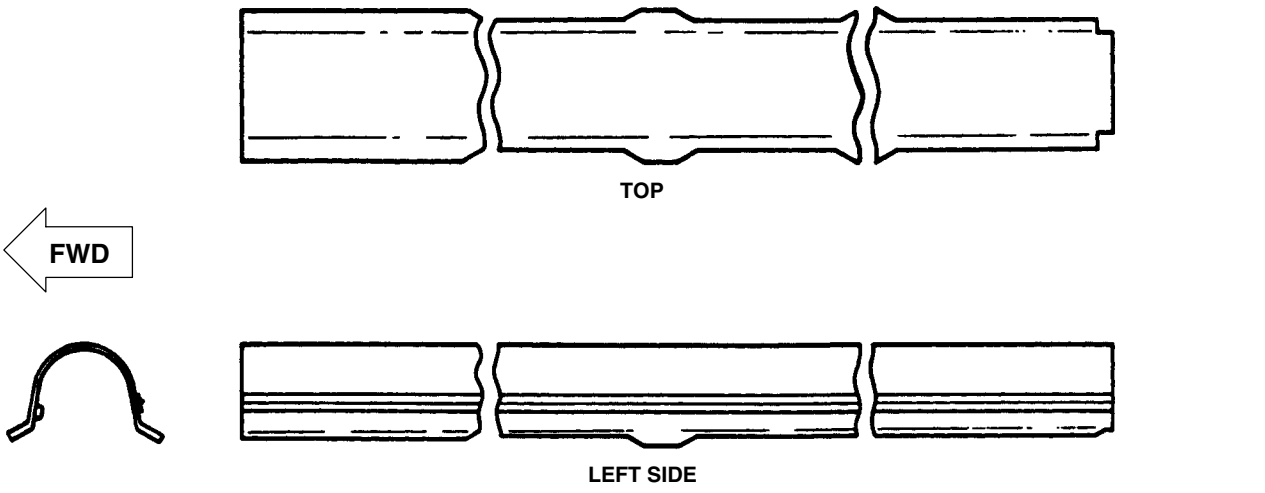
2-3-12. TAIL ROTOR DRIVESHAFT COVERS — CLEANING/INSPECTION/REPAIR (CONT)



TAIL ROTOR DRIVESHAFT FORWARD COVER

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOLS MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.004 in. before and after repair
CORROSION	0.002 in. before repair 0.004 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIRS	2 Sq. in.
NUMBERS OF REPAIRS	Not critical
EDGE CHAMFER	0.010 in. x 45°
DZUS FASTENER STUD AND RECEPTACLE (10 PLACES)	Engage freely, hold firmly, and release easily

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J0427

Tail Rotor Driveshaft Forward Cover — Damage Limits (Sheet 1 of 2)

GO TO NEXT PAGE

STUD	
Slot	**No damage that prevents turning with a screwdriver.**
Pins	**No damage that prevents free engagement, firm hold and easy release.**
Spring	**No damage that prevents free engagement and easy release.**
Blade	**No damage that prevents free engagement and easy release.**
RECEPTACLE	**No damage to pins and no other damage that prevents free engagement, firm hold, and easy release.**
HINGE HALF	
Loops	**Not more than one missing from a 6 inch length.**
Bending	**No bending that prevents free opening and closing of tail rotor driveshaft cover.**
HINGE PIN	**No bending that prevents free opening and closing of tail rotor driveshaft cover.**
RIVETS	
Loose or Missing	**Loose or missing rivets must be replaced immediately.**

NOTES:

1. **No cracks are permitted.**
2. **Distortion is considered to be negligible damage as long as it is less than 0.010 inch and does not inhibit free and easy engagement on driveshaft cover.**

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J0427

Tail Rotor Driveshaft Forward Cover — Damage Limits (Sheet 2 of 2)

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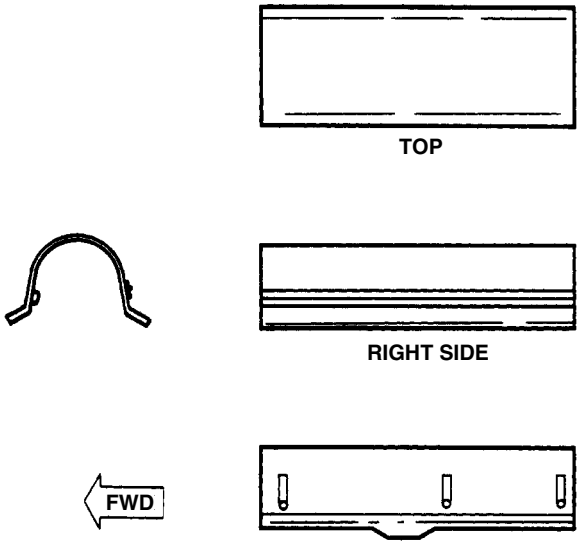
2-3-12. TAIL ROTOR DRIVESHAFT COVERS — CLEANING/INSPECTION/REPAIR (CONT)



TAIL ROTOR DRIVESHAFT AFT COVER

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.004 in. before and after repair
CORROSION	0.002 in. before repair 0.004 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	2.00 Sq. in.
NUMBER OF REPAIRS	Not critical
EDGE CHAMFER	0.010 in. x 45°
DZUS FASTENER STUD AND RECEPTACLE (3 PLACES)	Engage freely, hold firmly, and release easily
HINGE PIN	No bending that prevents free opening and closing of tail rotor driveshaft cover.
RIVETS	
Loose or Missing	Loose or missing rivets must be replaced immediately.

NOTES:

1. No cracks are permitted.
2. Distortion is considered to be negligible damage as long as it is less than 0.010 inch and does not inhibit free and easy engagement on driveshaft cover.

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J2143

Aft Tail Rotor Driveshaft Cover — Damage Limits

END OF TASK

2-3-13. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT — REMOVAL/INSTALLATION

This task covers: Removal and Installation of Countermeasures Set AN/ALQ-144 Jammer Mount (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B236)

Material:
Epoxy Primer Coating (D98)
Aliphatic Polyurethane Top Coating Color No. 34031 (D69)
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Countermeasures Set AN/ALQ-144 IR Jammer Removed (TM 11-5865-200-12)
Tail Rotor Driveshaft Covers Open

GO TO NEXT PAGE

2-3-13. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove covers (1) from mount assembly (2) by removing 20 screws (3) and washers (4).

2. Disconnect countermeasures set AN/ALQ-144 IR jammer transmitter J1 and J2 cables (5) from dummy receptacles (6 and 7).

3. Remove grommet (8) and pull cables (5) through grommet hole.

4. Stow cables.

5. Loosen Dzus fastener (9) and remove two screws (10) securing flange weld assembly (11) to tail rotor driveshaft cover hinge.

6. Remove four screws (12) securing flange weld assembly (11) to mount (2).

7. Remove flange weld assembly (11).

8. Remove four screws (13) and washers (14) from mount assembly (2) and left and right clip assemblies (15).

NOTE

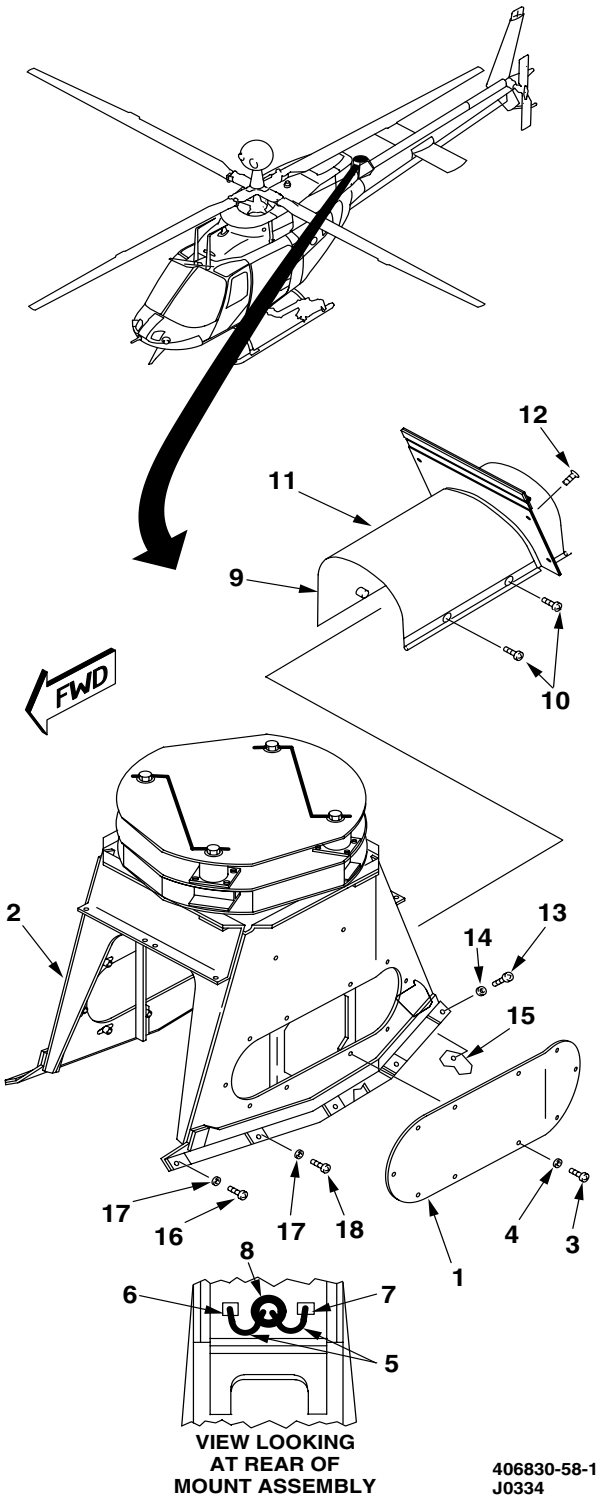
Identify location and length of screws in step 9. to aid in reinstallation.

9. Remove 8 screws (16), 6 screws (18), and 14 washers (17) securing LH and RH sides of mount assembly (2) to fuselage and tailboom.

CAUTION

To prevent damage during removal of mount assembly, tail rotor driveshaft shall be protected.

10. Remove mount assembly (2).



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2-3-13. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT — REMOVAL/INSTALLATION (CONT)

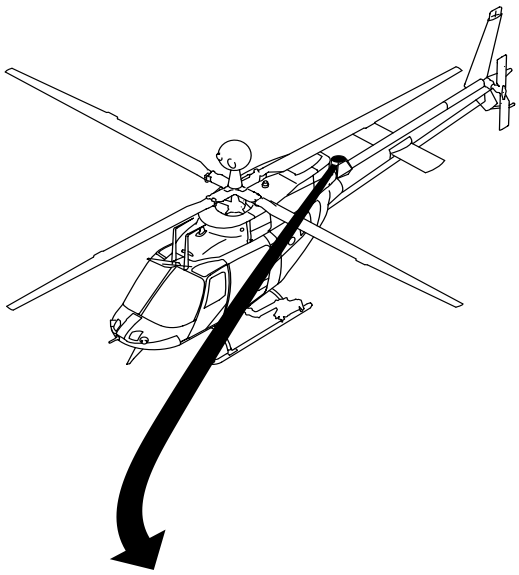
INSTALL

11. Prepare mount and aircraft surfaces for Class S bond (Appendix M).

CAUTION

To prevent damage to tail rotor driveshaft during installation of mount assembly, the driveshaft shall be protected.

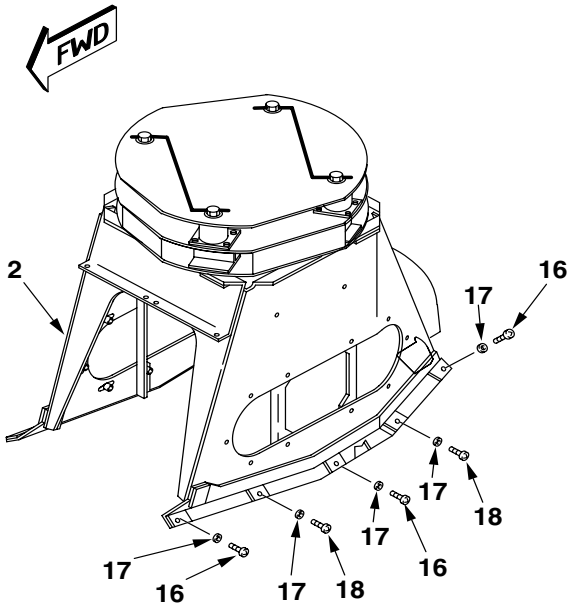
12. Position mount assembly (2) onto helicopter.



CAUTION

To prevent damage to aircraft structure, screws (16) and (18) shall be used in correct location.

13. Install 8 screws (16), 6 screws (18), and 14 washers (17) securing LH and RH sides of mount assembly (2) to fuselage and tailboom.



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2-3-13. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT — REMOVAL/INSTALLATION (CONT)

14. Install four screws (13) and washers (14) securing mount assembly (2) to left and right clip assemblies (15).

15. Place flange weld assembly (11) in position and secure to mount with four screws (12).

16. Install two screws (10) securing flange weld assembly (11) to tail rotor driveshaft cover hinge and secure Dzus fastener (9).

17. Pull transmitter cables J1 and J2 (5) through grommet hole and install onto dummy receptacles (6 and 7).

18. Install grommet (8).

19. Install covers (1) and secure with 20 screws (3) and washers (4).

CAUTION

To prevent damage to shock mounts, cover plate bolts shall not be overtightened.

20. If IR jammer is not to be installed at this time or if cover plate (19) is removed, install cover plate (19) using four bolts (20) and washers (21). Torque bolts (20) **30 TO 40 INCH-POUNDS**.

21. Insert lockwire (22) (D132) through bolt heads (20) and secure.

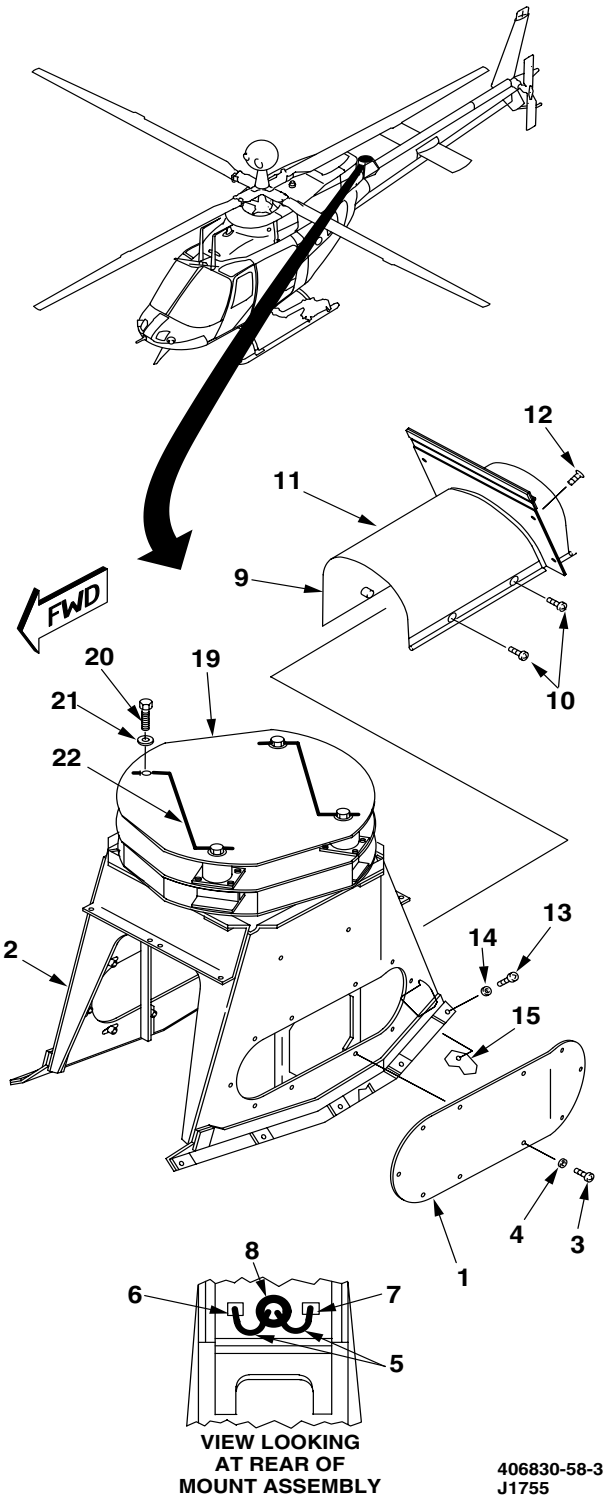
INSPECT

FOLLOW-ON MAINTENANCE

Perform Class S electrical bonding test (Appendix M).

Close and latch tail rotor driveshaft covers.

Install AN/ALQ-144 IR Jammer (TM11-5865-200-12)



END OF TASK

2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION

This task covers: Installation of Countermeasures Set AN/ALQ-144 Jammer Mount (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Electrical Repairer Tool Kit (B177)

Material:
Epoxy Primer Coating (D98)
Paint, Aliphatic Polyurethane No. 34031 (D69)
Lockwire (D132)
Drycleaning Solvent (D199)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer
68F Aircraft Electrician

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Tailrotor Driveshaft Covers Removed (Task 2-3-11)

GO TO NEXT PAGE

2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

Drilling Operations

CAUTION

To prevent damage to tailboom, holes shall be drilled in correct location.

1. Tailboom RH side, locate and drill out one rivet at STA 205.8, WL 69 using No. 21 drill bit.

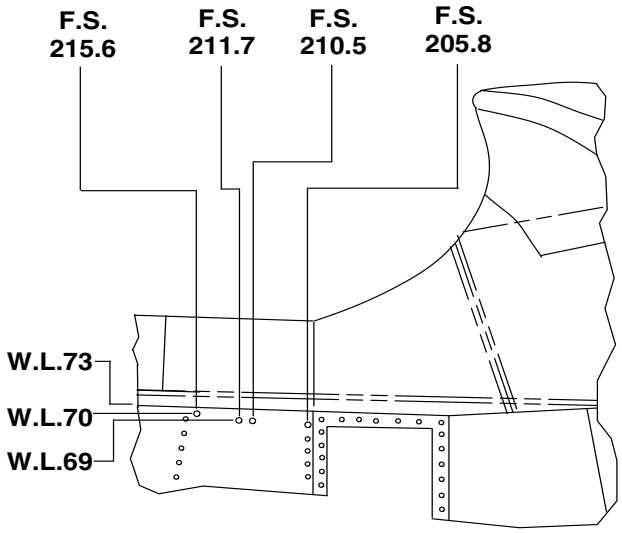
2. Tailboom RH side, locate and drill out one rivet at STA 215.6, WL 70 using No. 21 drill bit.

3. Tailboom LH side, locate and drill out one rivet at STA 205.8, WL 69 using No. 21 drill bit.

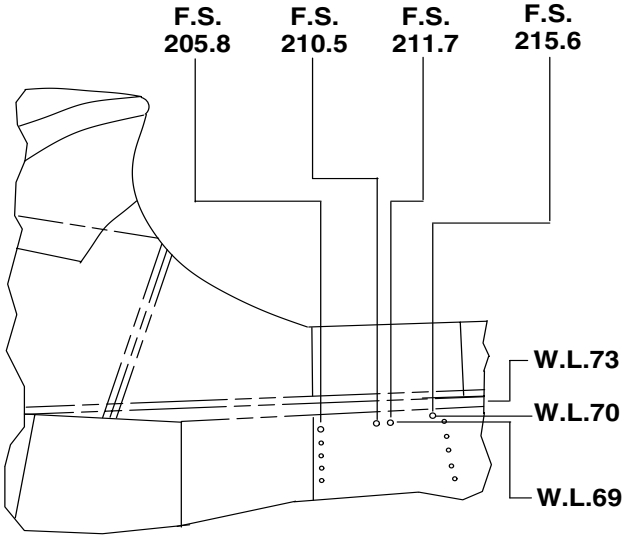
4. Tailboom LH side, locate and drill out one rivet at STA 215.6, WL 70 using No. 21 drill bit.

5. Tailboom RH side, locate and drill out two rivets at STA 215.6, WL 73 using No. 30 drill bit.

6. Tailboom LH side, locate and drill out two rivets at STA 215.6, WL 73 using No. 30 drill bit.



RIGHT SIDE



LEFT SIDE

406830-59-1
J1980

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2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

CAUTION

To prevent damage during installation and removal of mount assembly, tail rotor driveshaft shall be protected.

7. Temporarily place mount assembly (1) on helicopter and secure in place.

Drilling Operations

NOTE

Mount support flanges shall be replaced if holes in flange do not align with new tailboom.

8. RH side mount assembly flange, STA 210.5, WL 69. Drill pilot hole through mount assembly and helicopter skin using No. 30 drill bit.

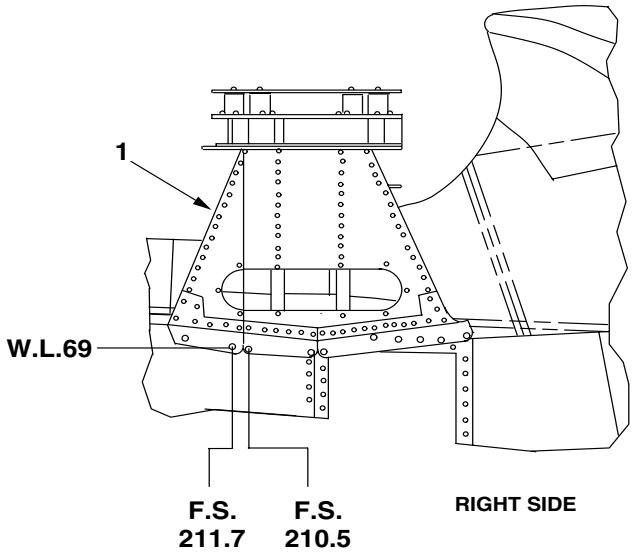
9. RH side mount assembly flange, STA 211.7, WL 69. Drill pilot hole through mount assembly and helicopter skin using No. 30 drill bit.

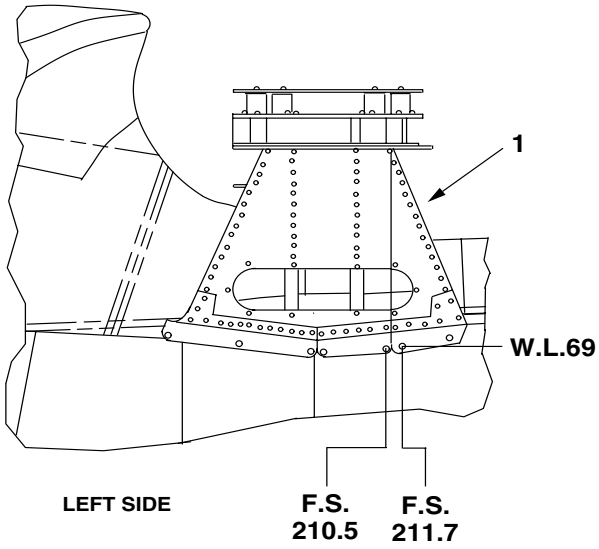
10. LH side mount assembly flange, STA 210.5, WL 69. Drill pilot hole through mount assembly and helicopter skin using No. 30 drill bit.

11. LH side mount assembly flange, STA 211.7, WL 69. Drill pilot hole through mount assembly and helicopter skin using No. 30 drill bit.

12. Ream holes drilled in steps 8 through 11 using No. 10 drill bit.

13. Loosen screws and Clecos securing mount assembly (1) to helicopter.





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J1980

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2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

14. Drill holes in RH side.

a. Position **5/32-inch** drilling and locating fixture in hole drilled at STA 205.8, WL 69.

b. Position **1/8-inch** drilling and locating fixture in hole drilled at STA 215.6, WL 70.

c. Tighten screws and Clecos securing mount assembly (1) to helicopter.

Drilling Operations

d. Drill pilot holes through drilling and locating fixtures.

e. Loosen screws and Clecos securing mount assembly (1) to helicopter.

f. Remove drilling and locating fixtures.

g. Tighten screws and Clecos securing mount assembly (1) to helicopter.

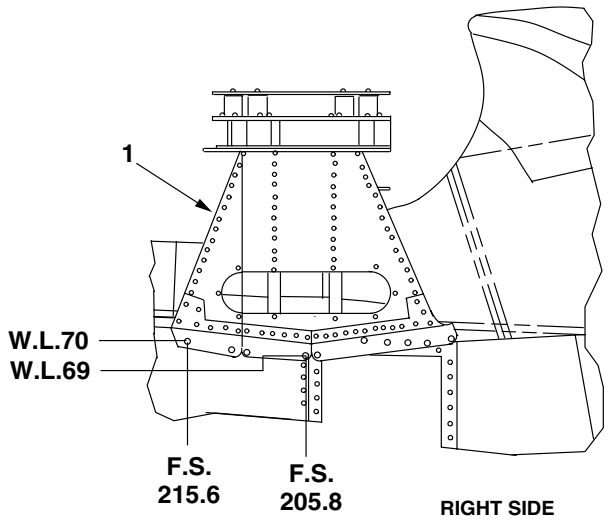
h. Using No. 21 drill bit at pilot hole drilled at STA 205.8, WL 69, drill through mount support flange and helicopter skin.

CAUTION

To prevent drilling into tailboom inner structure, drill stop shall be used.

i. Using No. 30 drill bit at pilot hole drilled at STA 205.8, WL 69, drill through mount support flange and helicopter skin.

15. Loosen screws and Clecos securing mount assembly (1) to helicopter.



406830-59-3
J2143

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2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

16. Drill holes in LH side.

a. Position **5/32-inch** drilling and locating fixture in hole drilled at STA 205.8, WL 69.

b. Position **1/8-inch** drilling and locating fixture in hole drilled at STA 215.6, WL 70.

c. Tighten screws and Clecos securing mount assembly (1) to helicopter.

Drilling Operations

d. Drill pilot holes through drilling and locating fixtures.

e. Loosen screws and Clecos securing mount assembly (1) to helicopter.

f. Remove drilling and locating fixtures.

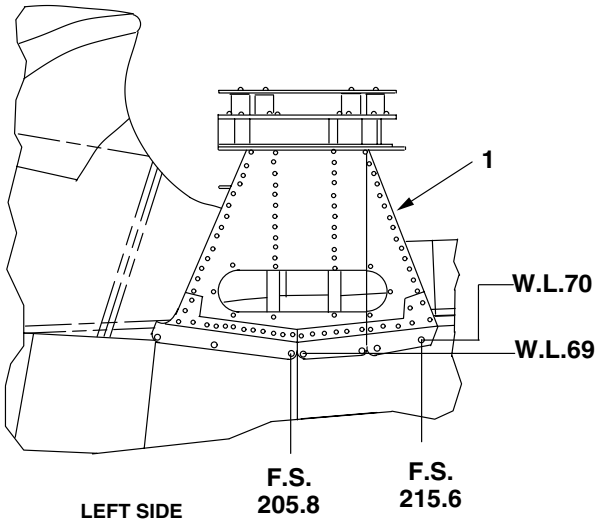
g. Tighten screws and Clecos securing mount assembly (1) to helicopter.

h. Using No. 21 drill bit at pilot hole drilled at STA 205.8, WL 69, drill through mount support flange and helicopter skin.

CAUTION

To prevent drilling into tailboom inner structure, drill stop shall be used.

i. Using No. 30 drill bit at pilot hole drilled at STA 205.8, WL 69, drill through mount support flange and helicopter skin.



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J1980

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2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

NOTE

Trimming of new clip assemblies may be required to ensure proper fit in mount assembly.

17. Install new clip assemblies (2) in mount assembly (1) using four screws (3) and washers (4).

18. Working inside tailboom, mark hole pattern from holes drilled in steps 5 and 6 onto new clip assemblies (2).

19. Remove four screws (3), four washers (4), and two clip assemblies (2) from mount assembly (1).

Drilling Operations

20. Drill marked hole pattern on clip assemblies (2) using No. 30 drill bit.

21. Ream holes using No. 16 drill bit.

22. Clean and deburr holes.

CAUTION

To prevent damage to tail rotor driveshaft, the driveshaft shall be protected during removal and installation of mount assembly (1).

23. Remove mount assembly (1).

24. Ream holes drilled in steps 5 and 6 using No. 16 drill bit.

25. Clean and deburr holes.

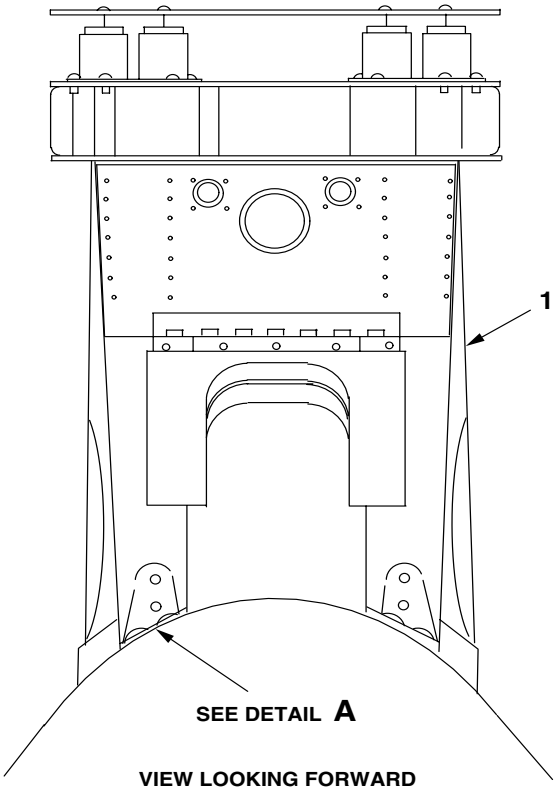
26. Install new clip assemblies (2).

NOTE

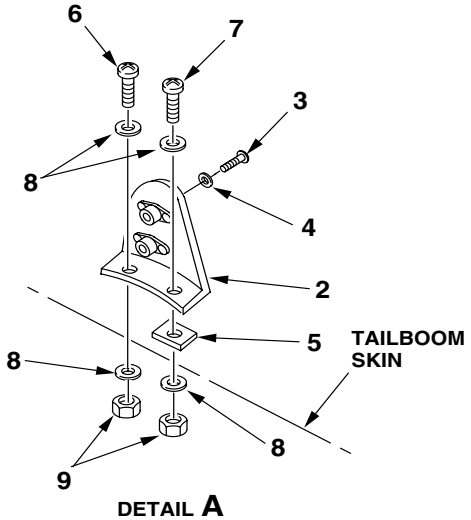
Trimming of shim may be required to ensure proper fit.

a. Position shim (5) under outboard side of new clip assembly (2).

b. Install new clip assembly (2) on tailboom using screw (6), screw (7), two washers (8), and two nuts (9).



VIEW LOOKING FORWARD



DETAIL A
VIEW ROTATED 180° RIGHT SIDE OPPOSITE

406830-59-5
J0333

GO TO NEXT PAGE

2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

27. Install nutplates on RH side.

a. Transfer nutplate rivet pattern to four holes drilled in new tailboom.

Drilling Operations

b. Countersink nutplate rivet pattern using No. 40 100° countersink.

c. Ream holes at STA 211.7, WL 69 and STA 210.5, WL 69 using No. 7 drill bit.

d. Ream holes at STA 215.6, WL 70 and STA 205.8, WL 69 using **1/4-inch** drill bit.

e. Deburr and clean holes.

f. Install nutplates with rivets.

28. Install nutplates on LH side.

a. Transfer nutplate rivet pattern to four holes drilled in new tailboom.

b. Countersink nutplate rivet pattern using No. 40 100° countersink.

c. Ream holes at STA 211.7, WL 69 and STA 210.5, WL 69 using No. 7 drill bit.

d. Ream holes at STA 215.6, WL 70 and STA 205.8, WL 69 using **1/4-inch** drill bit.

e. Deburr and clean holes.

f. Install nutplates with rivets.

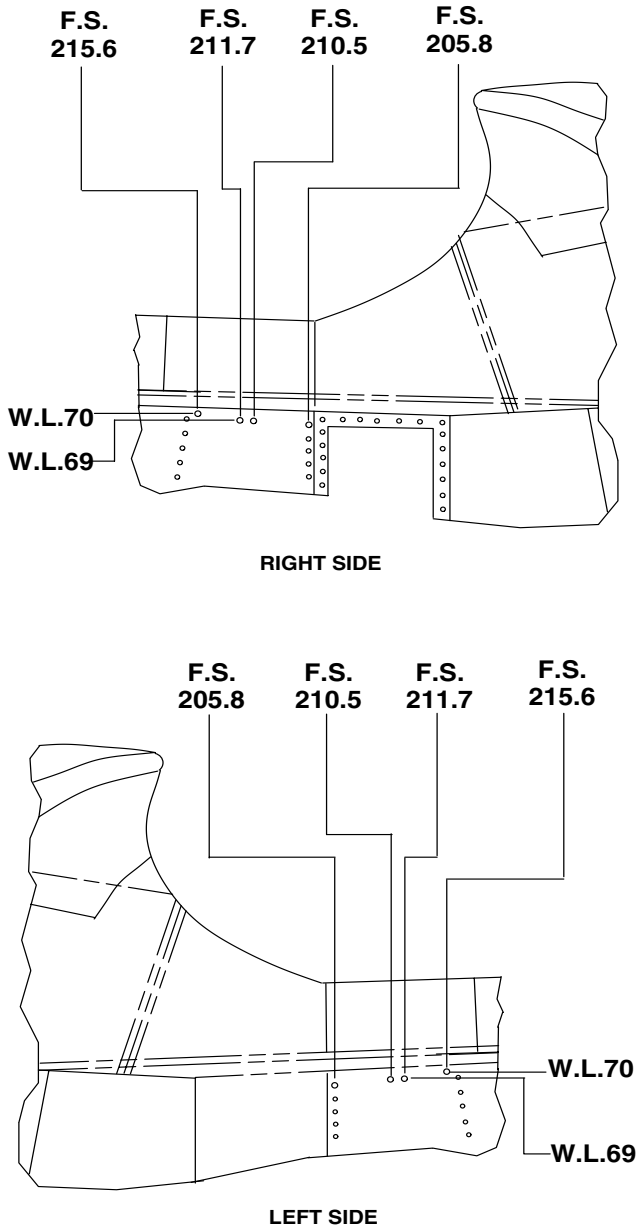
29. On tail rotor driveshaft forward cover measure aft **11.63 inches** from forward end and mark.

NOTE

If short driveshaft cover is needed, refer to Appendix H.

30. Cut driveshaft cover and hinge at mark.

31. Deburr cut ends of tail rotor driveshaft cover and hinge.



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2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

32. Modify short section of tail rotor driveshaft cover hinge as follows:

Drilling Operations

a. Drill out rivets securing hinge half to driveshaft cover using No. 30 drill bit.

b. Remove hinge half.

c. Double flush plug rivet holes in hinge half.

33. Identify modified tail rotor driveshaft cover as LEX-2298-003 and annotate with aircraft tail number.

NOTE

The following steps shall be accomplished if new support flanges are installed on mount assembly.

34. Coat helicopter rivets along WL 70 and WL 71 with a transferable material (i.e., chalk, grease pencil, etc.) to transfer rivet pattern to mount assembly.

35. Place mount assembly on helicopter and secure in place ensuring rivet pattern transfers to mount assembly.

CAUTION

To prevent damage to tail rotor driveshaft during removal and installation of mount, the driveshaft shall be protected.

36. Remove mount assembly from helicopter.

GO TO NEXT PAGE

2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

37. Rout out rivet pattern marked on mount assembly to clear button head rivets.

38. Install tail rotor driveshaft forward cover (Task 2-3-11) and hinge half.

39. Place mount assembly (1) on helicopter.

CAUTION

To prevent damage to aircraft structure, screws shall be used in correct location. Screws (10) and (12) are different lengths.

40. Install 8 screws (10), 6 screws (12) and 14 washers (11) securing LH and RH sides of mount assembly (1) to helicopter.

41. Install four screws (3) and washers (4) securing mount assembly (1) to left and right clip assemblies (2).

42. Place flange weld assembly (13) in position and secure to mount assembly (1) with four screws (14).

43. Using flange weld assembly (13) nutplates as templates, mark tail rotor driveshaft cover hinge at two places.

44. Remove four screws (14) securing flange weld assembly (13) to mount assembly (1).

45. Remove flange weld assembly (13).

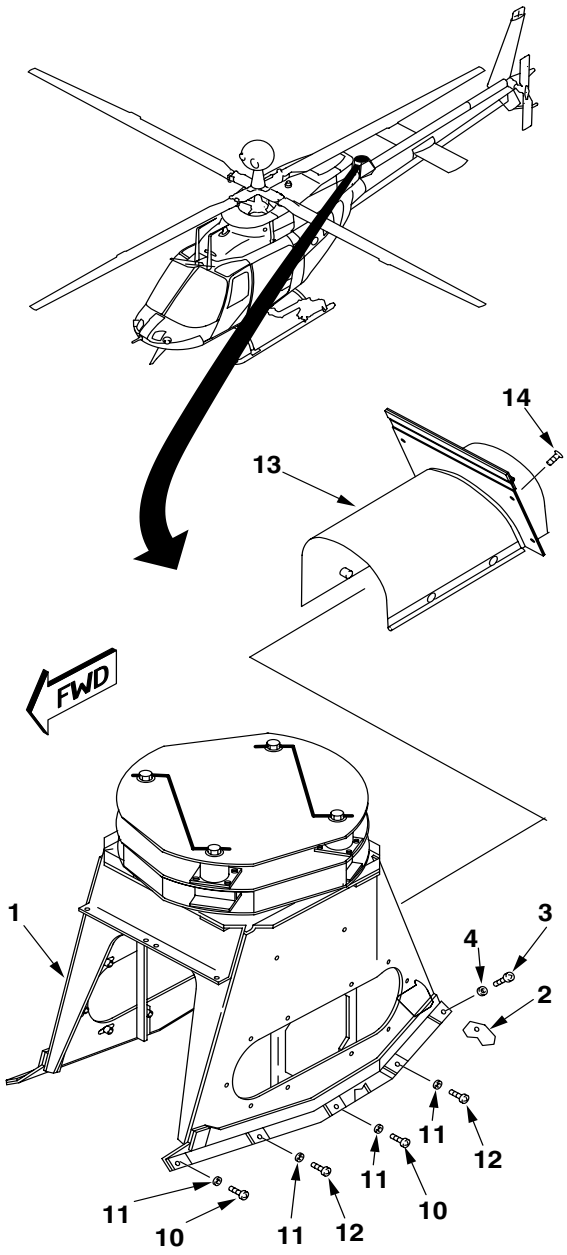
46. Drill two holes in tail rotor driveshaft cover hinge using No. 7 drill bit.

47. Deburr and clean holes.

CAUTION

To prevent damage to tail rotor driveshaft during removal and installation of mount, the driveshaft shall be protected.

48. Remove mount assembly (1) from helicopter.



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J2169

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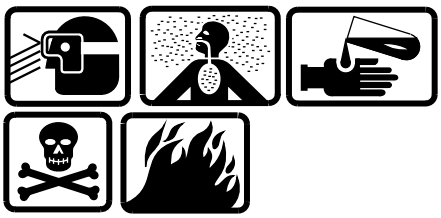
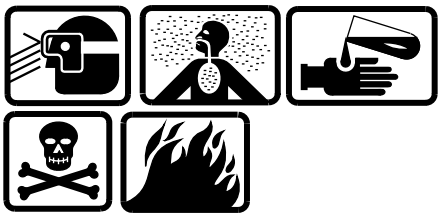
2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

INSTALL



Polyurethane Coating



Epoxy Primer Coating

CAUTION

To prevent failure of repair, caution must be taken to ensure that water or high humidity do not come in contact with component B at any time during reduction, application, or drying. Aliphatic polyurethane top coating is composed of two components, A and B. Component B is very water sensitive.

49. Apply two coats of epoxy primer coating (D98) followed by two coats of aliphatic polyurethane top coating (D150).

50. Prepare mount assembly and airframe surface for Class S bond (Appendix M).

GO TO NEXT PAGE

2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

51. Place mount assembly (1) on helicopter.

CAUTION

To prevent damage to aircraft structure, screws shall be used in correct location. Screws (10) and (12) are different lengths.

52. Install 8 screws (10), 6 screws (12), and 14 washers (11) securing LH and RH sides of mount assembly (1) to helicopter.

53. Install tailboom access panel (28).

54. Install four screws (3) and washers (4) securing mount assembly (1) to left and right clip assemblies (2).

55. Place flange weld assembly (13) in position and secure to mount assembly (1) with four screws (14).

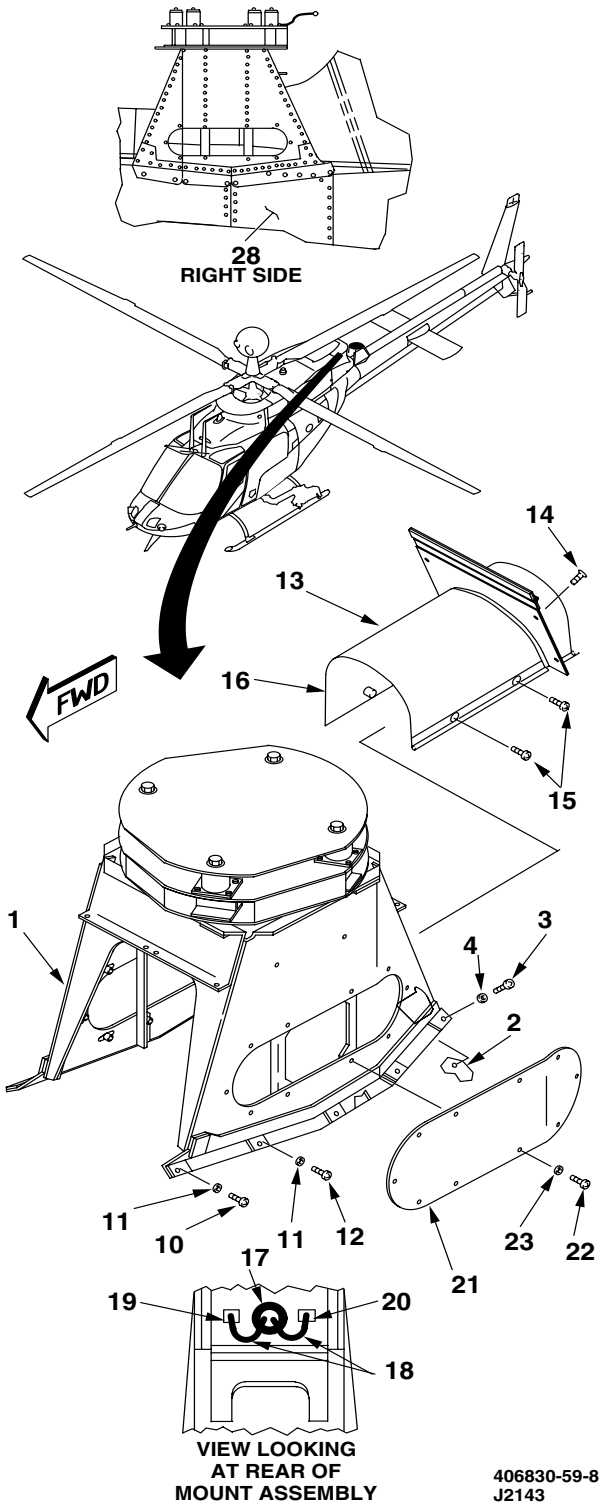
56. Install two screws (15) securing flange weld assembly (13) to tail rotor driveshaft cover hinge and secure Dzus fastener (16).

57. Remove grommet (17).

58. Pull transmitter cables J1 and J2 (18) through grommet hole and install cable connectors on dummy receptacles (19) and (20).

59. Reinstall grommet (17).

60. Install covers (21) and secure with 20 screws (22) and washers (23).



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2-3-14. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT (REPLACEMENT TAILBOOM) — INSTALLATION (CONT)

NOTE

Step 61. shall be completed if IR jammer is not to be installed.

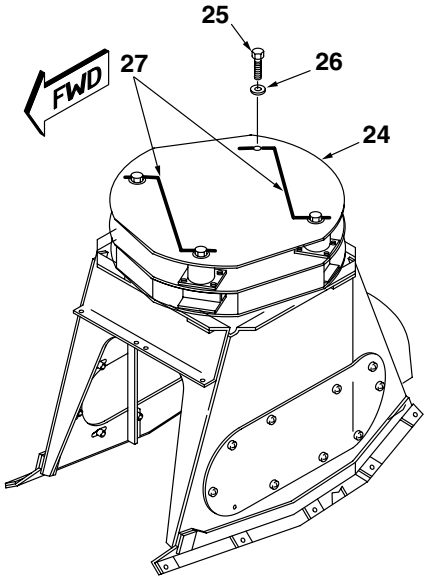
61. Install cover plate (24) (TM 11-1520-248-23) using bolt (25), washer (26) and lockwire (27) (D132).

INSPECT

FOLLOW-ON MAINTENANCE

Perform Class S electrical bonding test (Appendix M).

Install tail rotor driveshaft covers (Task 2-3-11).



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J0333

END OF TASK

2-3-15. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT — CLEANING/INSPECTION/ REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 11-1520-248-23

GO TO NEXT PAGE

2-3-15. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT — CLEANING/INSPECTION/ REPAIR (CONT)

CLEAN

1. Remove IR jammer mount cover (1) (TM 11-1520-248-23).

Drycleaning Solvent

2. Clean countermeasures set AN/ALQ-144 IR jammer mount (2) with drycleaning solvent (D199).

3. Dry mount with wiping rag (D164).

INSPECT

4. Visually inspect countermeasures set AN/ ALQ-144 IR jammer mount for cracks, scratches, nicks, gouges, and corrosion.

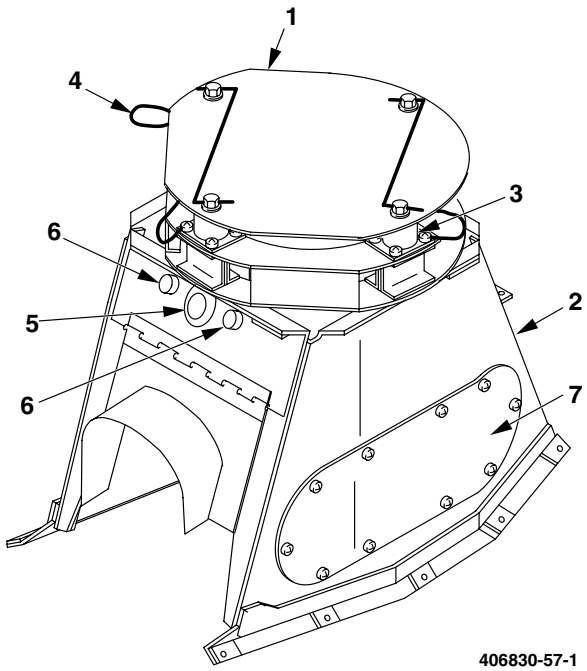
5. Visually inspect countermeasures set AN/ ALQ-144 IR jammer mount isolators (3), electric cables (grounding straps) (4), grommet (5), and dummy receptacles (6) for corrosion and serviceability.

6. Visually inspect countermeasures set AN/ ALQ-144 IR jammer mount left and right covers (7) for cracks, scratches, nicks, gouges, and corrosion.

7. Repair damage to countermeasures set AN/ ALQ-144 IR jammer mount (2) in accordance with TM 1-1500-204-23.

8. Replace covers (7) if damage will inhibit normal usage.

9. Burnish nicks, scratches, and gouges using 400 grit sandpaper (D175).



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J2144

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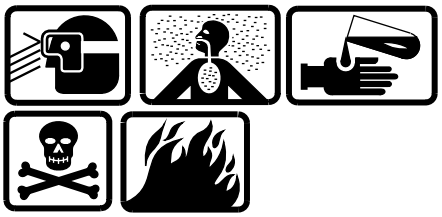
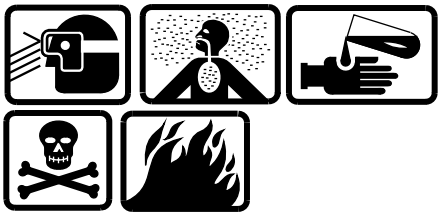
2-3-15. COUNTERMEASURES SET AN/ALQ-144 IR JAMMER MOUNT — CLEANING/INSPECTION/ REPAIR (CONT)

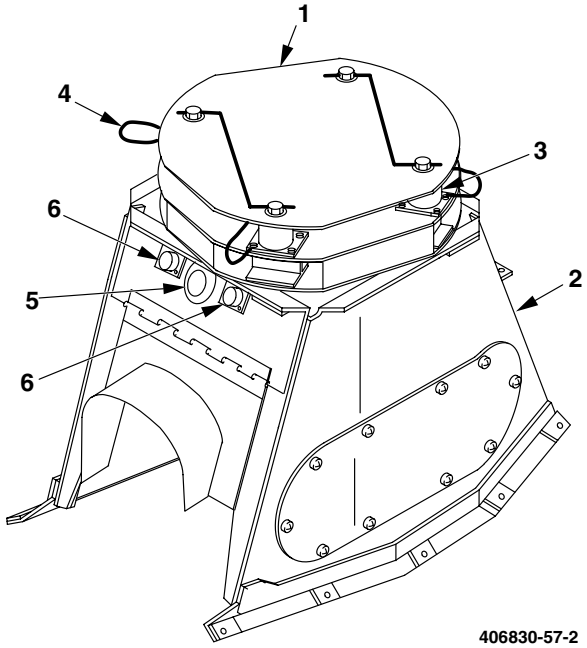
10. Repair isolators (3), electric cables (grounding straps) (4), grommet (5), and dummy receptacles (6) by replacement.



Epoxy Primer Coating



Polyurethane Coating



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J2144

CAUTION

To prevent failure of repair, caution must be taken to ensure that water or high humidity does not come in contact with component B at any time during reduction, application, or drying. Aliphatic polyurethane top coating is composed of two components, A and B. Component B is very water sensitive.

11. Apply two coats of epoxy primer coating (D98) followed by two coats of aliphatic polyurethane top coating (D150) (Task 2-2-65).

12. Install cover (1) (TM 11-1520-248-23).

INSPECT

END OF TASK

2-3-16. FIN ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Acetone (D1)
Cheesecloth (D56)
Wiping Rags (D164)
Rubber Gloves (D111)
Adhesive (D12)

Personnel Required:
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer
67S Scout Helicopter Technical Inspector (TI)

References:
TM 1-1500-204-23
TM 1-1520-266-23

GO TO NEXT PAGE

2-3-16. FIN ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Make sure fin assembly is clean. Use drycleaning solvent (D199) and wiping rags (D164) to remove oil or grease.

INSPECT

NOTE

For all inspection procedures see appropriate illustration.

2. Inspect skin around sleeves (1) for cracks.

3. Inspect for loose sleeve(s) (1). If void in skin is suspected refer to TM 1-1520-266-23.

4. Inspect fin for loose and popped rivet heads in rivet area with special attention to aft spar midsection.

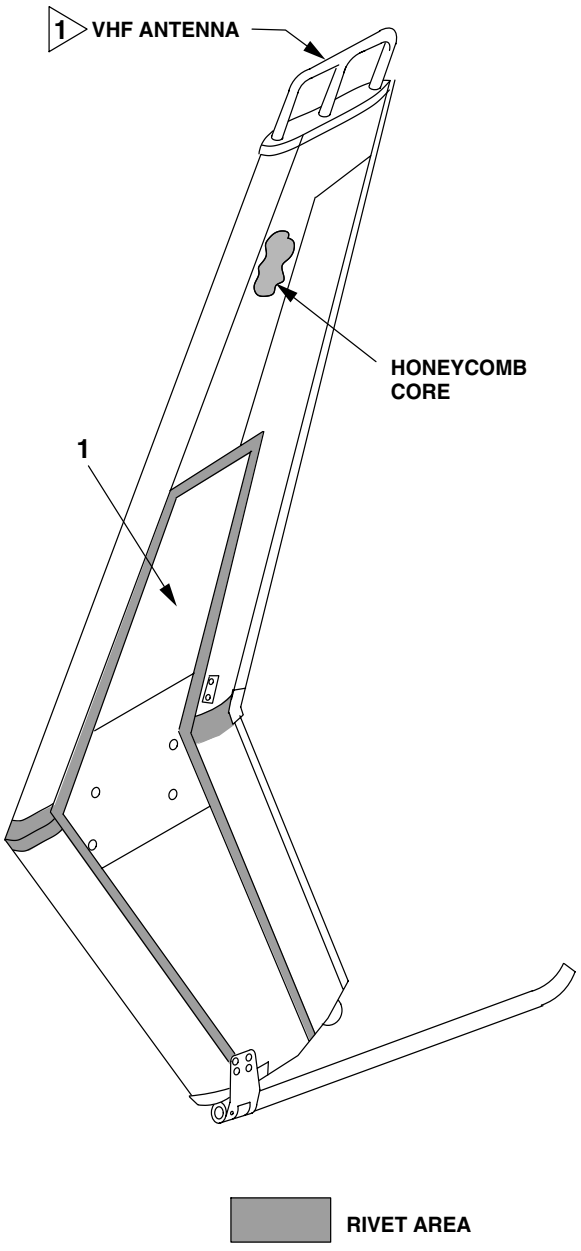
CAUTION

To prevent failure of repair and/or progressive core degeneration, when internal corrosion or contamination (fuel, oil, water, etc.) is discovered, affected skins or core shall be completely cut out.

NOTE

Sounding method for identifying bond separation should not be used within a dented area. Limits established for dents shall apply.

5. Inspect skin and/or honeycomb core for dents, punctures, and other damage. Inspect honeycomb core for internal fluid (TM 1-1520-266-23).



NOTE:

1 **VHF antenna extends down leading edge and trailing edge.**

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J2144

GO TO NEXT PAGE

2-3-16. FIN ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

NOTE

- Presence of bonding separation of void in a honeycomb panel can be detected by use of a sounding device (large coin or other like substitute). Tapping the metal covered surface of the panel will produce a dead or flat sound where bond separation (void) exists. The area should be outlined using a grease pencil.
- Every effort should be made toward maintaining the highest standards of cleanliness possible and following the recommended general instruction repair procedures. In all repairs, the precautionary measures regarding inspection for water, fuel, and oil contamination and resultant corrosion shall be taken.

a. Inspect honeycomb panels for negligible damage.

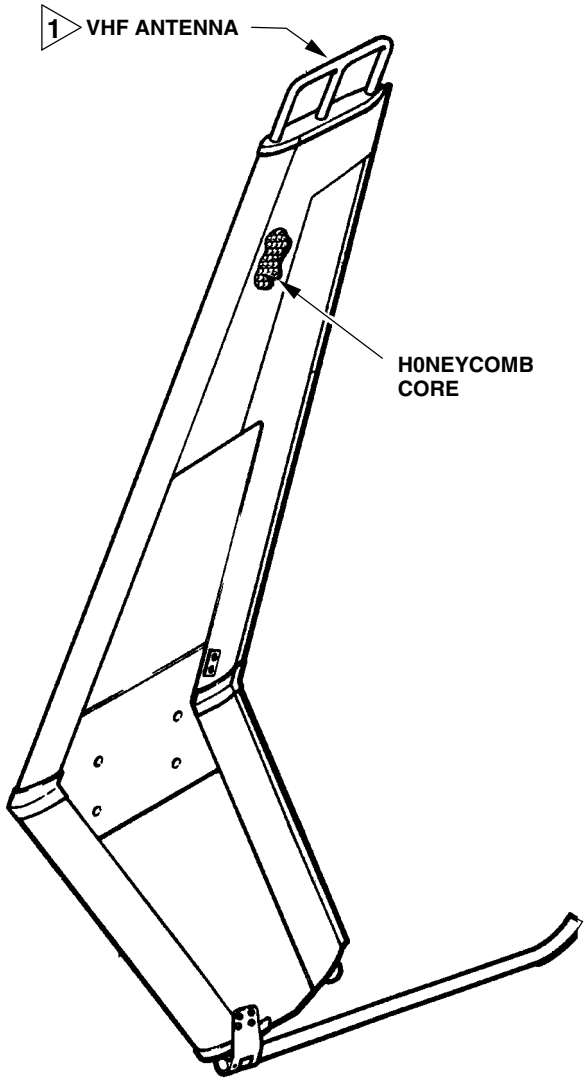
NOTE

Damage classified as negligible does not require immediate repair.

(1) Nonsharp dents up to 5 percent of panel thickness provided:

(a) Total damage does not exceed 5 percent of panel area.

(b) Edge of any dent is at least **1.00 inch** from any structural member, fitting, and or bevel edge of panel.



NOTE:

1 VHF antenna extends down leading edge and trailing edge.

406961-159
J0427

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NOTE

Dents closer than **1.00 inch** shall be considered one dent.

(2) Nonsharp dents up to 10 percent of dent diameter provided:

(a) Diameter does not exceed **0.500 inch**.

(b) Not more than three dents are within a **4.00 inch** diameter circle.

(c) The edge of any dent is at least **1.00 inch** from any structural member fitting or the panel edge bevel.

(3) Voids (bond failures) up to **0.500 inch** square provided:

(a) Not more than two such areas within a **4.00 inch** diameter circle.

NOTE

Voids closer than **1.00 inch** (edge to edge) shall be considered one void.

(b) The edge of any void is at least **3.00 inches** from any structural member, fitting, or the bevel edge of the panel.

NOTE

Edge separation (delamination) is never classified as negligible damage.

b. Inspect honeycomb panels for minor damage consisting of punctures, sharp dents, creases, dents to only one skin and core exceeding 10 percent of damage diameter.

(1) Maximum diameter of damage after cleanup does not exceed **0.500 inch**.

(2) Not more than two such areas within a **4.00 inch** diameter circle.

(3) Any two damaged areas not closer than **1.00 inch**.

NOTE

Damage areas closer than **1.00 inch** shall be considered one damage area.

(4) Edge of cleanup is a minimum of **3.00 inches** from any attachment point or fitting.

(5) Edge of cleanup is a minimum of **3.00 inches** from any panel edge or cut-out.

NOTE

All damage exceeding minor damage limits shall be treated as major damage.

c. Inspect honeycomb panels for major damage consisting of punctures, voids, or dents that require cleanup hole more than **0.500 inch** in diameter.

(1) Maximum length of cleanup is **5.00 inches** in any direction.

(2) A maximum of two repairs per panel, with repairs separated by **5 inches** between edges of cleanup.

(3) Total damage does not exceed 12 square inches when only one skin and core is affected or 10 square inches when both skins and core are affected.

(4) Edge of cleanup is a minimum of **3.00 inches** from any attachment point or fitting.

(5) Edge of cleanup is a minimum of **3.00 inches** from any panel edge or cutout.

NOTE

When limits for major damage are exceeded, repairs may be accomplished only with the approval of and per instructions of AMCOM engineering authority.

GO TO NEXT PAGE

2-3-16. FIN ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

6. Inspect antenna skin cap (2), and trailing edge (3) for nicks, cracks, splits, separations (voids), water inside fin assembly and evidence of collision from ground support equipment. If voids or separations are suspected refer to TM 1-1520-266-23.

7. Inspect for damaged receptacle (4) (Task (9-6-2).

8. Inspect tail skid (5) for presence and freedom of movement of counterweight pellets by rotating vertical fin. Inspect tail skid for evidence of bending, wear, corrosion, loose pin or bolt (6), and moisture sealing adhesive in ends of skid.

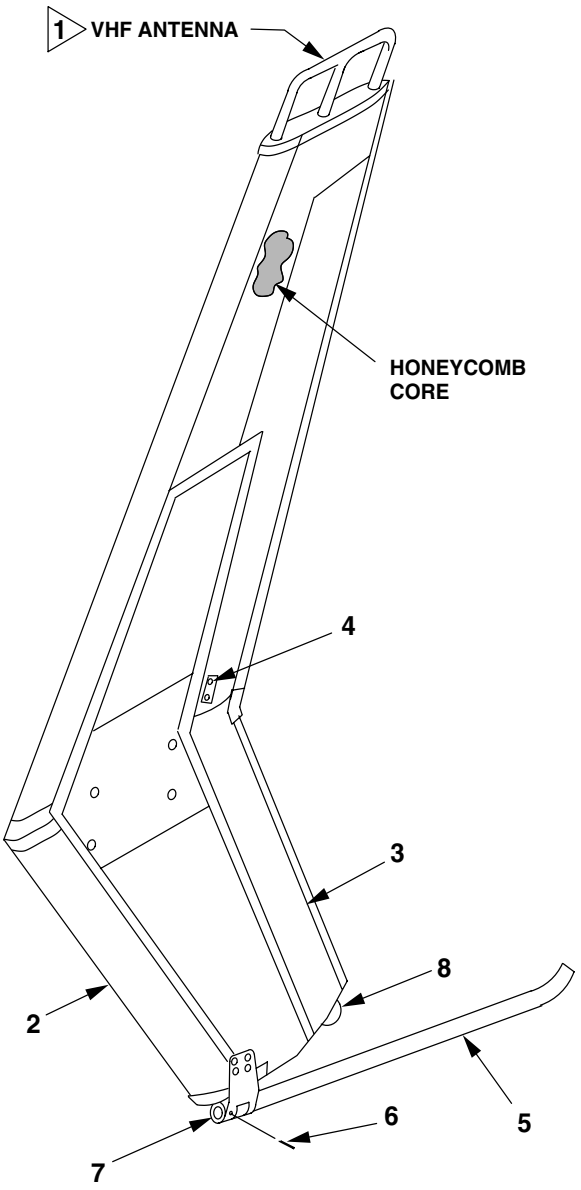
9. Inspect tail skid support (7) for wear, cracks, corrosion, and loose or missing hardware.

10. Inspect bumper (8) for presence of wear, looseness, and cracking.

11. Inspect finish for peeling, chipping, and scratches.

12. Inspect fin assembly. Refer to figure Fin Assembly — Damage Limits.

13. Inspect tail skid assembly. Refer to figure Tail Skid Assembly — Damage Limits.



NOTE:

1 **VHF antenna extends down leading edge and trailing edge.**

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J2144

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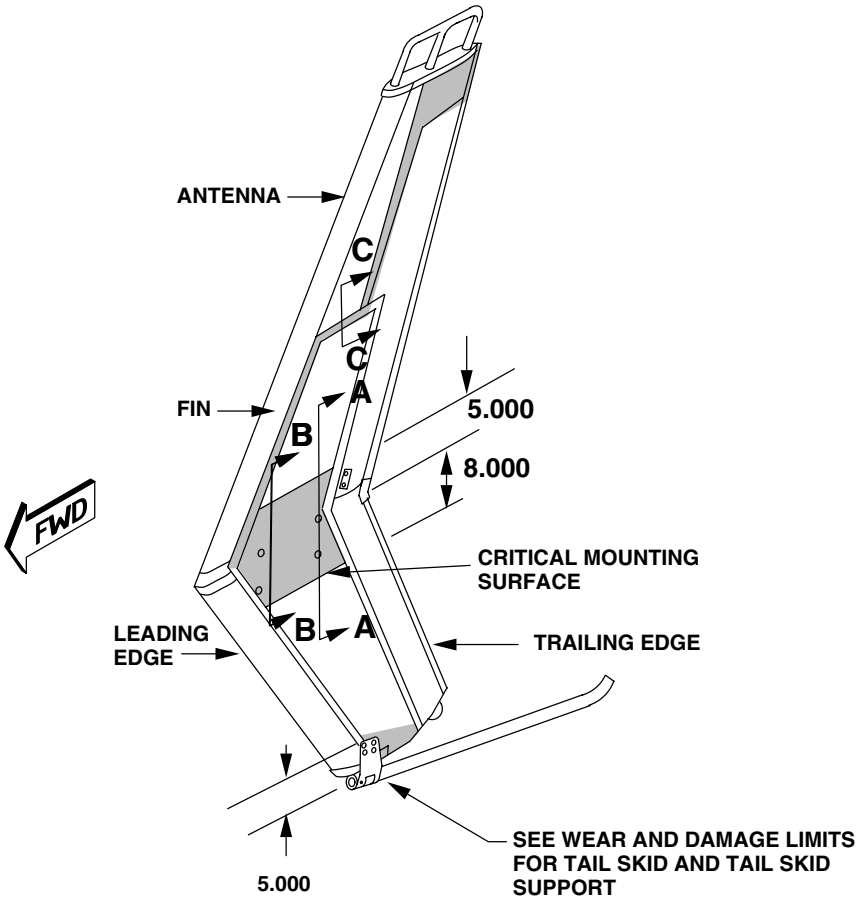

DAMAGE LOCATION SYMBOLS						
TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH					
MECHANICAL	1	2	1	2	1	2
CORROSION	1	3	1	2	1	3
MAXIMUM AREA PER FULL DEPTH REPAIR	0.500 Sq. in.		0.500 Sq. in.		0.500 Sq. in.	
NUMBER OF REPAIRS	4		4		Not critical	

406961-161-1
J2144

Fin Assembly — Damage Limits (Sheet 1 of 3)

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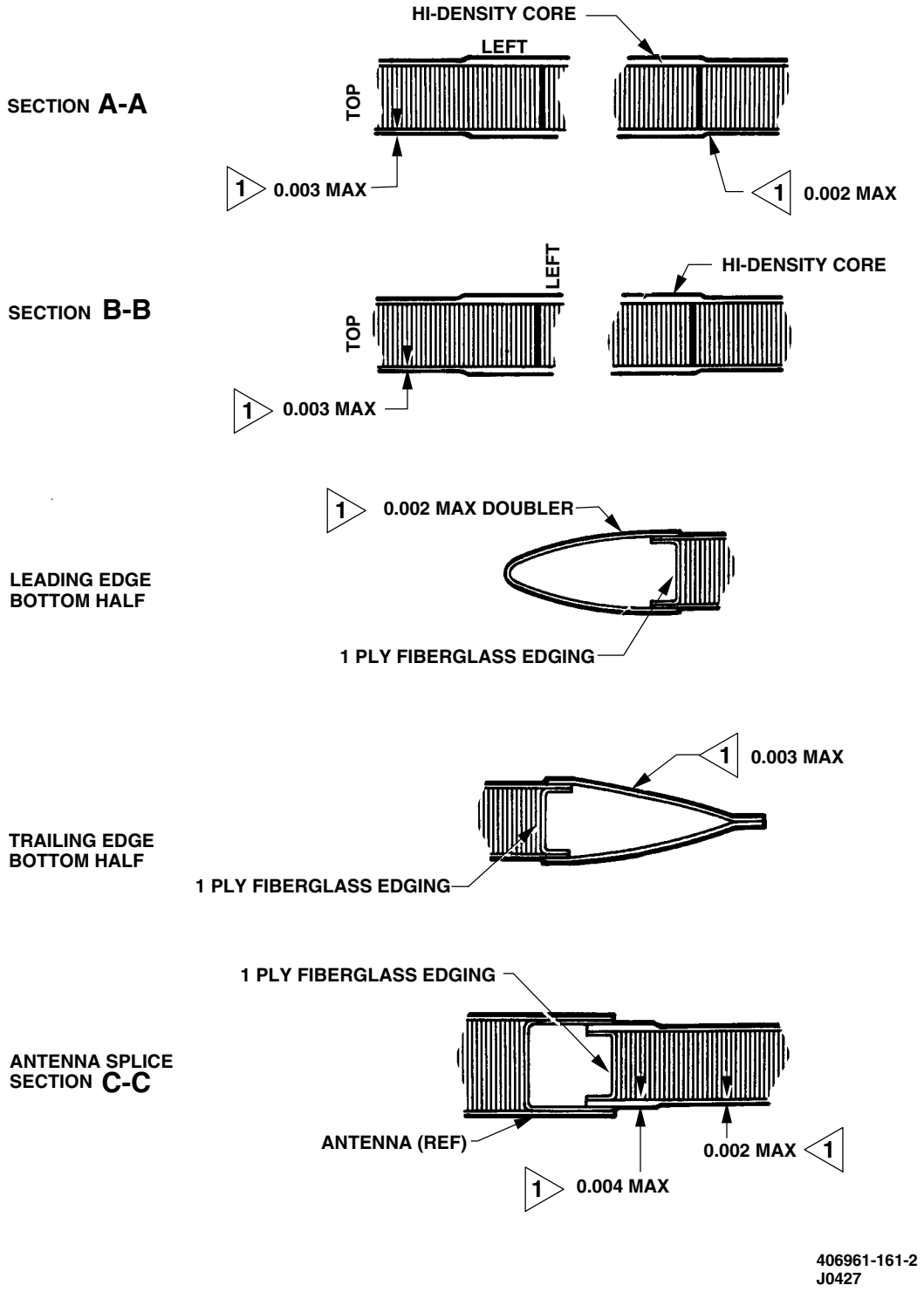
2-3-16. FIN ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)



Fin Assembly — Damage Limits (Sheet 2 of 3)

GO TO NEXT PAGE

GENERAL CONSTRUCTION

SKIN	**0.040/0.030/0.010 2024T3 SMOOTH (CHEM MILL)**
CORE	**1.250 THICK ALUMINUM HONEYCOMB UPPER AND LOWER**
L.E.	**0.012 2024T3 SMOOTH**
T.E.	**0.016 2024T3 SMOOTH**
CORE SEAL	**1 PLY FIBERGLASS**

REPAIRS LIMITS

FIN:

STANDARD (TM 1-1500-204-23) EXCEPTIONS:

No major repairs in hatched area without AMCOM engineering approval.

Note critical mounting surface

SHEET METAL REPAIRS FOR TRAILING AND LEADING EDGES

If antenna is operative, repairs including nonmetallic materials may be made.
If antenna is inoperative, remove and replace or consult avionics personnel.

NOTES:

1. **Maximum damage and repair depths allowable for nicks, scratches, and corrosion are shown for the various sections. Maximum area allowable for damage 4.00 square inches.**
2. **Limits for mechanical damage include cleanup.**
3. **Corrosion damage cleanup shall not exceed the maximum limits shown for the various sections. The depth of corrosion times 2 shall not exceed the maximum limits shown for the various sections.**
4. **2.00 inch minimum between repairs.**
5. **No metal is allowed in area of antenna.**
6. **All dimensions are in inches unless otherwise specified.**

406961-161-3
J2144

Fin Assembly — Damage Limits (Sheet 3 of 3)

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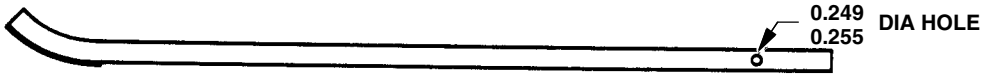

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL AND CORROSION	0.010 in. before 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.
NUMBER OF REPAIRS	Not critical
EDGE CHAMFER	0.030 in. x 45°
HOLE DIAMETER	0.002 in. max x 1/4 circumference

NOTES:

1. No cracks are permitted.
2. All dimensions are in inches unless otherwise specified.

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Tail Skid Assembly — Damage Limits (Sheet 1 of 2)

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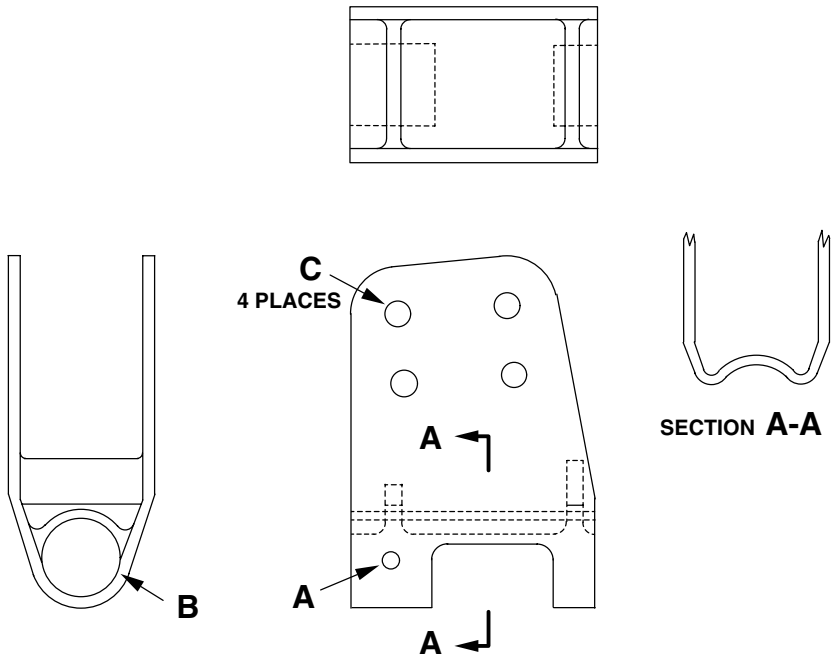


TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
	DAMAGE LOCATION SYMBOLS
MECHANICAL AND CORROSION	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.500 Sq. in.
NUMBER OF REPAIRS	Not critical
EDGE CHAMFER	0.030 in. x 45°
A HOLE DIAMETER (0.249/0.255 in.) B BORE DIAMETER (1.018/1.022 in.) C HOLE DIAMETER (0.312/0.313 in.)	0.002 inch maximum 1/4 circumference

NOTES:

1. No cracks are permitted.
2. All dimensions are in inches unless otherwise specified.

406020-2
J2144

Tail Skid Assembly — Damage Limits (Sheet 2 of 2)

GO TO NEXT PAGE

2-3-16. FIN ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

REPAIR

14. Remove loose and popped rivet heads (9) (as required) from rivet area (TM 1-1500-204-23).

15. Replace rivet (9) with next larger size rivet if the hole is sufficiently enlarged. Otherwise, replace with NAS1738B4 or M7885/6-4 rivets, in accordance with TM 1-1500-204-23.

16. Stop-drill crack with No. 40 drill.

Acetone

17. Clean foreign material from surface to be bonded approximately **1.00 inch** in all directions from the crack with clean cheesecloth (D56) moistened with acetone (D2).

18. Make a doubler from the same material and thickness of the skin. Extend doubler a minimum of **1.00 inch** in all directions from the crack.

19. Bond doubler in place using adhesive (D12) (TM 1-1500-204-23).

20. Rivet doubler in place with M7885/6-4 or NAS 1738B4 rivet at approximately **0.750 inch** spacing around the edge. Place field rivets, as required, at approximately **1.00 inch** spacing.

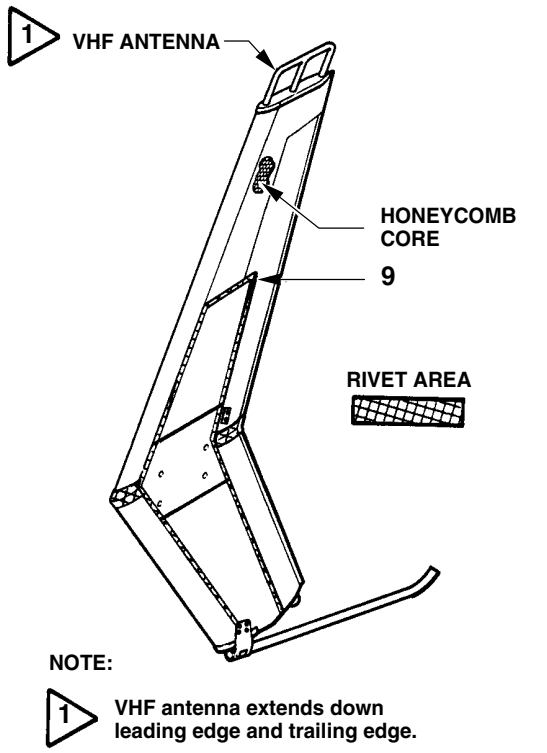
21. Allow time for adhesive to cure as follows:

a. At 75 °F, requires 24 hours; 5 days for full cure.

b. At 180 °F, requires 60 minutes. Bond line cure pressure not to exceed 10 psi.

22. Refinish repaired area in accordance with Task 2-2-65.

23. Replace tail skid if counterweight pellets do not rattle and move freely.



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END OF TASK

2-3-17. FIN ASSEMBLY (AVIM) — REPAIRING MINOR PUNCTURE DAMAGE AND REBONDING OF SLEEVE

This task covers: Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airmobile Sheet Metal Shop Set (B143)
Paint Spray Gun (B61)
Hypodermic Syringe (B167)

Material:
Rubber Gloves (D111)
Aliphatic Naphtha (D141)
Sandpaper (D174)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Polyurethane Top Coating, Olive Drab, Color No. X34087 (D150)
Adhesive (D19)
Cheesecloth (D56)
Barrier Material (D49)
Copper Filled Polyurethane Conductive Coating (D71)
Epoxy Adhesive (D24)
Masking Tape (D216)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

CAUTION

To prevent further damage to surrounding area, exercise extreme care when removing damaged or delaminated material from honeycomb panels. Use of pointed or sharp tools to extract loosened, damaged core from panel is to be accomplished with care.

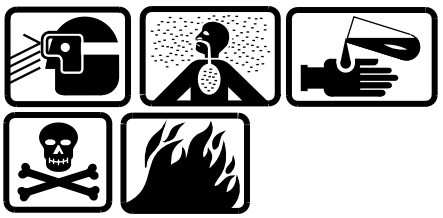
1. Protect opening to prevent entry of cleaning agents and solvents.

2. Remove finish and primer from an area extending **3 inches** beyond edges of damage.

a. Mask off area to be stripped. Use masking tape (D216) and barrier material (D49).

Sanding Operations

b. Use 320 or 400 grit sandpaper (D174 or D175) to remove top coat, conductive coat, and primer.



Naphtha/Naphthalene, TT-N-97

c. Use cheesecloth (D56) and aliphatic naphtha (D141) to remove sanding residue.

CAUTION

To prevent further damage to surrounding area, any core or skin contaminated by fuel, oil, water, corrosion, or debris must be cut out.

3. Cut away skin and core to remove all damaged and contaminated material.

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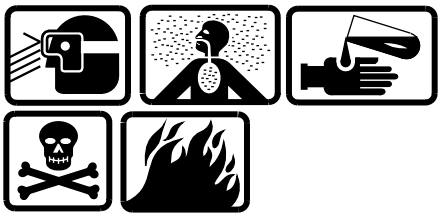
2-3-17. FIN ASSEMBLY (AVIM) — REPAIRING MINOR PUNCTURE DAMAGE AND REBONDING OF SLEEVE (CONT)



Naphtha/Naphthalene, TT-N-97

4. Flush cavity with aliphatic naphtha (D141).

Compressed Air

5. Use clean, dry compressed air to promptly dry cavity.

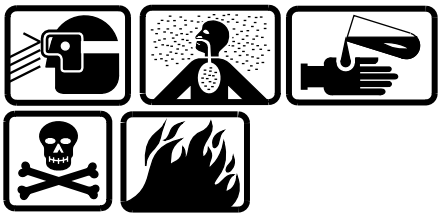
6. Apply adhesive.

a. Fill cavity with adhesive (D19) (Task 2-2-66).

b. Allow adhesive (D19) to cure (Task 2-2-66).

Sanding Operations

c. Use 320 or 400 grit sandpaper (D174 or D175) to sand adhesive (D19) to match contour.



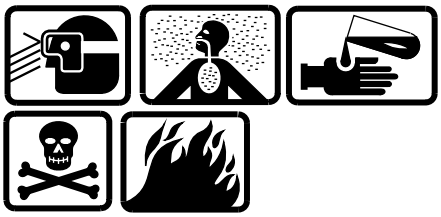
Naphtha/Naphthalene, TT-N-97

d. Use cheesecloth (D56) and aliphatic naphtha (D141) to remove sanding residue.

7. Finish repair area:

a. Apply one coat of epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

b. Apply one coat of conductive coating (D71) (Task 2-2-64).



Polyurethane Coating

c. Apply two coats of polyurethane top coating (D150) (Task 2-2-65).

d. Replace marking if damaged.

e. Remove all masking tape, barrier materials, etc.

INSPECT

GO TO NEXT PAGE

2-3-17. FIN ASSEMBLY (AVIM) — REPAIRING MINOR PUNCTURE DAMAGE AND REBONDING OF SLEEVE (CONT)

Drilling Operations

8. Drill two **1/16-inch** diameter injection holes through surface of fin assembly into adhesive.

9. Mix epoxy adhesive (D19) in accordance with TM 1-1500-204-23.

10. Place epoxy adhesive (D19) in a hypodermic syringe (B167).

11. Inject adhesive (D19) into one injection hole A. Continue until adhesive (D19) comes out of other injection hole.

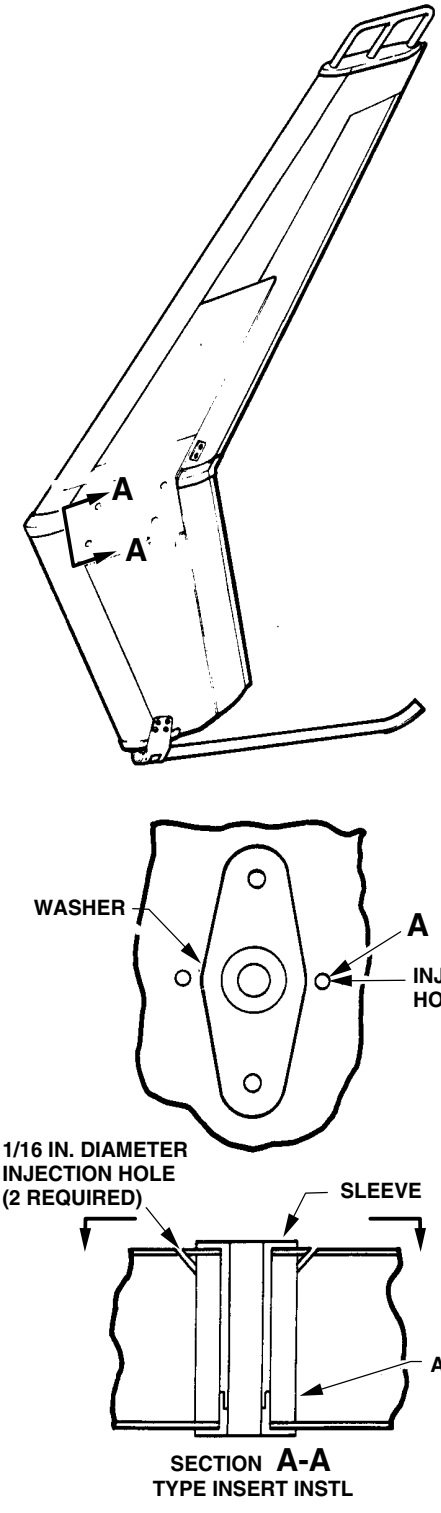
12. Remove excess adhesive (D19).

13. Use masking tape (D216) to cover adhesive (D19) and injection holes.

14. Allow adhesive (D19) to cure.

15. Remove masking tape (D216).

INSPECT



END OF TASK

2-3-18. TAIL SKID ASSEMBLY — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B236)

Material:
Lockwire (D132)
Acetone (D2)
Epoxy Primer Coating (D98)
Sealing Compound (D184)
Wiping Rags (D164)
Adhesive (D33)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

REMOVE

WARNING

To prevent injury to personnel, no one shall operate tail rotor controls from inside helicopter during tail skid replacement.

CAUTION

To prevent FOD condition, care will be exercised when removing tail skid from helicopter. If tail skid has weight kit installed, it will have one pound of shot inside it. It will rattle, and this condition is ok. Shot shall not be cemented in place, and it shall not be permitted to come out.

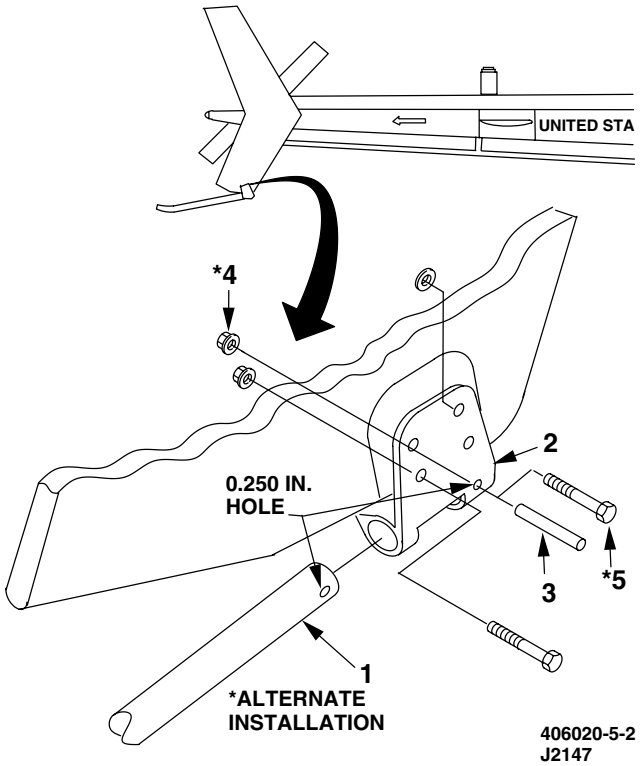
1. Remove tail skid (1) from tail skid support (2). (preferred method)

a. Remove lockwire from pin (3) and tail skid support (2).

b. Remove pin (3).

2. Remove tail skid (1) from tail skid support (2). (alternate method).

a. Remove lockwire from tail skid support (2) and nut (4).



b. Remove nut (4) from bolt (5). Remove bolt (5).

3. Loosen adhesive securing tail skid (1) to tail skid support (2) and remove tail skid (1).

GO TO NEXT PAGE

2-3-18. TAIL SKID ASSEMBLY — REMOVAL/INSTALLATION (CONT)

4. Remove four nuts (6) and four bolts (7).

5. Loosen adhesive securing tail skid support (2) to fin (8). Remove tail skid support (2) with shims (9), if installed.

INSTALL

Acetone

6. Clean mating surfaces of tail skid support (2), tail skid (1), and fin (8) with acetone (D2).

7. Touch up cleaned surfaces with epoxy primer coating (D98). Refer to TM 55-1500-345-23.

Adhesive

8. Install tail skid support (2) on fin (8) with adhesive (D33), using care to align holes.

9. Install eight shims (9). Peel shims as required, to provide **0.010 inch** maximum gap per side.

10. Install four bolts (7) and nuts (6).

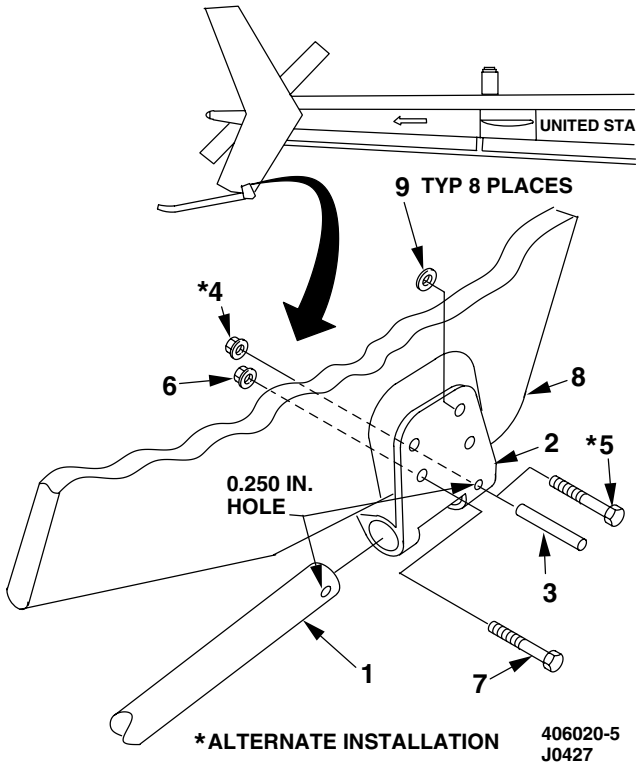
11. Torque nuts (6) **35 INCH-POUNDS**.

12. If installing new tail skid support (2) and tail skid (1), accomplish following steps:

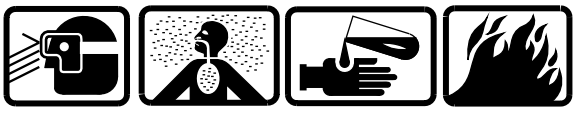
a. Position tail skid (1) into tail skid support (2).

b. Line drill one **0.250 inch** hole in accordance with TM 1-1500-204-23 through tail skid support (2) and tail skid (1) for installation of pin (3).

c. Remove tail skid (1) from tail skid support (2) and remove drilling residue with wiping rags (D164).



13. Install tail skid (1) on tail skid support (2).



Sealing Compound

a. Apply sealing compound (D184) on end of tail skid (1) hole and place tail skid (1) on tail skid support (2).

b. Align hole in tail skid (1) with hole in tail skid support (2).

(1) Insert pin (3) and secure with lockwire (D132). (preferred method)

(2) Install bolt (5) and nut (4) (alternate method)

INSPECT

END OF TASK

2-3-19. VERTICAL FIN BUMPER — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Heat Gun (B60)
Plastic Scraper (B123)
Mallet (B96)

Material:
Acetone (D2)
Nylon Web Abrasive Pads (D1)
Wiping Rags (D164)
Thermosetting Adhesive (D32)
Masking Tape (D216)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

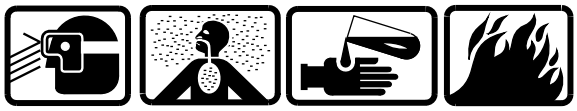
2-3-19. VERTICAL FIN BUMPER — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove tail skid (1) from tail skid support (2) (Task 2-3-18).

2. Use plastic scraper (B123) and a mallet (B96) to remove bumper (3) from bumper support (4).

CLEAN



Acetone

3. Use plastic scraper (B123), acetone (D2), and abrasive pads (D1) to remove old adhesive from bumper support (4).

INSTALL

4. Use wire brush to abrade mounting surface of bumper (3).

5. Use wiping rags (D164) and acetone (D2) to remove residue and dry bumper (3).

Adhesive

6. Brush thermosetting adhesive (D32) on mounting surfaces of bumper support (4) and bumper (3).

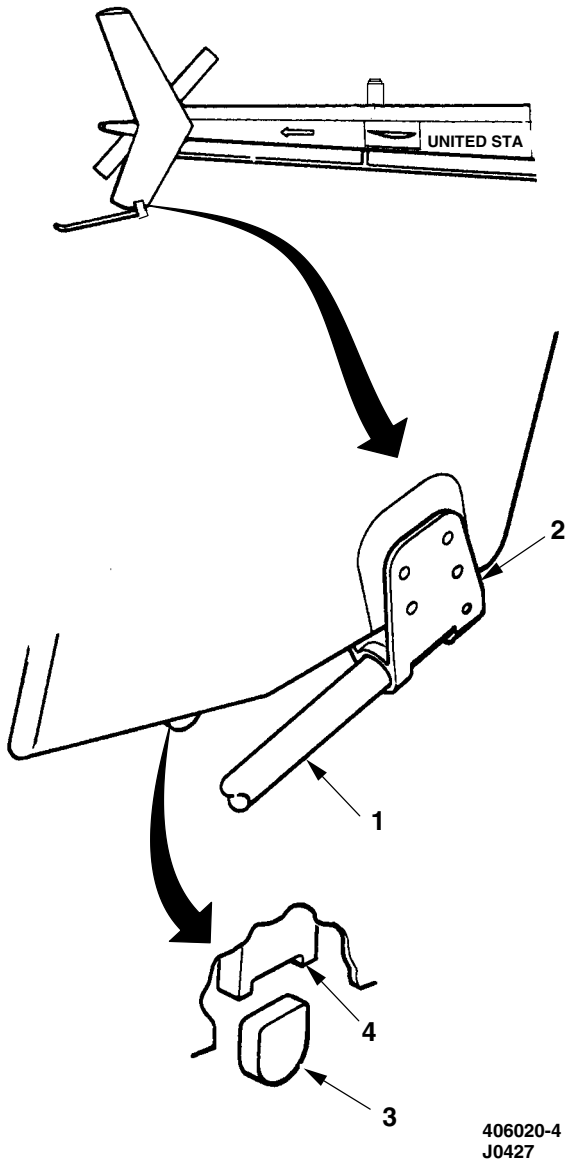
7. Install bumper (3) in bumper support (4). Use masking tape (D216) to hold bumper (3) for curing of thermosetting adhesive (D32).

8. Allow adhesive on bumper (3) to cure at room temperature for at least 24 hours or use heat gun at 325 to 340 °F for 45 minutes to cure thermosetting adhesive (D32).

9. Remove masking tape (D216) from bumper (3).

10. Install tail skid (1) in tail skid support (2) (Task 2-3-18).

INSPECT



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J0427

END OF TASK

2-3-20. FIN SKIN (AVIM) — REPAIRING VOIDS

This task covers: Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airmobile Sheet Metal Shop Set (B143)

Material:
Acetone (D2)
Aliphatic Naphtha (D141)
Sandpaper (D174)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Aliphatic Polyurethane Top Coating (D150)
Adhesive (D19)
Wrapping Paper (D48)
Masking Tape (D216)
Cheesecloth (D56)
Adhesive Promoter (D158)
Adhesive Promoter (D159)
Acetone (D2)
Copper Filled Polyurethane Conductive Coating (D71)
Epoxy Resin (D168)
Cellophane (D55)
Fiberglass Cloth (D101)
Aluminum Alloy Honeycomb, 1.25 Inch, 3.1 × 1/8 × 07N
Aluminum Alloy Honeycomb, 1.25 Inch, 8.1 × 1/8 × 20N
Barrier Material (D49)
Tedlar Transparent Bonding Material (D219)
Rubber Gloves (D111)
Lacquer Thinner (D223)

Personnel Required:
68G Aircraft Structural Repairer
67S Scout Helicopter Technical Inspector (TI)

References:
TM 55-1500-345-23

GO TO NEXT PAGE

2-3-20. FIN SKIN (AVIM) — REPAIRING VOIDS (CONT)

1. Preparation of bonding surfaces:

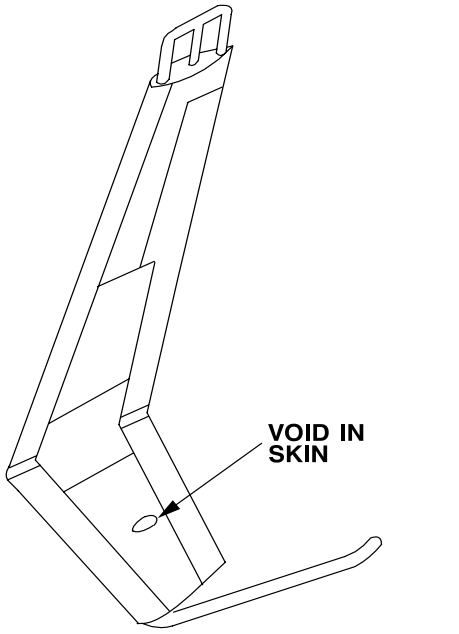
Acetone

CAUTION

To prevent further damage to surrounding area, removal of damaged or delaminated material from honeycomb panels must be accomplished with care. Use of pointed or sharp tools to extract loosened, damaged core from panel is to be accomplished with care.

NOTE

Any core or skin contaminated by fuel, oil, water, corrosion or debris must be cut out.



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J1450

a. Clean foreign material from surfaces to be bonded. Use clean cheesecloth (D55) moistened with acetone (D2).

NOTE

Total area of voids shall not exceed 10 percent of the total bonded panel area excluding the antenna. No one void shall be larger than 3.00 square inches in area. Voids 0.250 square inch or smaller are permissible. A minimum of **2.00 inches** between voids is required; otherwise, adjacent void areas are to be considered a single void.

b. Thoroughly sand surfaces to be bonded. Use silicone carbide wet or dry 320 or 400 grit sandpaper (D174 or D175) to remove all surface finish, primer and foreign material.

c. Mask off sanded surface area to protect surrounding area from acetone (D2). Use masking tape (D216).

Acetone

d. Wipe sanded area. Use clean cheesecloth (D56) moistened with acetone (D2). Change cheesecloth frequently until all evidence of residue is removed.

GO TO NEXT PAGE

Adhesion Promoter

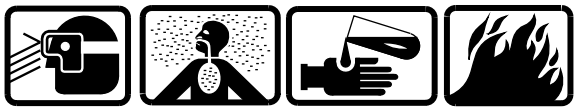
e. Immediately coat cleaned surface (metal only) with adhesive promoter (D158 or D159). Allow a minimum of 30 minutes drying time.

f. Remove all tape from masked area.

g. Protect surface from contamination until final bonding is accomplished. Use clean wrapping paper (D48).

2. Preparation of honeycomb core plug:

a. Cut a core plug (use only clean material of the same type as original) to fit the damaged area allowing approximately **0.200 inch** gap for adhesive at the edges.



Acetone

Compressed Air

b. Flush the plug with acetone (D2) and dry immediately with dry filtered air.

Adhesive

c. Apply a film of adhesive (D19) **(0.020 to 0.030 inch)** to a piece of Tedlar (D219) (area to be equal to surface area of plug).

GO TO NEXT PAGE

d. Place the core plug on the adhesive (D19). Apply firm contact to 5 psi pressure and allow adhesive to cure.

NOTE

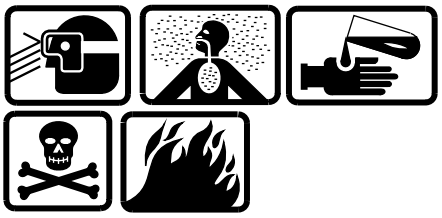
This will seal the core cells and provide a better bonding surface. If both panel skins are affected, both sides of plug should be sealed.

e. Protect the core plug from contamination until ready for use.

3. Cleaning of honeycomb core cavity.

a. Remove all loose debris from cavity.

Acetone



Naphtha/Naphthalene, TT-N-97

Compressed Air

b. Flush cavity using acetone (D2) or aliphatic naphtha (D141), and dry immediately with clean, filtered, dry compressed air.

c. Protect cleaned cavity from contamination until ready for subsequent operation.

4. Remove finish and primer:

2-3-20. FIN SKIN (AVIM) — REPAIRING VOIDS (CONT)

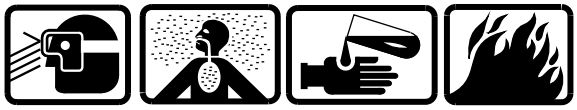
NOTE

Trichloroethylene and vapor degreasers are not to be used to clean or strip any surface adjacent to a damaged area. Aliphatic naphtha (D141) or acetone (D2) shall be used to remove sanding residue from skins and edging or exposed adhesive bond lines.

a. Remove finish and primer from an area extending **3.00 inches** beyond edges of damage.

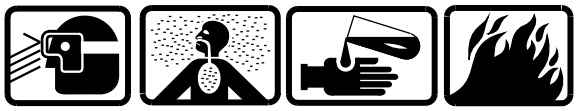
b. Mask off area to be stripped. Use masking tape (D216) and barrier material (D49).

c. Use 320 or 400 grit sandpaper (D174 or D175) to remove top coat, conductive coat, and primer.



Acetone

Naphtha/Naphthalene, TT-N-97



Thinner

d. Use cheesecloth (D56) and aliphatic naphtha (D141), acetone (D2), or lacquer thinner (D223) to remove sanding residue.

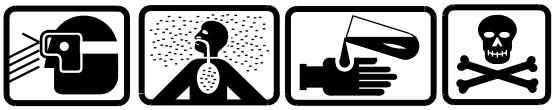
CAUTION

To prevent further damage to surrounding area, any core or skin contaminated by fuel, oil, water, corrosion, or debris shall be cut out.

GO TO NEXT PAGE

5. Fill cavity:

a. Use core plug to fill cavity (step 2).



Adhesive

b. Seal top and bottom surfaces of core plug. Use adhesive (D19).

c. Allow adhesive (D19) to cure.

NOTE

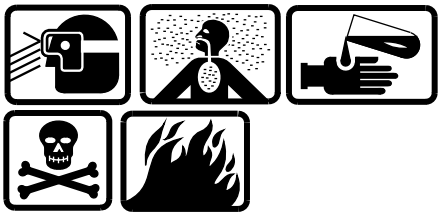
Damage of **1.00 inch** or less in diameter may be filled with adhesive and smoothed to contour of skin. A core plug is not required.

6. Patch skin:

NOTE

Fiberglass skin repairs should be accomplished after core plug has cured.

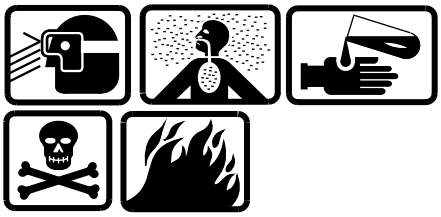
a. Prepare a patch of fabric layers (equal to number of plies lost) to provide a minimum of a **1.00 inch** overlap outside the damaged skin trim and to provide a minimum of **1.00 inch** overlap over each preceding layer.



Resins and Hardeners

b. Saturate the first patch with epoxy resin (D168). Apply resin to the exposed filler and to the exposed clean area of the panel around the damage.

c. Fit the impregnated patch into place. Smooth out air pockets and wrinkles.



Resins and Hardeners

NOTE

Adequate resin shall be forced through the patch ply in the core area.

d. Saturate each succeeding ply with epoxy resin (D168) and brush coat the entire repair area with resin (D168) and apply the patch. Work each ply to remove the wrinkles and entrapped air prior to application of the next ply. Minimum number of plies to be the same as existing skin.

e. Cover repair with cellophane (D55) and apply firm contact pressure to the patch with a weight of 10 to 25 pounds, clamps, or other suitable means.

f. Allow patch to cure for a minimum of 24 hours at 75 to 95 °F.

NOTE

Maximum strength is reached in 6 to 7 days.

Alternate cure procedure 120 minutes at 175 to 190 °F.

Remove cellophane, weight, etc.

g. Sand patch area lightly to blend with contour. Remove sanding residue (step 4).

7. Finish repair area:

a. Apply one coat of epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

b. Apply one coat of conductive coating (D71) (Task 2-2-64).

c. Apply two coats of aliphatic polyurethane top coating (D150) (Task 2-2-65).

d. Replace markings if damaged in accordance with TM 55-1500-345-23.

e. Remove all masking tape, barrier material, etc.

INSPECT

END OF TASK

2-3-21. FIN — REPAIR/TOUCHUP

This task covers: Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Acetone (D2)
Aliphatic Naphtha (D141)
Sandpaper (D174)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Aliphatic Polyurethane Top Coating (D150)
Masking Tape (D216)
Cheesecloth (D56)
Barrier Material (D49)
Dope and Lacquer Thinner (D223)
Copper Filled Polyurethane Conductive Coating (D71)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

1. Remove finish:

NOTE

Touchup of finish is required only in area(s) that is (are) chipped, peeled, or otherwise damaged.

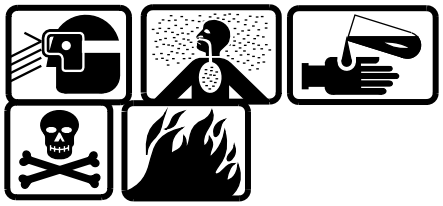
a. Remove finish and primer from an area extending **3 inches** beyond edges of damage.

b. Mask off area to be stripped. Use masking tape (D216) and barrier material (D49).

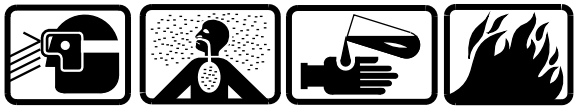
NOTE

Remove conductive coating and primer coating only if damaged and only to extent of damage.

c. Use 320 or 400 grit sandpaper (D174 or D175) to remove top coat, conductive coat, and primer.



Naphtha/Naphthalene, TT-N-97



Acetone

Thinner

d. Use cheesecloth (D56), aliphatic naphtha (D141), acetone (D2), or lacquer thinner (D223) to remove sanding residue.

2. Apply finish:

a. Apply one coat of epoxy primer coating (D98) in accordance with TM 55-1500-345-23.

b. Apply one coat of conductive coating (D71) (Task 2-2-64).

c. Apply two coats of aliphatic polyurethane top coating (D150) (Task 2-2-65).

d. Remove all masking tape, barrier material, etc.

e. Replace markings if damaged (TM 55-1500-345-23.

INSPECT

END OF TASK

2-3-22. FIN, PIVOTABLE — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B237)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)

References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-3-22. FIN, PIVOTABLE — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Disconnect antenna cable connectors (1 and 2) from antenna coaxial connectors (3 and 4).

2. Remove pivot bolt (5) and washer (6).

3. Remove guide bolt (7) and washer (8).

NOTE

Bolts are captive. When loosened fully bolts will latch into their retaining groove.

4. Support fin (9) and loosen four bolts (10).

5. Remove fin (9) from support (11).

6. Prepare support (11) for Class H electrical bond (Appendix M).

INSTALL

7. Support fin (9) in position and partially tighten four bolts (10). Do not tighten bolts (10) at this time.

8. Install pivot bolt (5) and washer (6).

9. Install bolt (7) and washer (8).

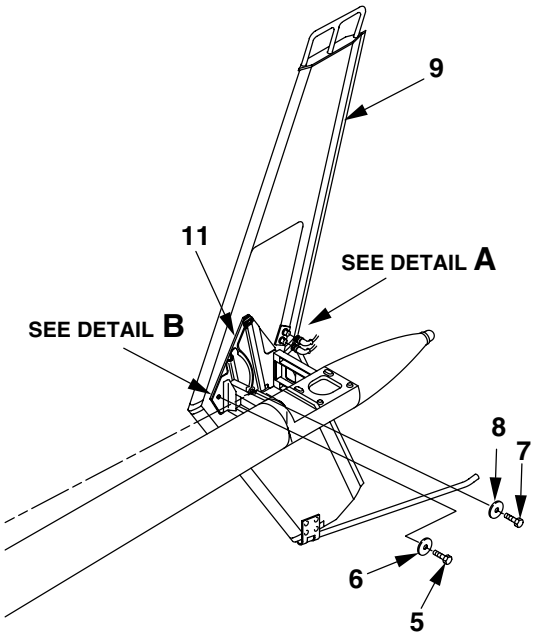
10. Torque bolts (5) and (7) **50 TO 70 INCH-POUNDS** and torque bolts (10) **60 TO 80 INCH-POUNDS**.

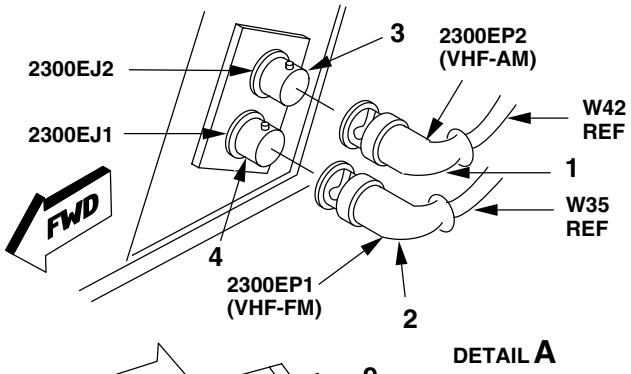
11. Connect two antenna cable connectors (1 and 2) to antenna coaxial connectors (3 and 4).

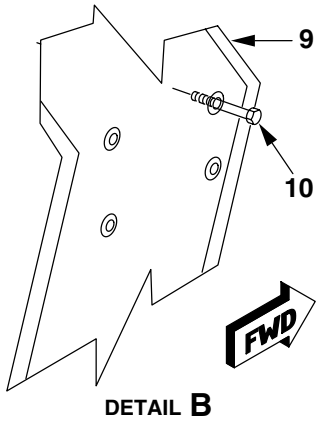
INSPECT

FOLLOW-ON MAINTENANCE

Perform MOC on VHF-FM and VHF-AM radios (TM 11-1520-248-23).







406704-130-4
J2147

END OF TASK

2-3-23. FIN SUPPORT (PIVOTABLE) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)

Material:
Sealant (D180)
Rubber Gloves (D111)
Acetone (D2)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Fin Assembly Removed (Task 2-3-22)

GO TO NEXT PAGE

2-3-23. FIN SUPPORT (PIVOTABLE) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove screw (1), washer (2), and nut (3) from bonding strap (4).

2. Remove four screws (5), washers (6) and nuts (7).

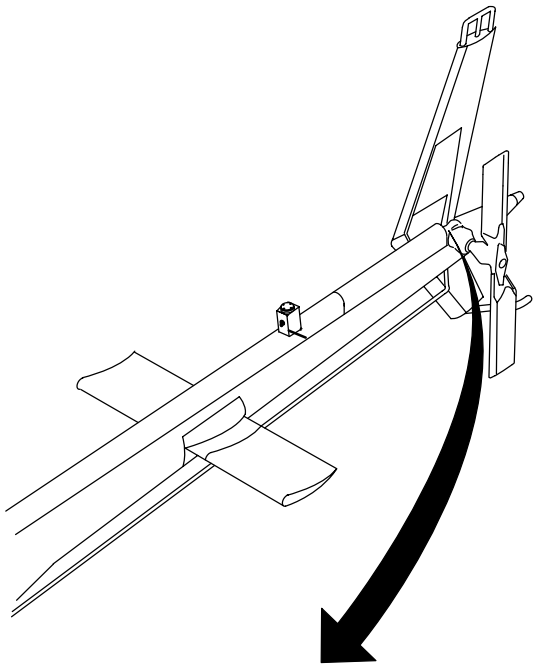
3. Remove support (8) from support fittings (9 and 10).

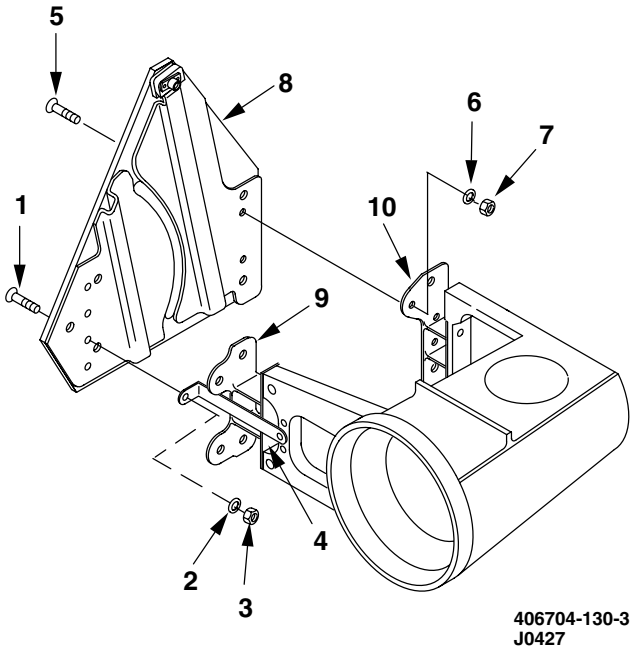
CLEAN

4. Using plastic scraper (B123), remove sealant from mating surfaces of support (8) and support fittings (9 and 10).

Acetone

5. Clean mating surfaces of support (8) and support fittings (9 and 10) with wiping rags (D164) dampened with acetone (D2).





406704-130-3
J0427

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2-3-23. FIN SUPPORT (PIVOTABLE) — REMOVAL/INSTALLATION (CONT)

INSTALL

Sealing Compound

6. Apply thin film of sealant (D180) to mating surfaces of support (8) and support fittings (9 and 10).

7. Place support (8) on support fittings (9 and 10).

8. Install four screws (5), washers (6), and nuts (7).

9. Remove excessive sealant.

10. Prepare surface of support (8) for bonding strap (4) to ensure Class L electrical bond (25 milliohms maximum)(Appendix M).

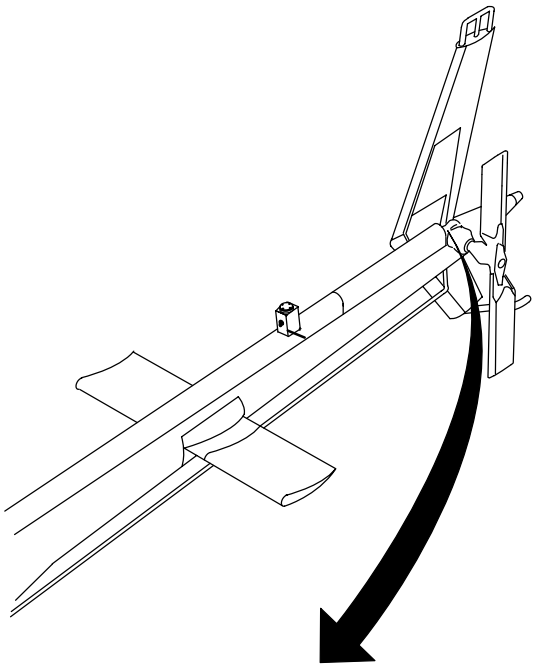
11. Position bonding strap (4).

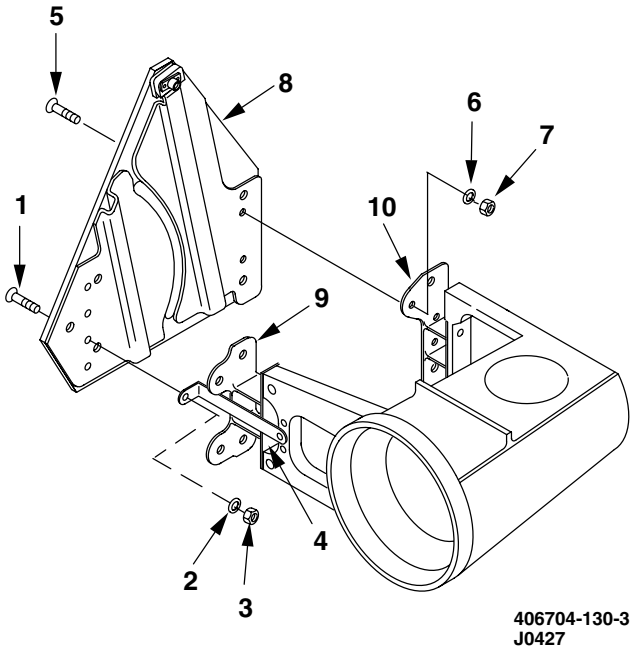
12. Install screw (1), washer (2), and nut (3).

INSPECT

FOLLOW-ON MAINTENANCE

Install fin assembly (Task 2-3-22).





406704-130-3
J0427

END OF TASK

2-3-24. FIN SUPPORT FITTINGS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)
Torque Wrench (B238)

Material:
Sealant (D180)
Rubber Gloves (D111)
Acetone (D2)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Fin Assembly Removed (Task 2-3-22)
Fin Support (Pivotable) Removed (Task 2-3-23)

GO TO NEXT PAGE

2-3-24. FIN SUPPORT FITTINGS — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove four bolts (1), washers (2), and washers (3).

2. Remove fin support fittings (4 and 5) from support assembly (6).

CLEAN

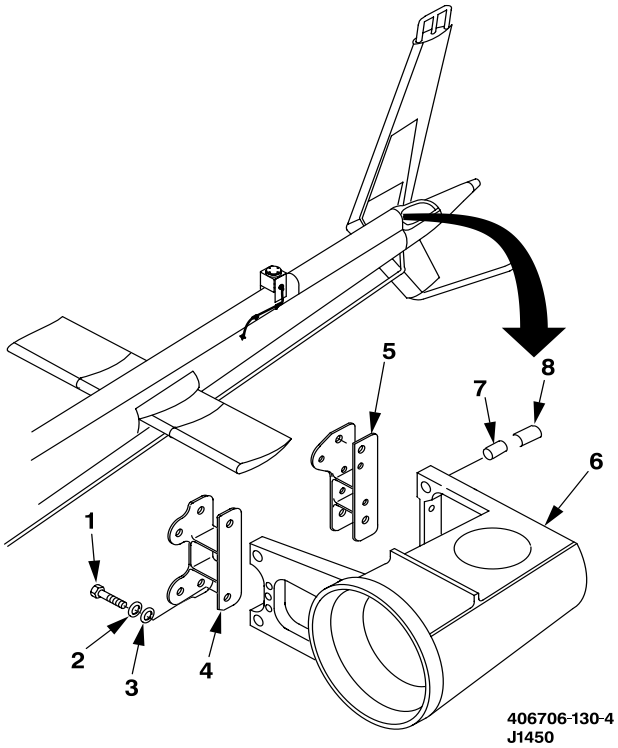
3. Using plastic scraper (B123), remove sealant from mating surfaces of support assembly (6) and support fittings (4 and 5).

Acetone

4. Clean mating surfaces of support (6) and support fittings (4 and 5) with wiping rags (D164) dampened with acetone (D2).

INSTALL

5. Replace anchor nuts (7) and retainers (8) if stripped or otherwise damaged.



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Sealing Compound

6. Apply thin film of sealant (D180) to mating surfaces of support assembly (6).

7. Place support fittings (4 and 5) on support (6).

CAUTION

- To prevent damage to support assembly, bolts shall not bottom out against support assembly.
- No less than one thread and no more than two threads shall be showing through anchor nuts.
- A maximum of two NAS1149C0416R and/or NAS1149C0432R washers per bolt shall be used between fin support fittings and 140-007-17J17C3 washers.

8. Install four bolts (1), four washers (2), and washers (3) (as required). Torque bolts (1) **75 TO 95 INCH-POUNDS**.

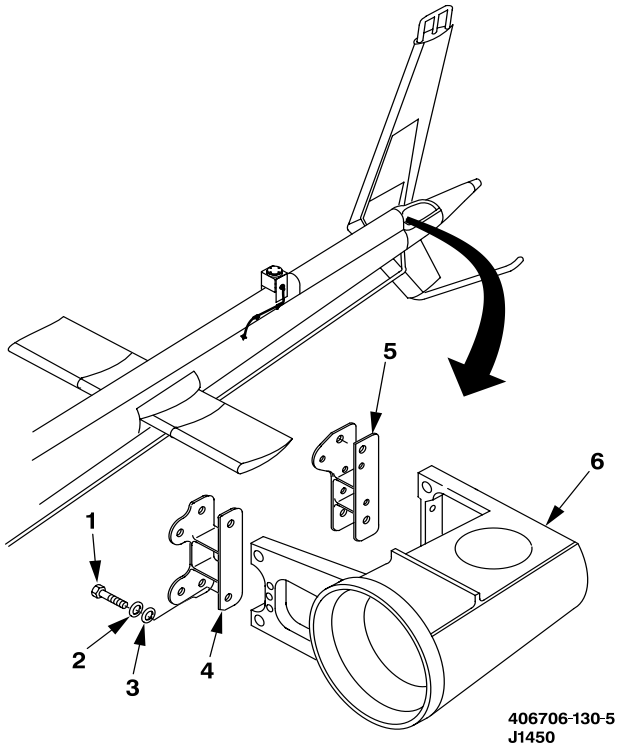
9. Remove excessive sealant.

INSPECT

FOLLOW-ON MAINTENANCE

Install fin support (pivotable) (Task 2-3-23).

Install fin assembly (Task 2-3-22).



END OF TASK

2-3-25. FOLDING HORIZONTAL STABILIZER UPPER SURFACE — CLEANING/INSPECTION

This task covers: Scheduled Cleaning and Inspection (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Magnifier (B95)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 1-1500-344-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-3-25. FOLDING HORIZONTAL STABILIZER UPPER SURFACE — CLEANING/INSPECTION (CONT)

REMOVE

1. If installed remove screws (1) and remove blade folding rack support bracket (2).

2. Remove screws (3) from upper support (4).

3. Remove 18 screws (5) (9 top, 9 bottom).

4. Remove three nuts (6), two special tapered washers (7), filler (8), and screws (9, 10, and 11).

5. Remove upper support (4).

6. Repeat steps 1. through 5. to remove upper support (4) on opposite side of tailboom.

INSPECT

7. Clean upper surface of horizontal stabilizer (12) with dry cleaning solvent (D199).

8. Apply equal weight of 10 to 25 pounds simultaneously to right and left outboard end of horizontal stabilizer (12).

9. Using a magnifier (B95), inspect upper surface of horizontal stabilizer (12) for cracks and loose or working rivets, paying particular attention to rivets in the spar, doublers, and hinges.

NOTE

If cracks or loose rivets are found, replace horizontal stabilizer.

INSTALL

10. Place upper support (4) in position.

11. Install three screws (9, 10, and 11), two special tapered washers (7), filler (8), and three nuts (6).

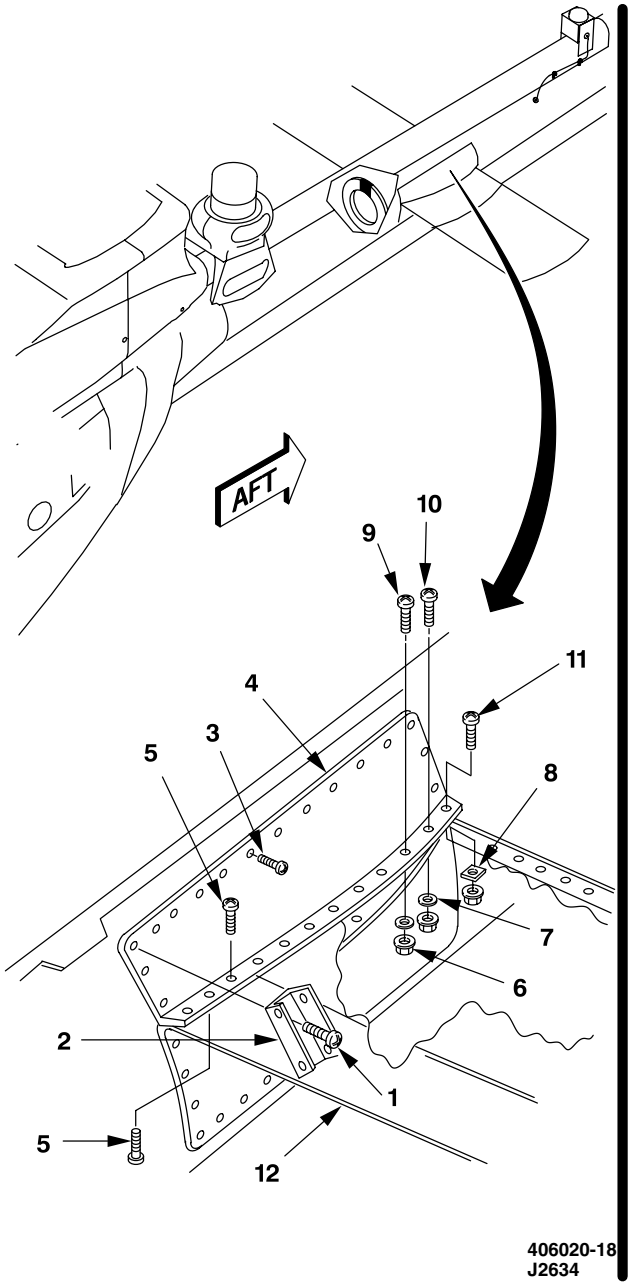
12. Install 18 screws (5) (9 top, 9 bottom).

13. Install screws (3).

14. If removed install blade folding rack support bracket (2) with screws (1).

15. Check and tighten all screws as required, to finish installation.

16. Repeat steps 10. through 15. to complete installation on opposite side of tailboom.



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J2634

END OF TASK

2-3-26. FOLDING HORIZONTAL STABILIZER — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)
Adhesive (D10)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 1-1500-344-23
TM 1-1520-266-23

GO TO NEXT PAGE

2-3-26. FOLDING HORIZONTAL STABILIZER — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

1. Ensure horizontal stabilizer is clean.

Drycleaning Solvent

2. Use wiping rags (D164) and drycleaning solvent (D199) to remove oil and grease from surfaces. Clean surfaces as required for inspection. Dry with wiping rags (D164).

INSPECT

3. Inspect rib (1), spoiler (2), and skin (3) for cracks, breaks, cuts, punctures, scoring, missing hardware, and loose or missing rivets. If crack in horizontal stabilizer is suspected perform eddy current inspection (TM 1-1520-266-23).

4. Inspect navigation light mount (4) for security of attachment, and condition and presence of sealant.

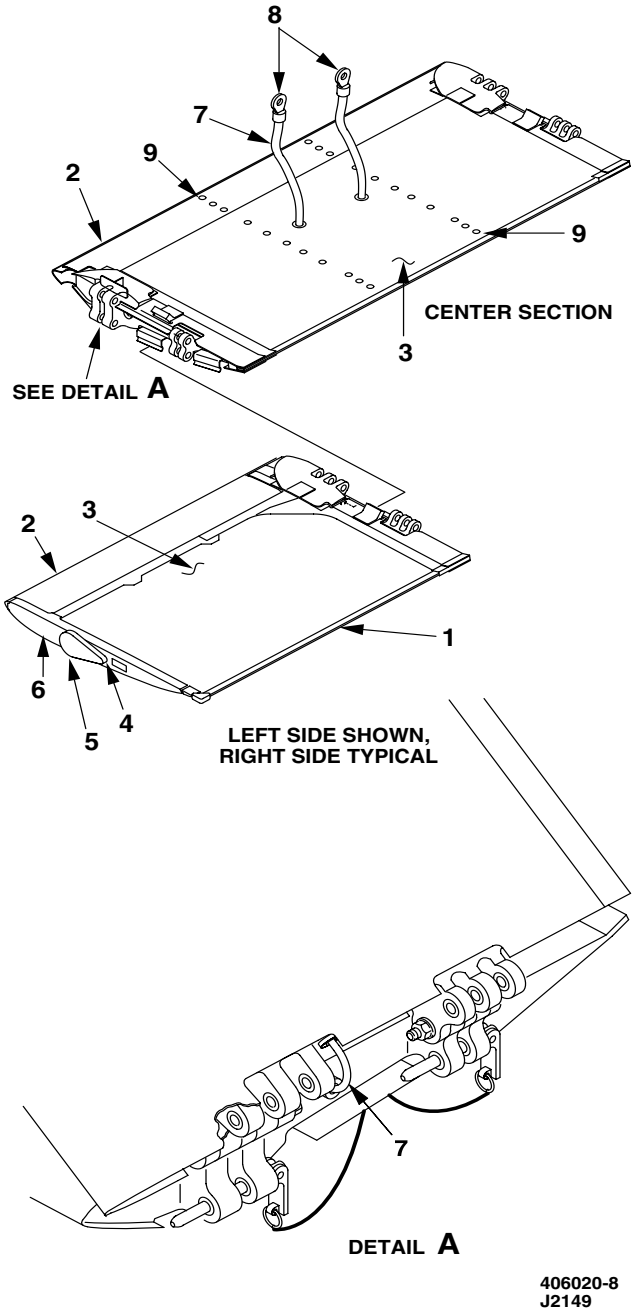
5. Inspect navigation light lens (5) for cracks, clarity, and security of attachment.

6. Inspect horizontal stabilizer tip weight assemblies (6) for security of attachment, presence of sealant at joint with horizontal stabilizer, nicks, scratches and gouges.

7. Inspect electrical wiring (7) for presence of clear spaghetti, integrity of insulation, and unnecessary stretching especially at hinge area.

8. Inspect wire terminals (8) for presence of insulators, security of attachment to electrical wires (7), and signs of metal fatigue.

9. Check for damage to all nutplates (9) top and bottom of horizontal stabilizer.



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2-3-26. FOLDING HORIZONTAL STABILIZER — CLEANING/INSPECTION/REPAIR (CONT)

10. Inspect for corrosion.

11. Inspect hinge area (Task 2-3-29).

12. Negligible damage limits:

a. Smooth dents that do not gouge surface are acceptable.

b. Smooth dents less than **3.00 inches** in diameter and **0.040 inch** deep are acceptable.

c. Dents closer than **1.00 inch** (edge to edge) are to be considered as one dent.

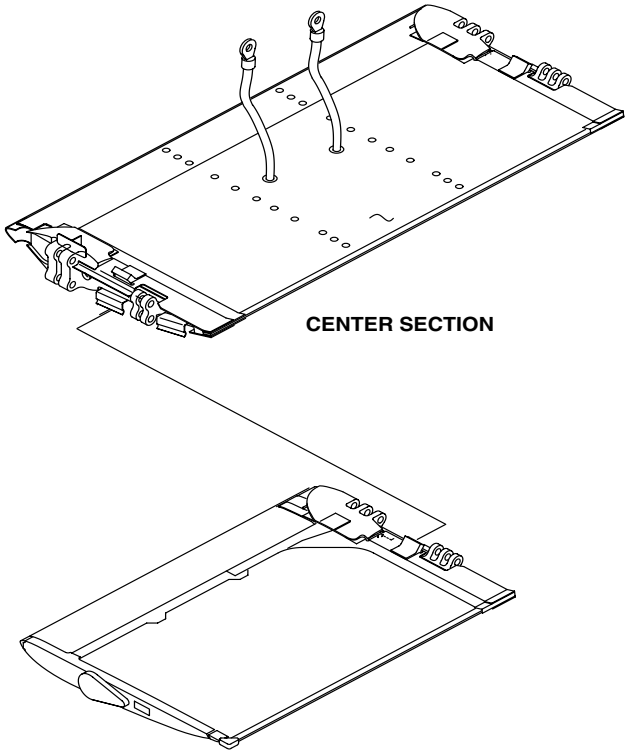
d. Following damage is classified as negligible and does not require repair other than blending area smooth, corrosion removal, treatment, and refinishing of repaired area (TM 1-1500-344-23).

(1) Nicks and scratches less than 10 percent of skin thickness and less than **2.00 inches** long should be blended out, provided they are not accompanied by creasing. Cumulative cleanup is limited to total skin thickness reduction of 10 percent.

(2) Corrosion less than 10 percent of material thickness after cleanup is acceptable. Cumulative cleanup is limited to total thickness reduction of 10 percent (10 percent of bay area for skin or 10 percent of the adjoining area).

13. Reparable damage limits:

a. Ribs and spars are not reparable and must be replaced if negligible damage limits are exceeded.



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b. Skin damage between ribs, which exceeds negligible damage, may be repaired by patching.

(1) Damage area is limited to 10 percent of the skin area between adjacent ribs.

(2) There must be a minimum of **8.00 inches** between damage areas.

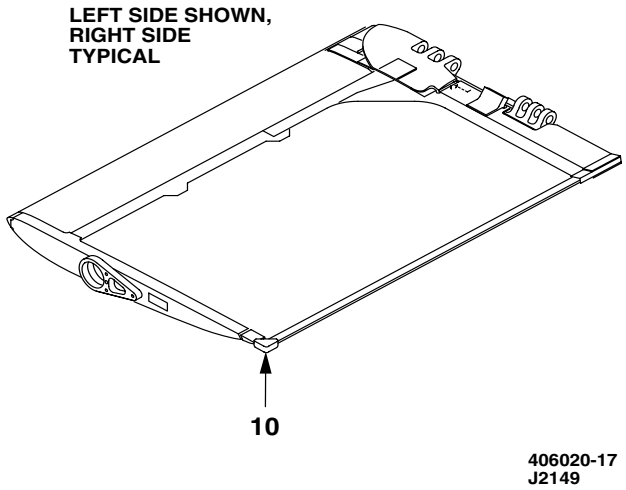
(3) There can be only one damage area between any two adjacent ribs.

(4) Edge of cleanup of damage area must be at least **1.00 inch** from ribs or spar.

(5) Total damage to stabilizer is less than 10 percent of total skin area.

c. Replace loose or missing fasteners or hardware.

14. Replace horizontal stabilizer with damage exceeding the above limits.



REPAIR

15. Repairs for cracks, cuts, punctures, missing hardware, damaged fasteners, and loose and missing rivets should be accomplished using accepted sheet metal practices (TM 1-1500-204-23).

Adhesive

16. If caps (10) are loose or missing from horizontal stabilizer: Install caps (10) using adhesive (D10). Apply to both surfaces. Press two coated surfaces together and maintain firm contact pressure until handling strength has been obtained. Cure for 24 hours.

INSPECT

END OF TASK

2-3-27. FOLDING HORIZONTAL STABILIZER — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-3-27. FOLDING HORIZONTAL STABILIZER — REMOVAL/INSTALLATION (CONT)

REMOVE

1. If installed remove screws (1) and remove blade folding rack support bracket (2).

2. Remove screws (3) from upper support (4).

3. Remove 18 screws (5) (9 top, 9 bottom).

4. Remove three nuts (6), two special tapered washers (7), filler (8), and screws (9, 10, and 11).

5. Remove upper support (4).

6. Repeat steps 1. through 5. to remove upper support (4) on opposite side of tailboom.

7. Loosen capnut (12) and remove cover assembly (13) from terminal block (14).

CAUTION

To prevent possible short to ground of electrical wires (16 and 17), insulator shall be left on terminal block.

8. Remove nut (15) and four wires (16 and 17) from position light terminal.

CAUTION

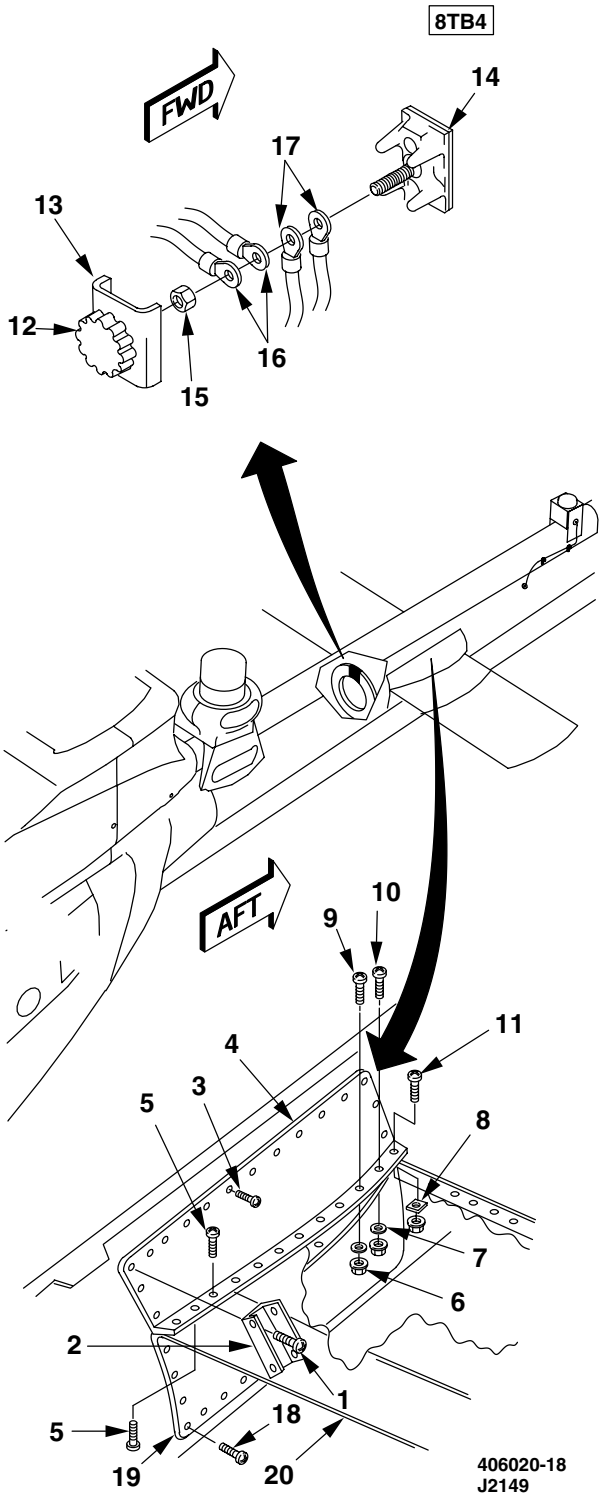
To prevent damage to horizontal stabilizer, care shall be exercised to prevent it from falling or resting on the tailboom as screws are removed from lower support assemblies.

9. Remove screws (18) from lower support (19).

10. Remove lower support (19).

11. Repeat step 9. to remove lower support (19) on opposite side of tailboom.

12. Remove horizontal stabilizer (20).



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2-3-27. FOLDING HORIZONTAL STABILIZER — REMOVAL/INSTALLATION (CONT)

INSTALL

CAUTION

To prevent damage to helicopter, care shall be taken not to damage surface of horizontal stabilizer (20).

13. Place horizontal stabilizer (20) in tailboom.

14. Attach position light wires (16 and 17) to terminal block (14) and install nut (15).

15. Place cover assembly (13) on terminal block (14) and tighten capnut (12).

16. Place lower support (19) in position.

17. Install screws (18).

18. Repeat steps 16. and 17. to install opposite side support (19).

19. Prepare mating surfaces of upper support (4) and tailboom to ensure Class S electrical bonding (Appendix M).

20. Place upper support (4) in position.

21. Install three screws (9, 10, and 11), two special tapered washers (7), filler (8), and three nuts (6).

22. Install 18 screws (5) (9 top, 9 bottom).

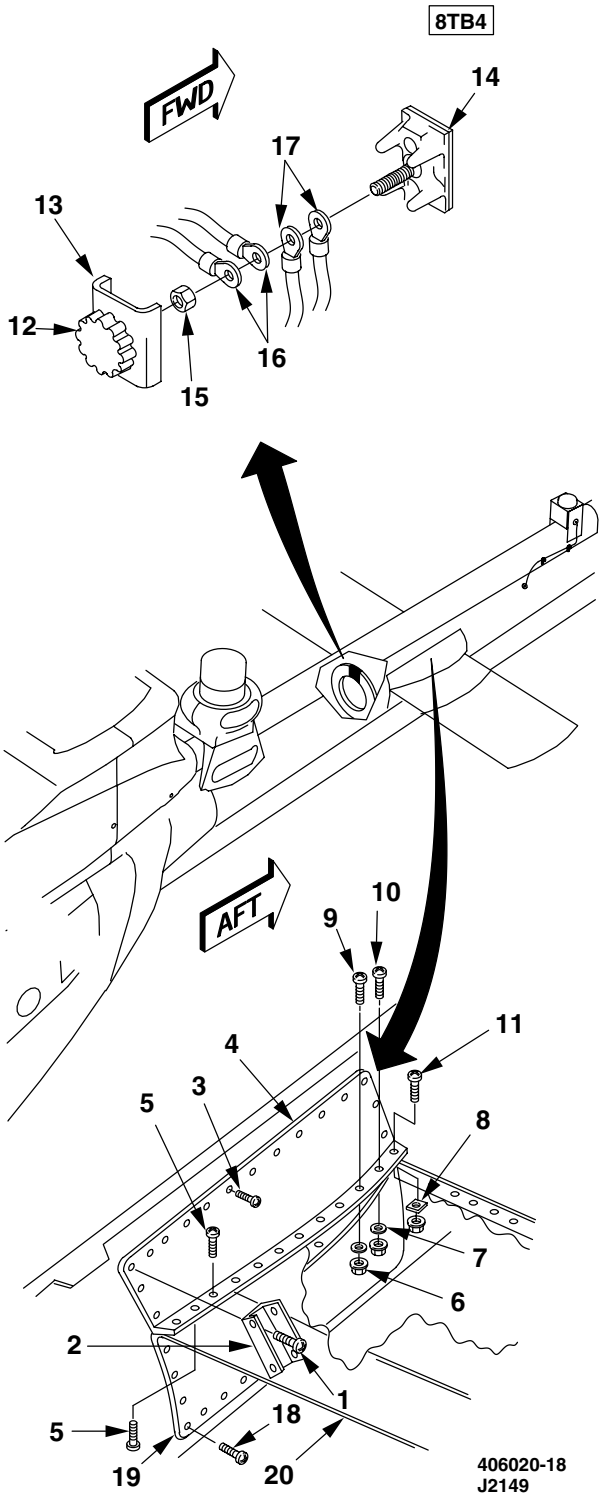
23. Install screws (3).

24. If removed install blade folding rack support bracket (2) with screws (1).

25. Check and tighten all screws as required, to finish installation.

26. Repeat steps 19. through 25. to complete installation on opposite side of tailboom.

INSPECT



END OF TASK

2-3-28. LEFT/RIGHT HORIZONTAL STABILIZER — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B181)
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-3-28. LEFT/RIGHT HORIZONTAL STABILIZER — REMOVAL/INSTALLATION (CONT)

REMOVE

1. If installed remove screws (1) and remove blade folding rack support bracket (2).

2. Remove screws (3) from upper support (4).

3. Remove nine screws (5) from top of horizontal stabilizer (6).

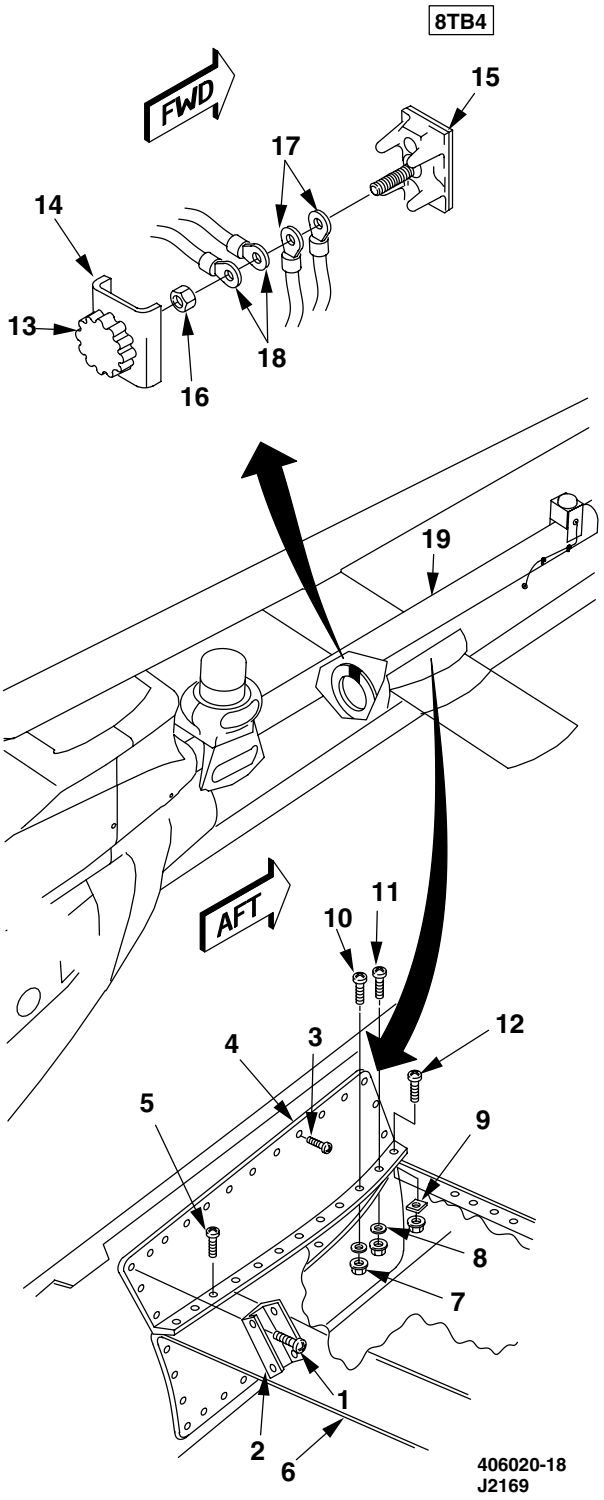
4. Remove three nuts (7), two special tapered washers (8), filler (9), and screws (10, 11, and 12).

5. Remove upper support (4).

6. Loosen capnut (13) and remove cover (14) from terminal block (15).

7. Remove nut (16) and four wires (17 and 18) from position light terminal.

8. Repeat steps 1. through 5. to remove upper support (4) on right side of tailboom (19).



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2-3-28. LEFT/RIGHT HORIZONTAL STABILIZER — REMOVAL/INSTALLATION (CONT)

9. To facilitate reinstallation, attach one end of **4-foot** length of lockwire (D132) to wire (18) on end of position light terminal for left or right side of horizontal stabilizer as required.

10. Remove pins (20).

11. Remove lockwire from washers (21)

12. Remove cotter pins (22) and washers (21).

CAUTION

- To prevent damage to position light wires or terminal, care shall be taken when removing left or right side horizontal stabilizer, or terminal may be pulled off as wire passes through grommets of internal ribs.
- To prevent damage to left or right section of horizontal stabilizer, the stabilizer section will require support as it is removed.

NOTE

If lockwire is pulled out of center section of horizontal stabilizer completely, it will be extremely difficult or impossible to reinsert it.

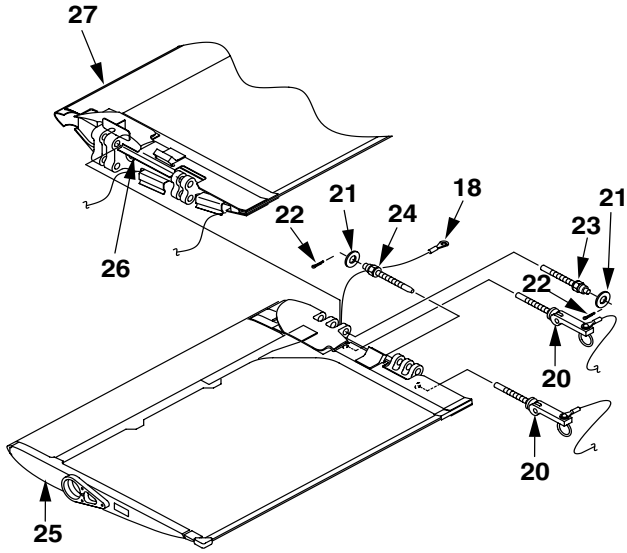
13. Remove pins (23 and 24) and remove left or right section of horizontal stabilizer (25).

NOTE

Outboard grommet (26) can be removed, if required, to permit seeing the terminal as it is withdrawn.

14. Withdraw wire (18) from center section of horizontal stabilizer (27), keeping tension on guide lockwire to hold position light terminal in alignment for best passage through interior grommets.

15. Remove lockwire from terminal of wire and leave it inserted in the center section of horizontal stabilizer (27) to use as wire fish line during installation.



LEFT SIDE SHOWN
RIGHT SIDE TYPICAL

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GO TO NEXT PAGE

2-3-28. LEFT/RIGHT HORIZONTAL STABILIZER — REMOVAL/INSTALLATION (CONT)

INSTALL

16. If outboard grommet (26) was removed, install grommet on wire (18) before threading wire through center section of horizontal stabilizer (27).

17. Tie lockwire (D132) left in center section of horizontal stabilizer (27) to wire (18) on end of position light terminal for left or right side of horizontal stabilizer as required.

18. Stagger grooves of longer pin (23) and shorter pin (24) and align hinges of left or right section of horizontal stabilizer (25) with center section of horizontal stabilizer (27).

19. Insert pins (23 and 24).

20. Hold pins (23 and 24) securely. Torque pins **30 TO 50 INCH–POUNDS**.

21. Install washers (21) and lockwire (D132).

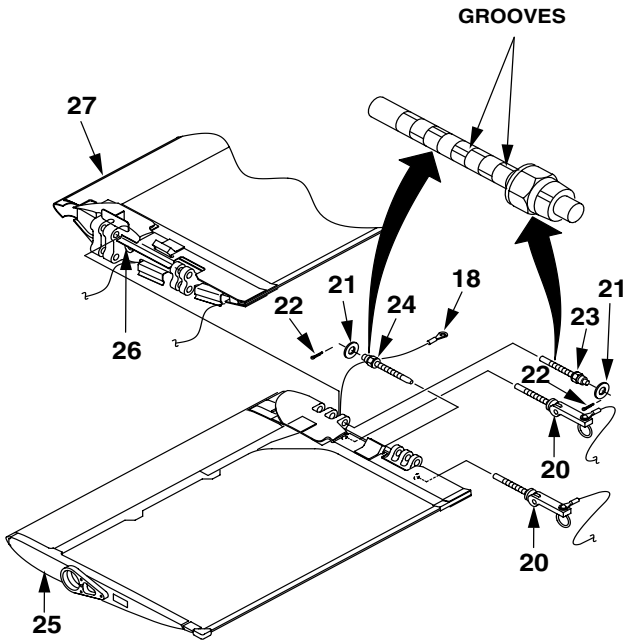
22. Install cotter pins (22) through pins (23 and 24).

CAUTION

To prevent damage to light wire (18), wire shall be hand held from inboard of center section of horizontal stabilizer (27).

23. Place left or right section of horizontal stabilizer (25) in folded or up position, and pull position light wire (18) into center section of horizontal stabilizer (27).

24. Install pins (20).



LEFT SIDE SHOWN
RIGHT SIDE TYPICAL

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GO TO NEXT PAGE

25. Attach position light wires (17 and 18) to terminal block (15) and install nut (16).

26. Place cover (14) on terminal block (15) and tighten capnut (13).

27. Prepare mating surfaces of upper support (4) and tailboom (19) to ensure Class S electrical bonding (Appendix M).

28. Place upper support (4) in position.

NOTE

For ease of alignment of components, screws may be started, but not tightened yet.

29. Install three screws (10, 11, and 12), two special tapered washers (8), filler (9), and three nuts (7).

30. Install nine screws (5).

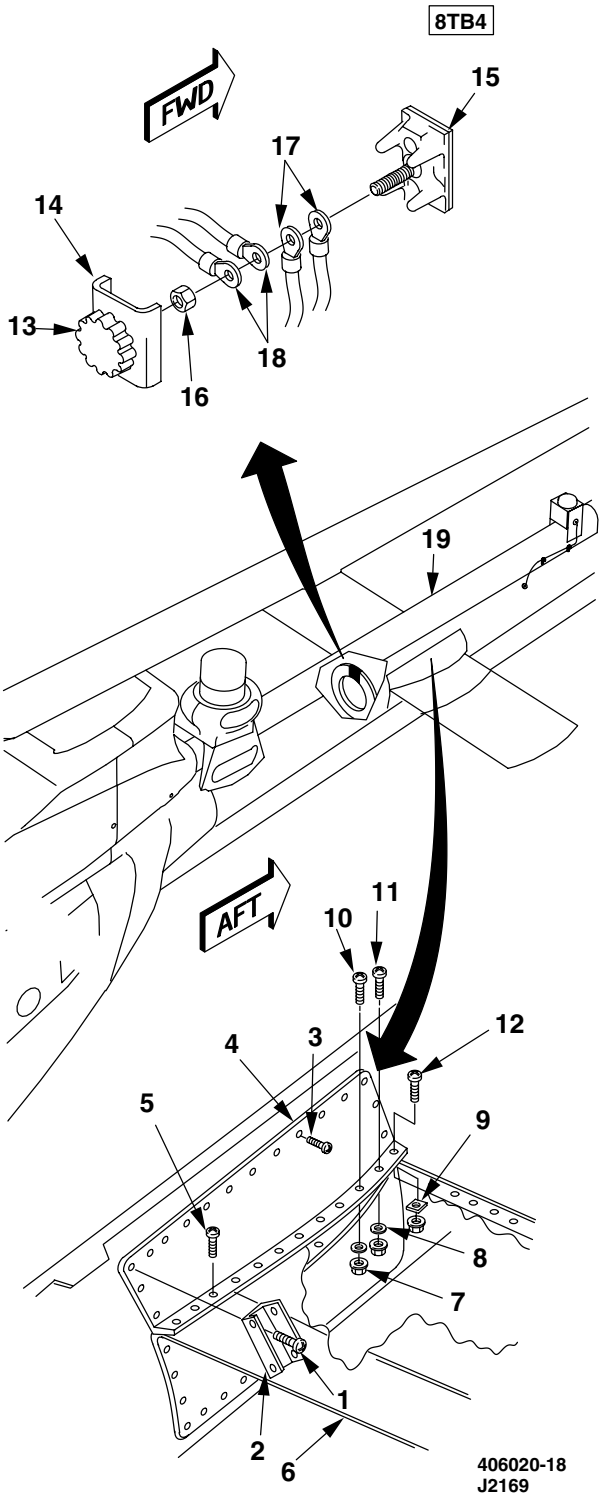
31. Install screws (3) in upper support (4).

32. If removed install screws (1) attaching blade folding rack support bracket (2).

33. Tighten all screws to finish installation.

34. Repeat steps 27. through 33. to install upper support (4) on opposite side of tailboom (19) as required.

INSPECT



END OF TASK

2-3-29. FOLDING HORIZONTAL STABILIZER HINGE AREA — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair of Hinge Area (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Spring Scale (B122)

Material:
Mild Soap (D193)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 55-1500-323-24

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Horizontal Stabilizer Folded (Task 1-7-7)

GO TO NEXT PAGE

2-3-29. FOLDING HORIZONTAL STABILIZER HINGE AREA — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

NOTE

All maintenance procedures will be accomplished in accordance with TM 1-1500-204-23.

1. Clean horizontal stabilizer with mild soap (D193) and water.

2. Dry with clean wiping rag (D164).

INSPECT

3. Inspect lug area for the following:

a. Inspect pins (1) for nicks, scratches and cracks.

b. Inspect pin (1) lanyards for fraying, and attachment security.

c. Inspect hinge bolts (2) for binding and security (cotter pinned and lockwired).

d. Check force required to set pins (1) in locked position using spring scale (B122).

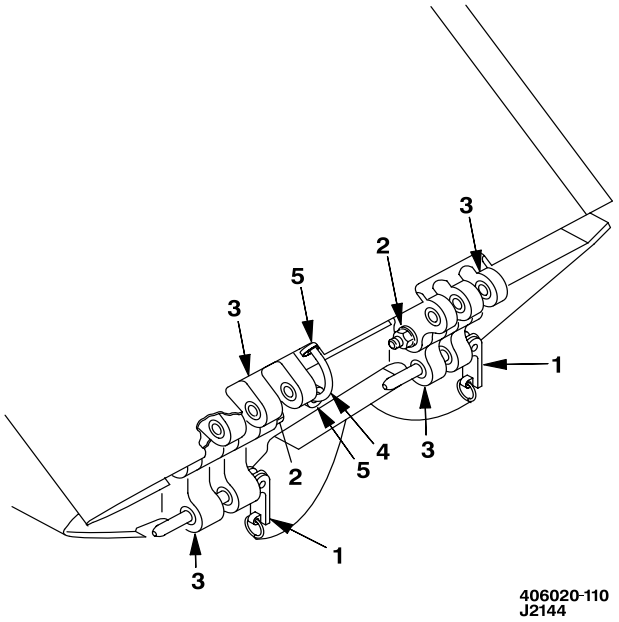
NOTE

A force of 30 TO 40 POUNDS is required to set pin handles in locked position.

4. Visually inspect fittings (3) for nicks, scratches, gouges, worn bushings and cracks.

5. Check fittings (3) for looseness or binding.

6. Inspect electrical wiring (4) and grommets (5) for deterioration.



7. Inspect folding horizontal stabilizer hinge area. Refer to figure Folding Horizontal Stabilizer Hinge Area — Damage Limits.

REPAIR

8. Replace broken or worn pins (1).

9. Replace broken or worn bolts (2).

10. Replace unserviceable fittings (3).

11. Replace worn or damaged hardware to eliminate looseness or binding.

12. Replace deteriorated wiring (4) and grommets (5) (TM 1-1500-323-24).

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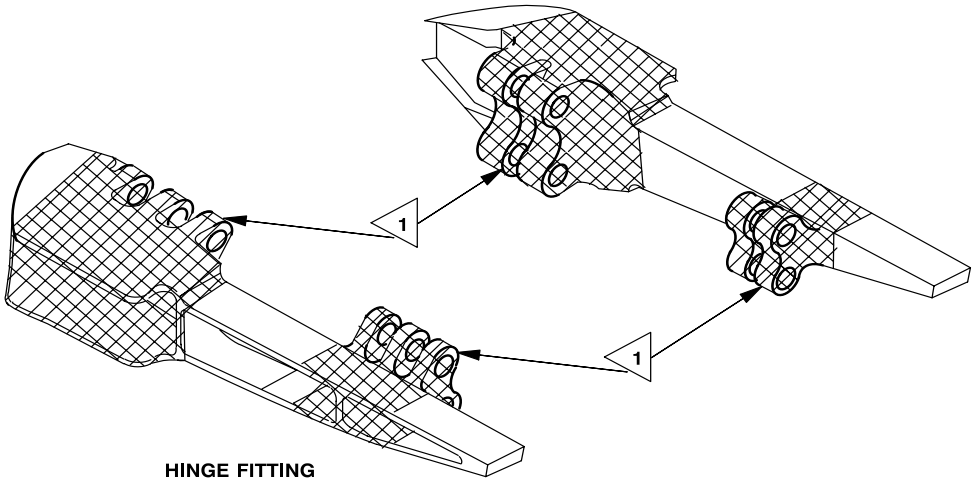
2-3-29. FOLDING HORIZONTAL STABILIZER HINGE AREA — CLEANING/INSPECTION/REPAIR (CONT)



HINGE FITTING
406-030-227

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	0.01	0.02
CORROSION 2	0.005 Before repair 0.01 after repaIr	0.01 Before repair 0.02 after repaIr
MAXIMUM AREA PER FULL DEPTH REPAIR 3	0.38 sq. in.	0.50 sq. in.
NUMBER OF REPAIRS	One per area	4
EDGE CHAMFER	0.060 X 45°	0.040 X 45°
BORE DAMAGE: 1	0.003 for 1/2 circumference	N/A

NOTES:

1. Above thIs lImIt, remove and replace bushIng.
2. Corrosion damage must be cleaned up to twice damage depth.
3. No overlapping repairs permitted.
4. Damage areas must be at least 1.25 In. apart.
5. No cracks are permitted.
6. All dimensions are in inches.

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Folding Horizontal Stabilizer Hinge Area — Damage Limits

END OF TASK

2-3-30. TAILLIGHT SUPPORT — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Rubber Gloves (D111)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-3-30. TAILLIGHT SUPPORT — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Clean taillight support (1) with wiping rag (D164) dampened with drycleaning solvent (D199).

INSPECT

2. Inspect taillight support (1) for cracks, nicks, and scratches.

3. Inspect taillight support (1) for security of taillight (2) and attaching hardware.

4. Inspect taillight support (1) for missing or deteriorated grommet (3).

5. Inspect flame spray coating for chipping.

6. Reparable damage limits:

a. Nicks are limited to 10 percent of support thickness maximum depth with damaged area lying in **0.250 inch** diameter circle.

b. Cracks are limited to **0.500 inch** in length.

c. No damage allowed in areas of fasteners and cutouts.

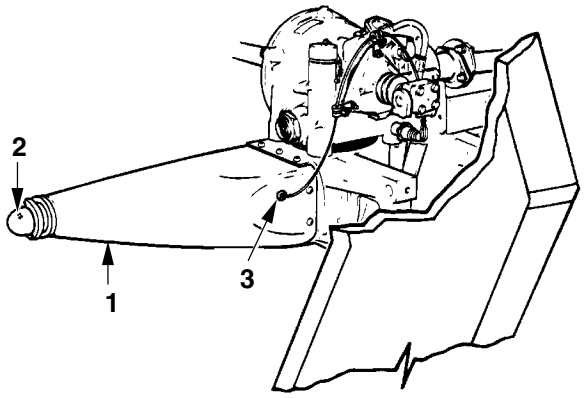
d. Scratches are limited to 10 percent of support thickness. Maximum length of **2.00 inches**.

REPAIR

7. Repair superficial cracks, nicks, and scratches in accordance with TM 1-1500-204-23.

NOTE

If repairs to support are such that repair cannot be accomplished with support on helicopter, support shall be removed (Task 2-3-31).



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8. Replace missing or deteriorated grommet (3).

9. Replace taillight support (1) if damage limits are exceeded.

INSPECT

END OF TASK

2-3-31. TAILLIGHT SUPPORT — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Electrical Repairer Tool Kit (B177)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68F Aircraft Electrician

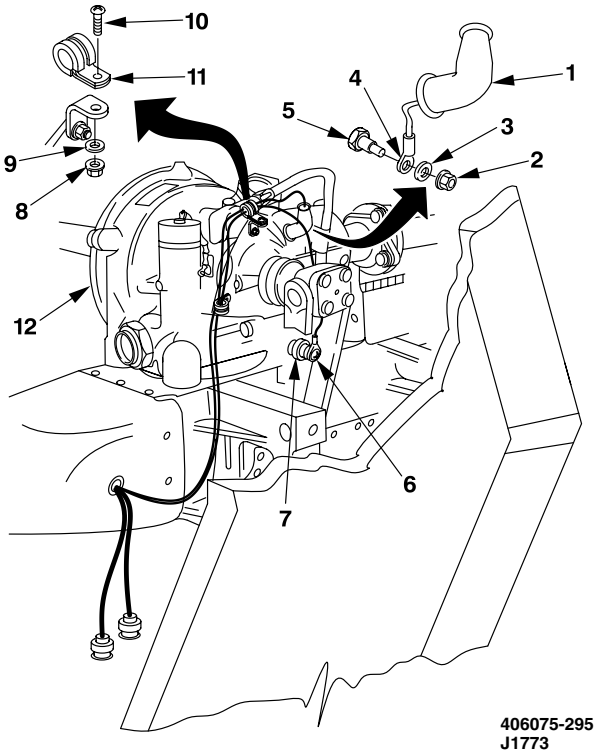
Equipment Condition:
Helicopter Safed (Task 1-6-7)
Electrical Power Removed (Tasks 1-6-5 and 1-6-6)

REMOVE

1. Move nipple (1) back and remove nut (2) and washer (3) securing wire terminal (4) to temperature switch (5).

2. Disconnect electrical connector (6) from chip detector (7).

3. Remove two nuts (8), two washers (9), and two screws (10) securing two clamps (11) to tail rotor gearbox (12).



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2-3-31. TAILLIGHT SUPPORT — REMOVAL/INSTALLATION (CONT)

4. Remove nine screws (13) and nine washers (14) securing support (15) to tailboom (16).

5. Remove taillight support (15).

NOTE

One to three washers (17) are located between taillight support (15) and mount at bottom mount screw hole. Washer(s) (17) shall be saved for installation.

6. Disconnect electrical splices (18).

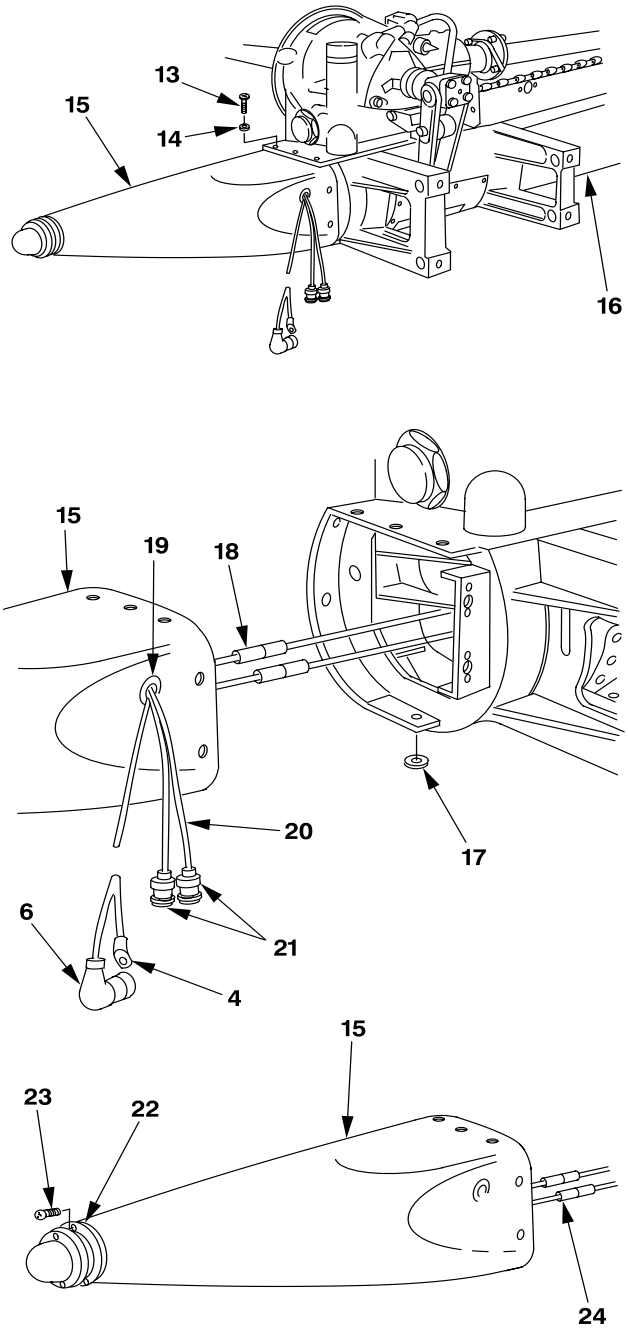
7. Remove grommet (19).

8. Pull three wires (20) with connectors (6 and 21) and terminal (4) through support (15).

9. Remove tail position light (Task 9-5-10).

10. Remove tail position light mounting bracket (22) from support (15) by removing two screws (23).

11. Remove wiring (24) from support (15).



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2-3-31. TAILLIGHT SUPPORT — REMOVAL/INSTALLATION (CONT)

INSTALL

12. Prepare mating surfaces for Class R-I electrical bond (Appendix M).

13. Install wiring (24) in support (15).

14. Install tail position light mounting bracket (22) on support (15) and secure with two screws (23).

15. Install tail position light (Task 9-5-11).

16. Install grommet (19) in support (15).

17. Insert three wires (20) with connectors (6 and 21) and terminal (4) through grommet (19).

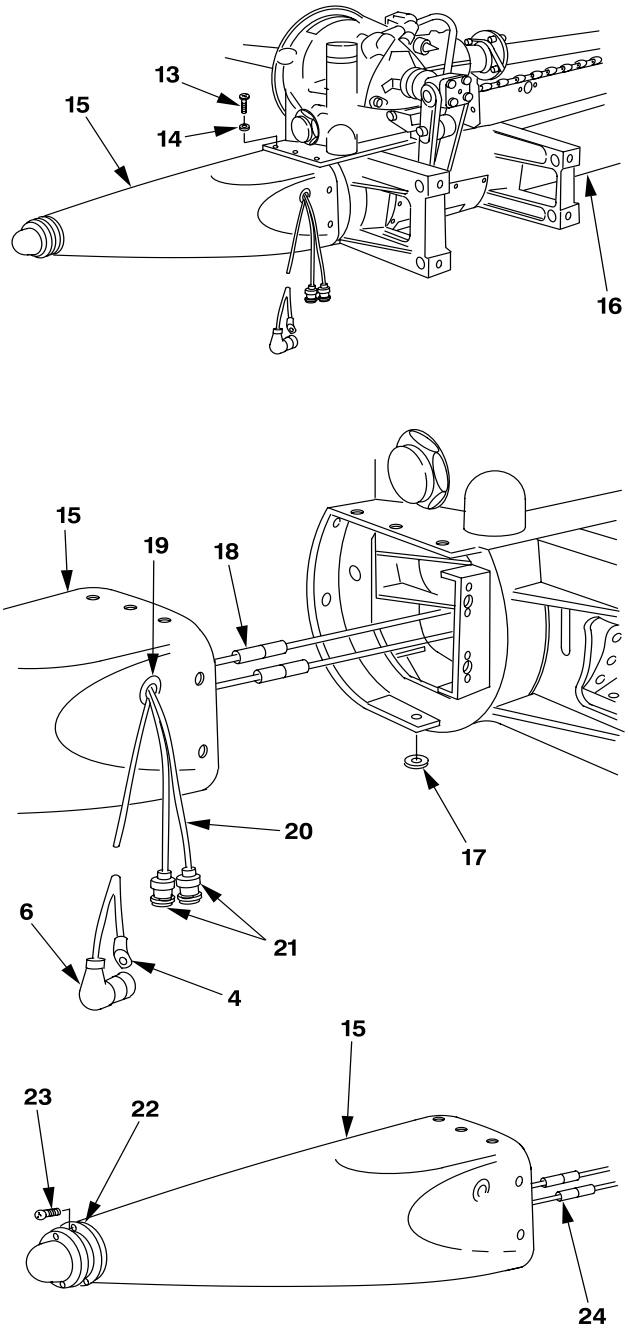
18. Connect two electrical splices (18).

19. Position taillight support (15) into place.

20. Insert washer(s) (17) between taillight support (15) and mount aligned with bottom screw hole. Maximum of three washers to provide maximum gap of **0.025 inch** between taillight support (15) and mount.

21. Secure support (15) to tailboom (16) with nine screws (13) and nine washers (14).

22. Check for Class R-1 electrical bond between support (15) and tailboom (16) (Appendix M).



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2-3-31. TAILLIGHT SUPPORT — REMOVAL/INSTALLATION (CONT)

23. Secure two clamps (11) to tail rotor gearbox (12) with two screws (10), two washers (9), and two nuts (8).

24. Connect electrical connector (6) to chip detector (7).

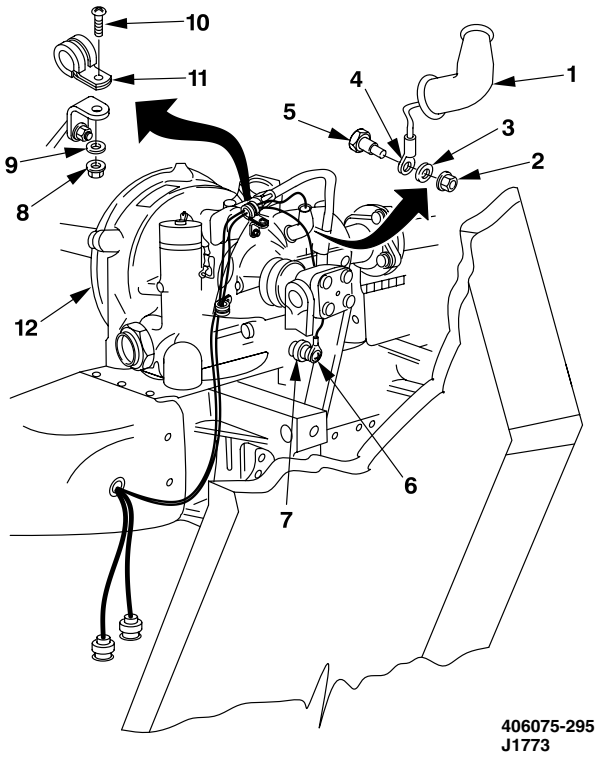
25. Secure wire terminal (4) to temperature switch (5) with washer (3) and nut (2).

26. Cover nut (2) and washer (3) on temperature switch (5) with nipple (1).

INSPECT

FOLLOW-ON MAINTENANCE

Perform operational check (Task 9-5-11).



END OF TASK

Section IV. PYLON

2-10. PYLON

2-11. INTRODUCTION

This section contains: maintenance procedures for cleaning, inspection, repair, removal and installation of pylon, corner mount, stop down, mount bolt, forward beam, and aft transverse beam. Also includes procedures for removal and installation of cap, spring, and rod end for transmission spring assemblies. Standard torques are provided in Appendix P and TM 1-1500-204-23.

2-12. TASK LIST

This task list consists of those tasks required to support unit and intermediate level maintenance.

LIST OF TASKS

2-4-1. PYLON — CLEANING/INSPECTION

This task covers: Cleaning and Inspection (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Maintenance Stand (B162)

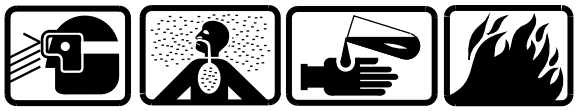
Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1500-344-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Forward Fairing Removed (Task 2-2-47)
Air Induction Cowl Removed (Task 4-2-1)

CLEAN



Drycleaning Solvent

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of pylon. Clean as required for inspection.

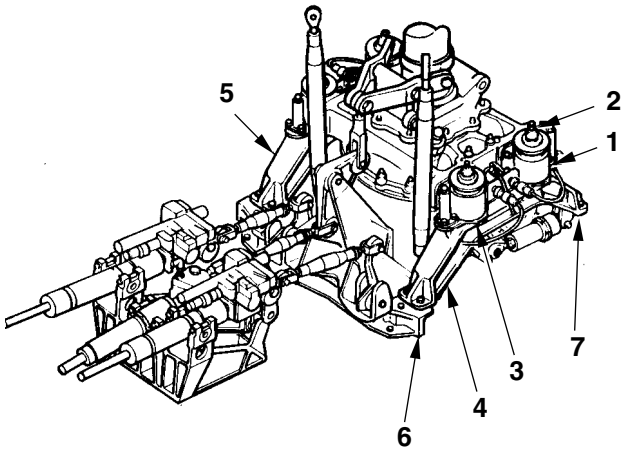
2. Use wiping rags (D164) to dry surfaces of pylon.

INSPECT

3. Inspect four corner mounts (1) (Task 2-4-4).

4. Inspect stop nut (2) on each corner mount (1) for wear, looseness, and other damage (Task 2-4-5).

5. Inspect two stop-down assemblies (3) for wear, gouges, scoring, cracks, breaks, and other damage (Task 2-4-6).



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2-4-1. PYLON — CLEANING/INSPECTION (CONT)

6. Inspect for worn, loose, and missing hardware.

7. Inspect following for corrosion (TM 1-1500-344-23):

a. Corner mounts (1) (Task 2-4-4).

b. Stop nuts (2) (Task 2-4-5).

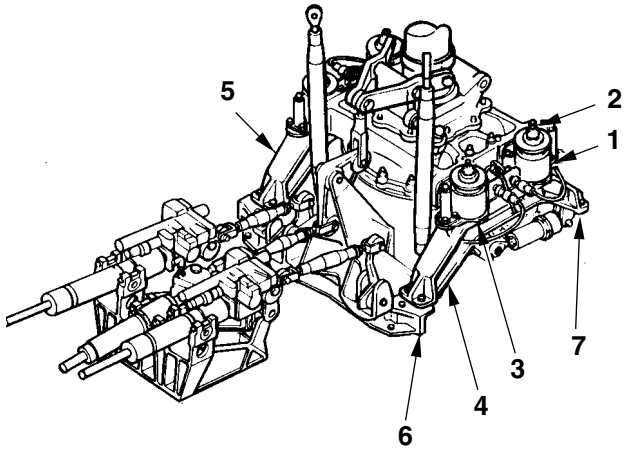
c. Stop-down assemblies (3) (Task 2-4-6).

d. Left beam assembly (4) (Task 2-4-7).

e. Right beam assembly (5) (Task 2-4-7).

f. Forward transverse beam (6) (Task 2-4-10).

g. Aft transverse beam (7) (Task 2-4-11).



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FOLLOW-ON MAINTENANCE

Install air induction cowl (Task 4-2-4).

Install forward fairing (Task 2-2-47).

END OF TASK

2-4-2. CORNER MOUNT/STOP NUT/STOP-DOWN ASSEMBLY — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

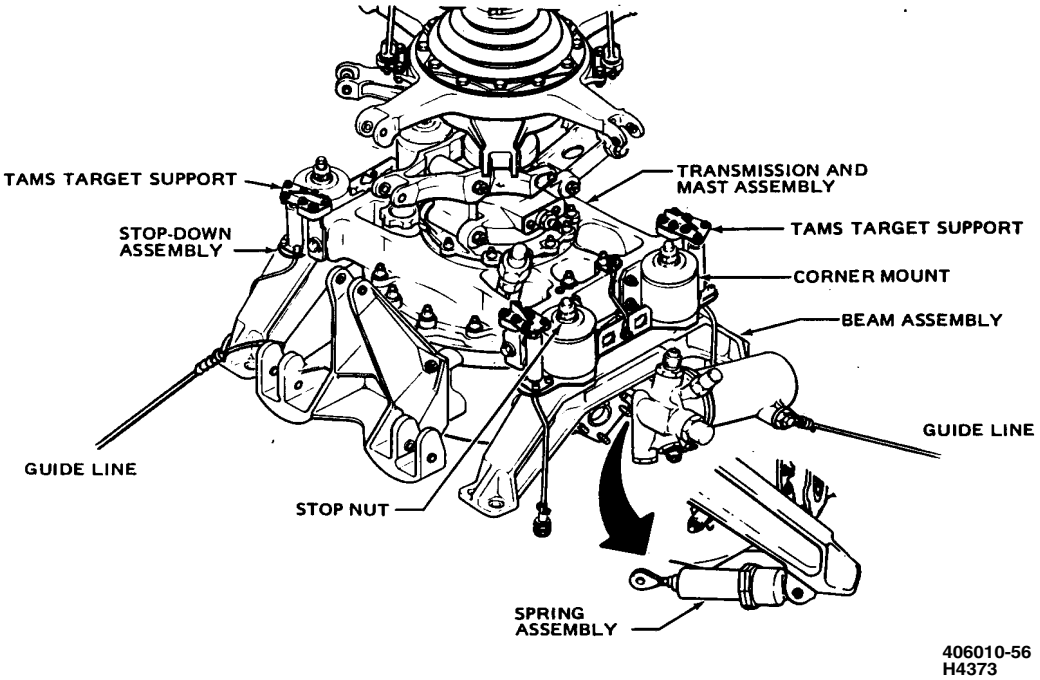
Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Crowfoot (B28)
Vise Jaw Caps (B15)
Machine Vise Table (B211)
Protractor (B109)
Torque Wrench (B240)
Torque Wrench (B233)
Torque Wrench (B242)
Hoist (B69)
Lifting Eye Clevis (B19)
Mast Lifting Clevis (B20)
Rope (B118) (2)

Material:
Sealant (D181)
Sealing Compound (D186)
Lockwire (D131)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (3)

Equipment Condition:
Electrical Power Removed (Tasks 1-6-5 and 1-6-6)
Transmission Removed (Task 6-3-2)



Corner Mount/Stop Nut/Stop Down Assembly

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2-4-2. CORNER MOUNT/STOP NUT/STOP-DOWN ASSEMBLY — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Attach mast lifting clevis (B20) and lifting eye clevis (B19) to top of transmission and hoist.

WARNING

To prevent injury to personnel, do not stand or place hands and feet under suspended transmission and pylon parts.

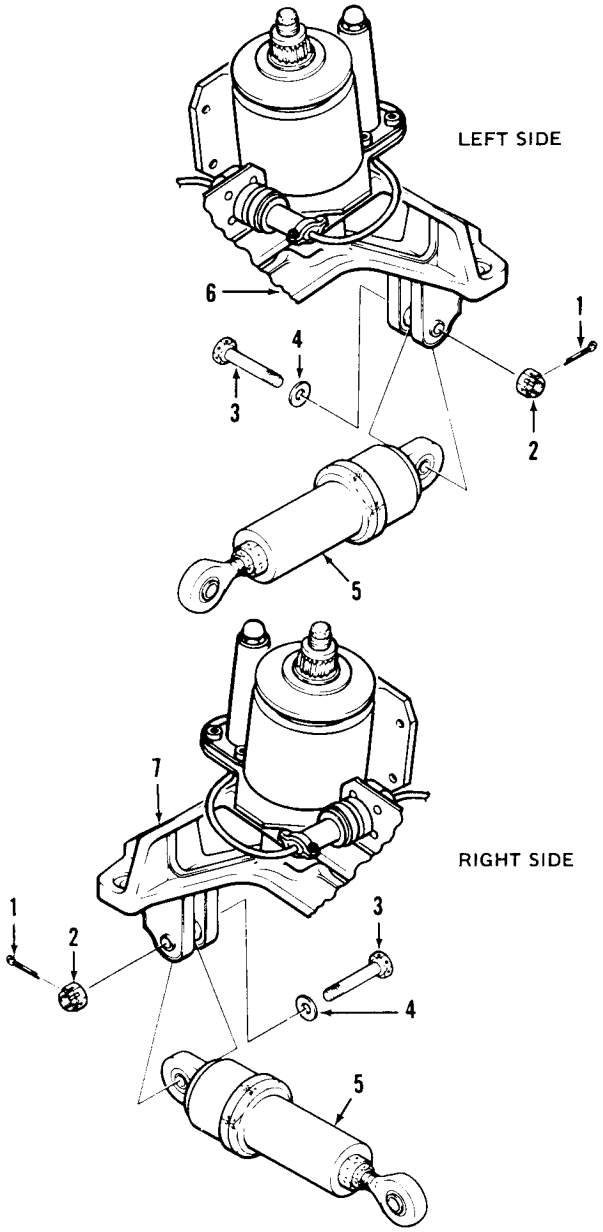
2. Use two guide lines (B118) to steady transmission and pylon parts while suspended.

3. Remove cotter pin (1), nut (2), bolt (3), and washer (4). Discard cotter pin.

4. Remove spring assembly (5) from beam assembly (6) on left side.

5. Remove cotter pin (1), nut (2), bolt (3), and washer (4). Discard cotter pin.

6. Remove spring assembly (5) from beam assembly (7) on right side.



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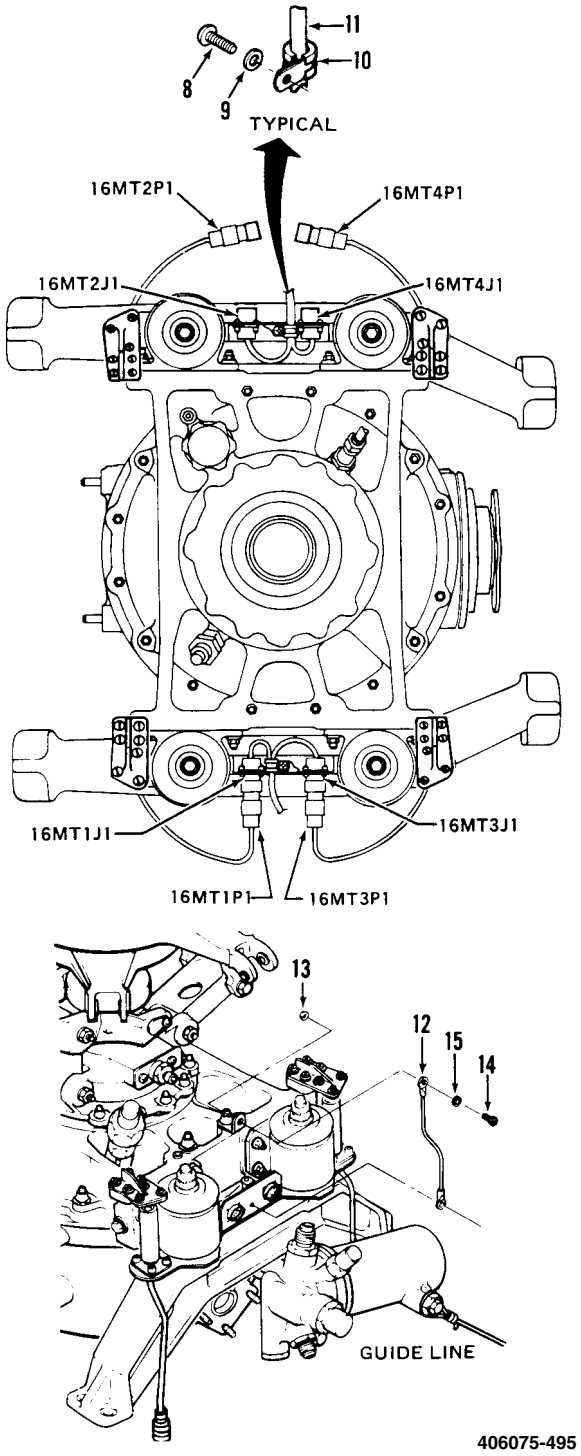
2-4-2. CORNER MOUNT/STOP NUT/STOP-DOWN ASSEMBLY — REMOVAL/INSTALLATION (CONT)

7. Disconnect electrical connectors (16MT1P1, 16MT3P1, 16MT2P1, and 16MT4P1).

8. Remove screw (8) and washer (9) from clamp (10). Remove electrical cable (11).

9. Remove electrical receptacles (16MT1J1, 16MT3J1, 16MT2J1, and 16MT4J1).

10. Remove one ground strap (12) from each side of transmission. For each ground strap (12) remove two nuts (13), two screws (14), and two washers (15).



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2-4-2. CORNER MOUNT/STOP NUT/STOP-DOWN ASSEMBLY — REMOVAL/INSTALLATION (CONT)

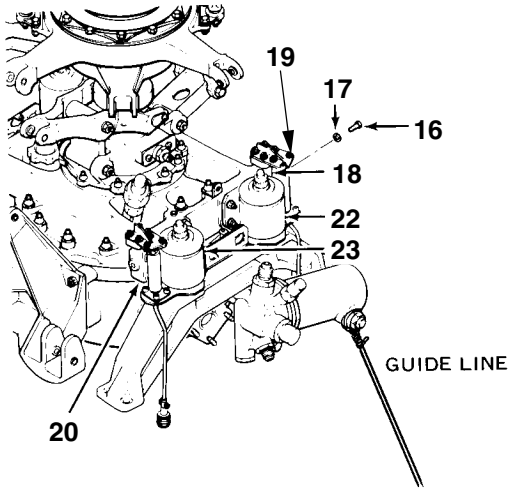
11. Remove bolt (16) and washer (17) for each TAMS target lower support (18).

12. Remove lockwire from screws (19) that attach top target support to TAMS target plate.

13. Remove four screws (19) each attaching top target supports to two TAMS target lower supports (18) and two TAMS target lower supports (20).

14. Remove two TAMS target lower supports (18) and two TAMS target lower supports (20) from transmission (21).

15. Remove two corner mounts (22) and two corner mounts (23) from transmission (21).



WARNING

To prevent injury to personnel from falling parts when corner mounts are removed from transmission, beam assemblies, corner mounts, and related parts shall be supported.

NOTE

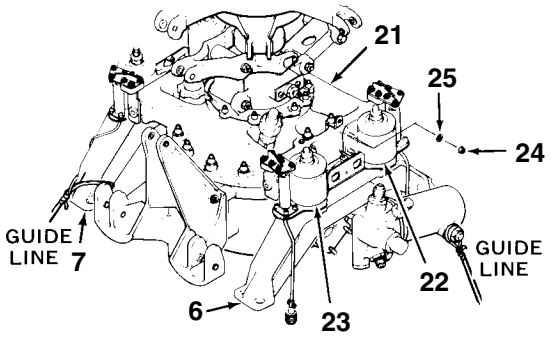
Top target support and TAMS target plate remain attached to each TAMS target lower support.

16. Support beam assemblies (6 and 7).

17. Remove four nuts (24) and four washers (25) from each corner mount (22 and 23).

18. Remove beam assemblies (6 and 7), corner mounts (22 and 23), TAMS target lower supports (18 and 20), and related parts.

19. Attach guide line (B118) to transmission (21). Steady transmission while suspended by hoist.



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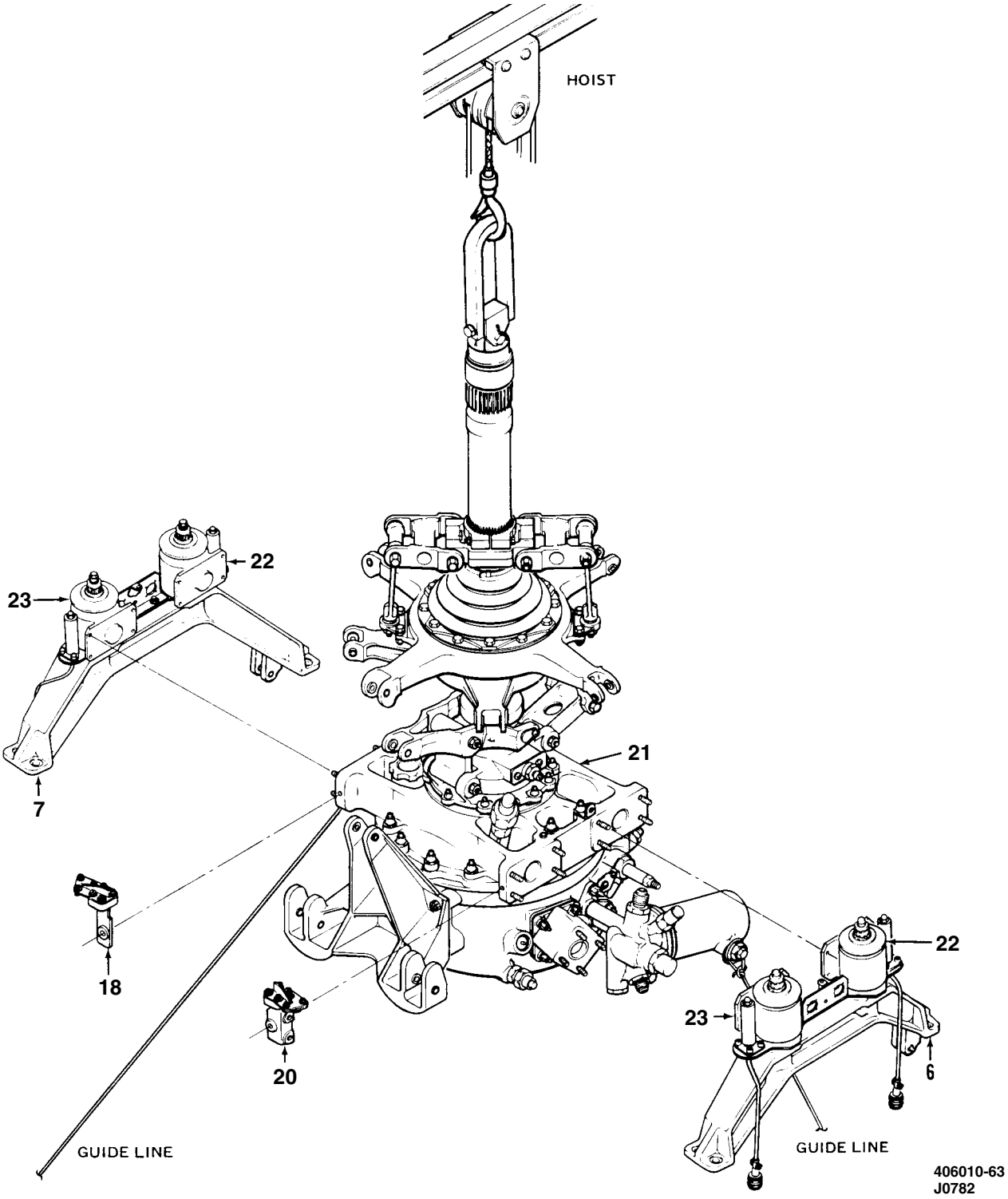
2-4-2. CORNER MOUNT/STOP NUT/STOP-DOWN ASSEMBLY — REMOVAL/INSTALLATION (CONT)



Transmission — Removal

GO TO NEXT PAGE

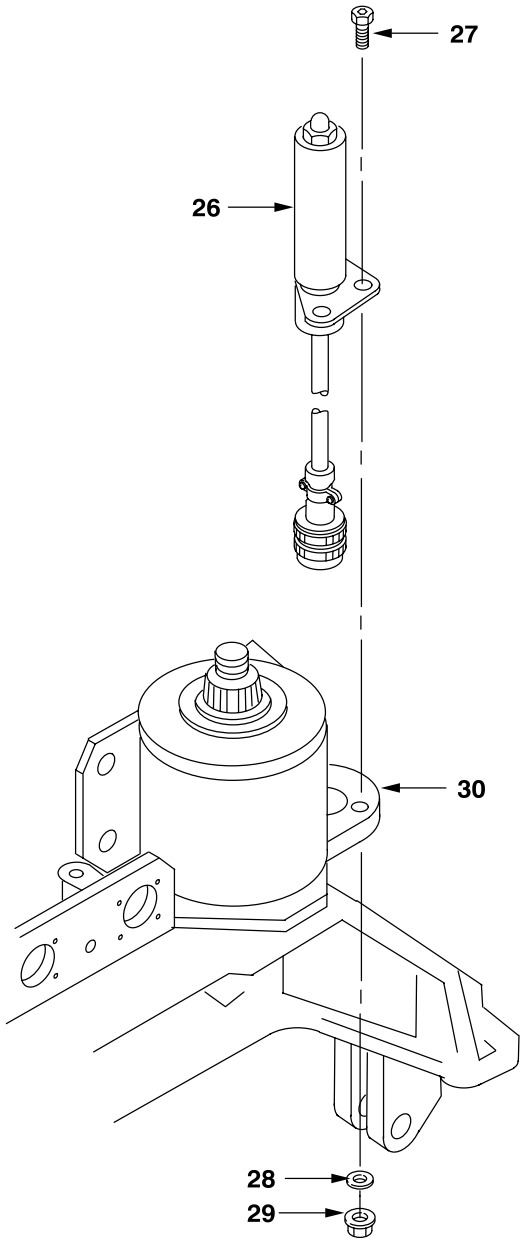
20. Remove linear variable differential transformer (LVDT) (26) as follows:

NOTE

Two LVDT's are installed on each stop-down assembly.

a. Remove three screws (27), washers (28), and nuts (29).

b. Lift LVDT (26). Pull cable and connector through hole in stop-down assembly (30).



406010-302
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2-4-2. CORNER MOUNT/STOP NUT/STOP-DOWN ASSEMBLY — REMOVAL/INSTALLATION (CONT)

21. Remove corner mounts and stop-down assembly.

a. Hold beam assemblies (6 and 7) in a vise (B211) fitted with protective jaw caps (B15).

b. Remove cotter pin (31). Discard cotter pin.

c. Remove stop nut (32).

d. Remove corner mounts (22 and 23).

e. Remove stop-down assembly (30) from mount bolt (33).

f. If stop-down assembly (30) is to be replaced remove two nuts (34), washers (35), and screws (36), and retain bracket (37) for installation on replacement stop-down assembly.

22. Repeat step 21. to remove corner mounts (22 and 23) and stop-down assembly (30) from opposite beam assembly.

23. Inspect TAMS target plate and top target support (Task 2-4-3).

24. Inspect corner mounts (Task 2-4-4).

25. Inspect stop nut (Task 2-4-5).

26. Inspect stop-down assembly (Task 2-4-6).

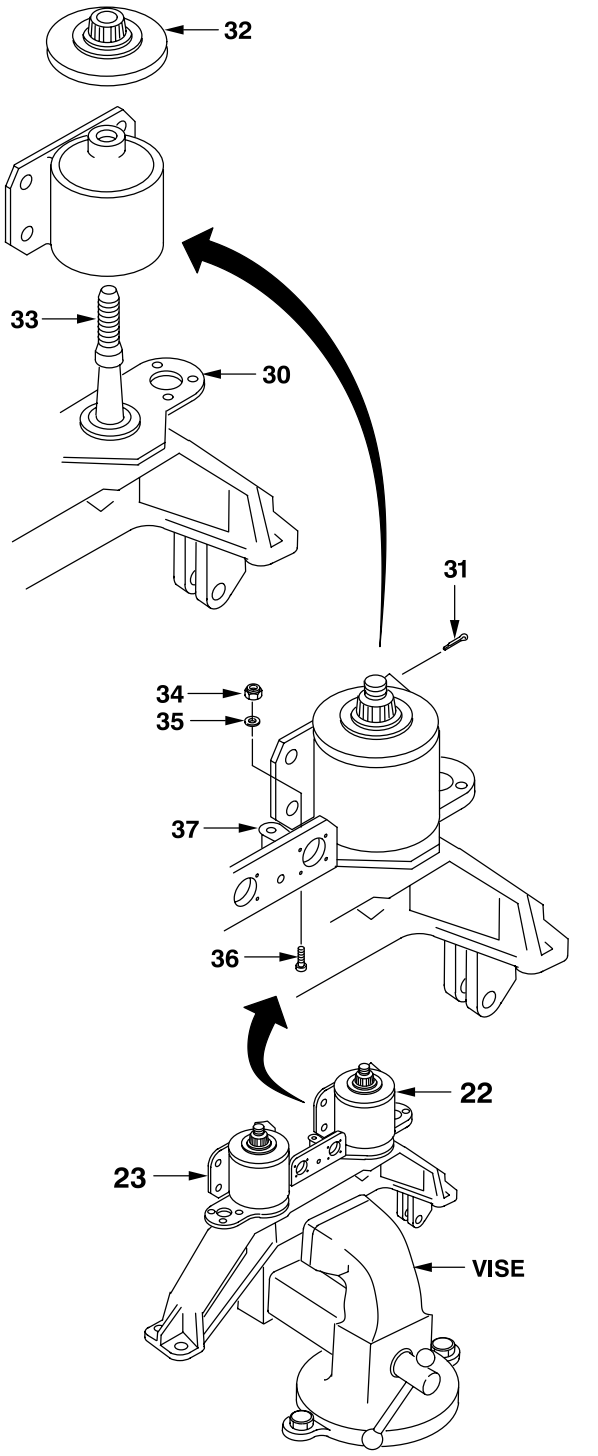
27. Inspect beam assemblies (Task 2-4-7).

28. Inspect mount bolt and stop nut (Task 2-4-8).

29. Inspect spring assemblies (Task 2-4-9).

30. Inspect forward transverse beam (Task 2-4-10).

31. Inspect aft transverse beam (Task 2-4-11).



406010-301
J0782

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2-4-2. CORNER MOUNT/STOP NUT/STOP-DOWN ASSEMBLY — REMOVAL/INSTALLATION (CONT)

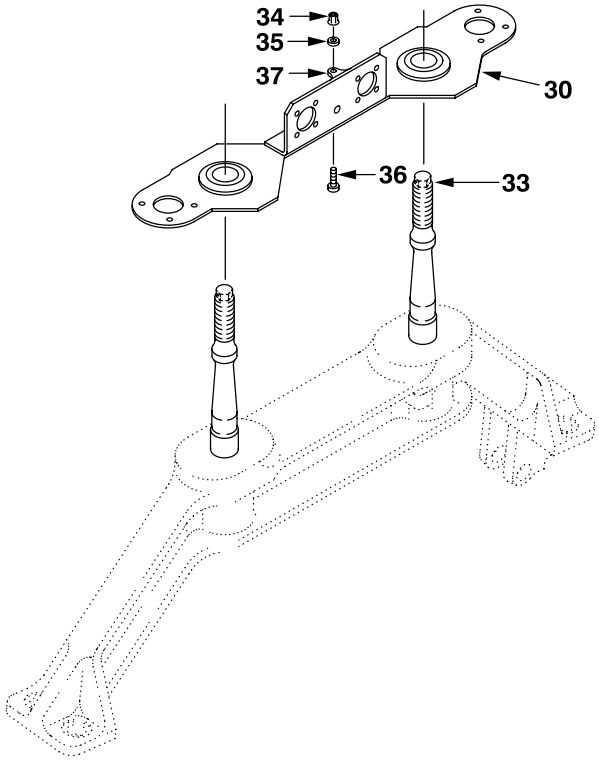
32. Install corner mounts and stop-down assembly.

NOTE

During installation of corner mounts, stop nuts, and stop-down assembly, beam assembly is held in a vise (B211) fitted with protective jaw caps (B15).

a. If a new stop-down assembly (30) is being installed, install bracket (37) on the new stop-down assembly (30) with two screws (36), washers (35), and nuts (34).

b. Place stop-down assembly (30) on mount bolts (33).



406010-300
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2-4-2. CORNER MOUNT/STOP NUT/STOP-DOWN ASSEMBLY — REMOVAL/INSTALLATION (CONT)

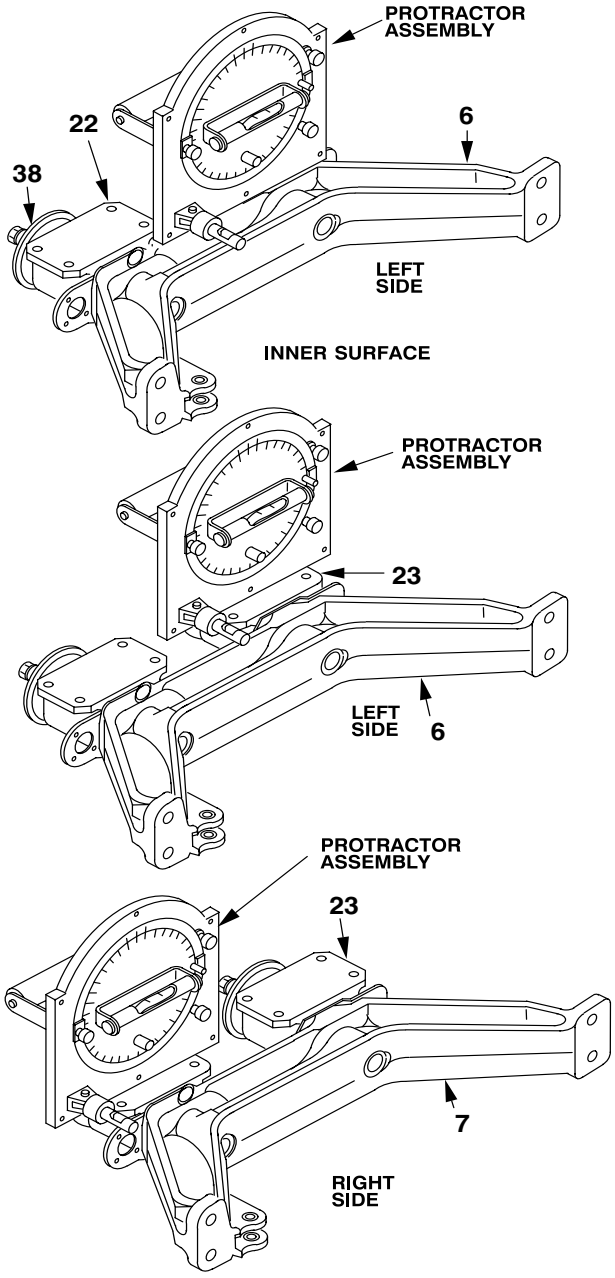
c. Place corner mounts (22 and 23) on mount bolts.

d. Install two stop nuts (38). Tighten stop nuts to permit adjustment, but not to allow free movement.

e. Align mounting surface of corner mounts (22 and 23) in same plane as inner surface of beam assembly (6 or 7).

f. Zero protractor assembly (B109) to align mounting surface of beam assembly (6 or 7).

g. Use protractor assembly (B109) to align mounting surface of corner mounts (22 and 23) in same plane as inner surface of beam assembly (6 or 7) within 5 degrees.



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CAUTION

To prevent damage to corner mount elastomer, corner mount must remain within 5 degrees of plane of side beam after torquing of stop nut.

h. Torque two stop nuts (32) **180 TO 200 FOOT-POUNDS.**

i. Install two cotter pins (31) through stop nuts (32) on new installation.

NOTE

After installation of stop-down assembly, stop nut, and/or corner mount, beam assembly is removed from vise.

INSPECT

33. Repeat step 32. to install corner mounts (22 and 23) and stop-down assembly (30) on opposite beam assembly.

34. Install linear variable differential transformer (LVDT) (26) as follows:

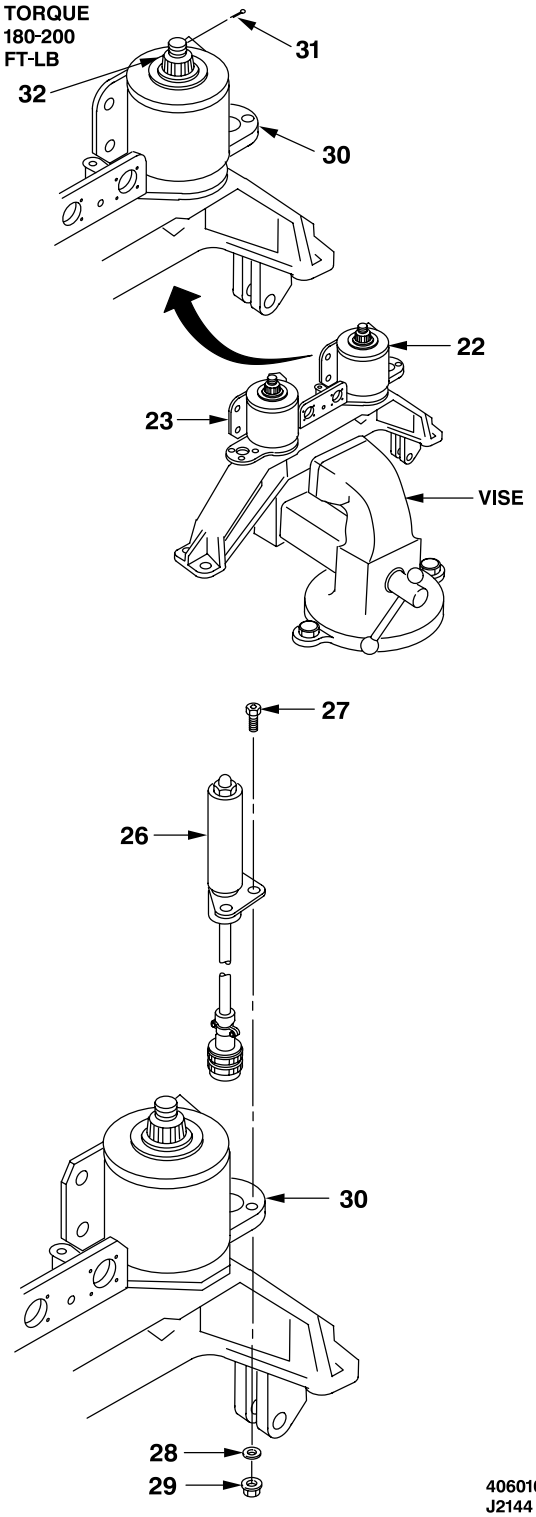
NOTE

Two LVDT's are installed on each stop-down assembly.

a. Pull connector and cable through hole in stop-down assembly (30).

b. Install LVDT (26) on stop-down assembly (30) with three screws (27), washers (28), and nuts (29).

35. Repeat step 34. to install LVDT (26) on opposite beam assembly.



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36. Install beam assemblies (6 and 7) on transmission (21).

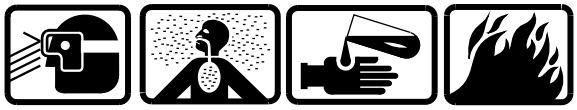
37. On transmission (21) install two TAMS target lower supports (20) and two TAMS target lower supports (18) using washer (17) and nut (16) for each TAMS target lower support.

NOTE

Top target support and TAMS target plate are attached to each TAMS target lower support.

37.1. Install top target support to each TAMS target lower support using four screws (19) for each top target support.

38. Secure screws (19) that attach top target support to TAMS target plate with lockwire (D131).



Sealing Compound

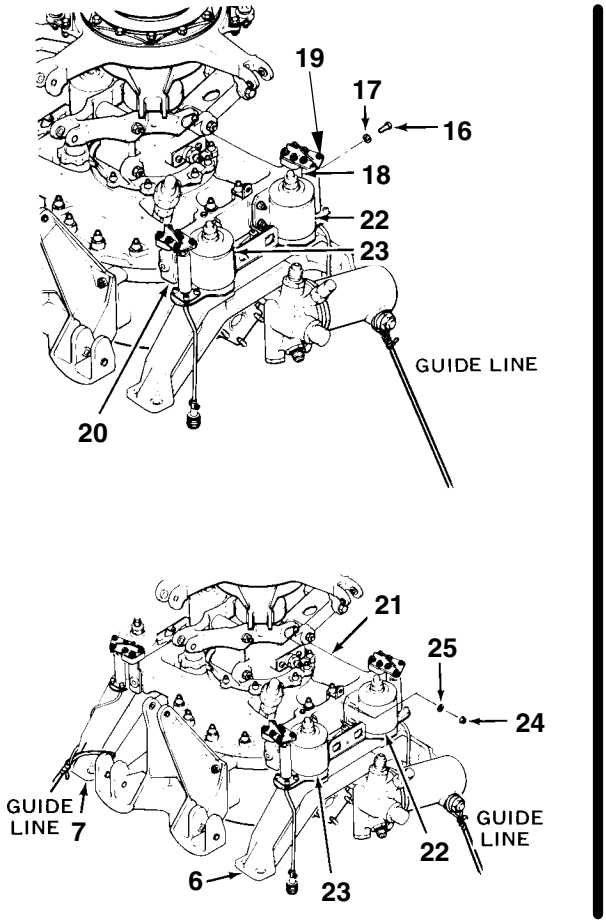
39. Apply external bead of sealant (D181) to faying surfaces of mounts (22 and 23) and transmission.

40. Hold beam assemblies (6 and 7) and attached parts in place against transmission (21).

41. Install four nuts (24) and four washers (25) in each corner mount (22 and 23). Torque nuts **150 TO 180 INCH-POUNDS**.

42. Apply external bead of sealing compound (D186) at the joint between mounts and transmission after mount installation.

43. Use two guide lines (B118) to steady transmission and pylon parts while suspended.



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J2691

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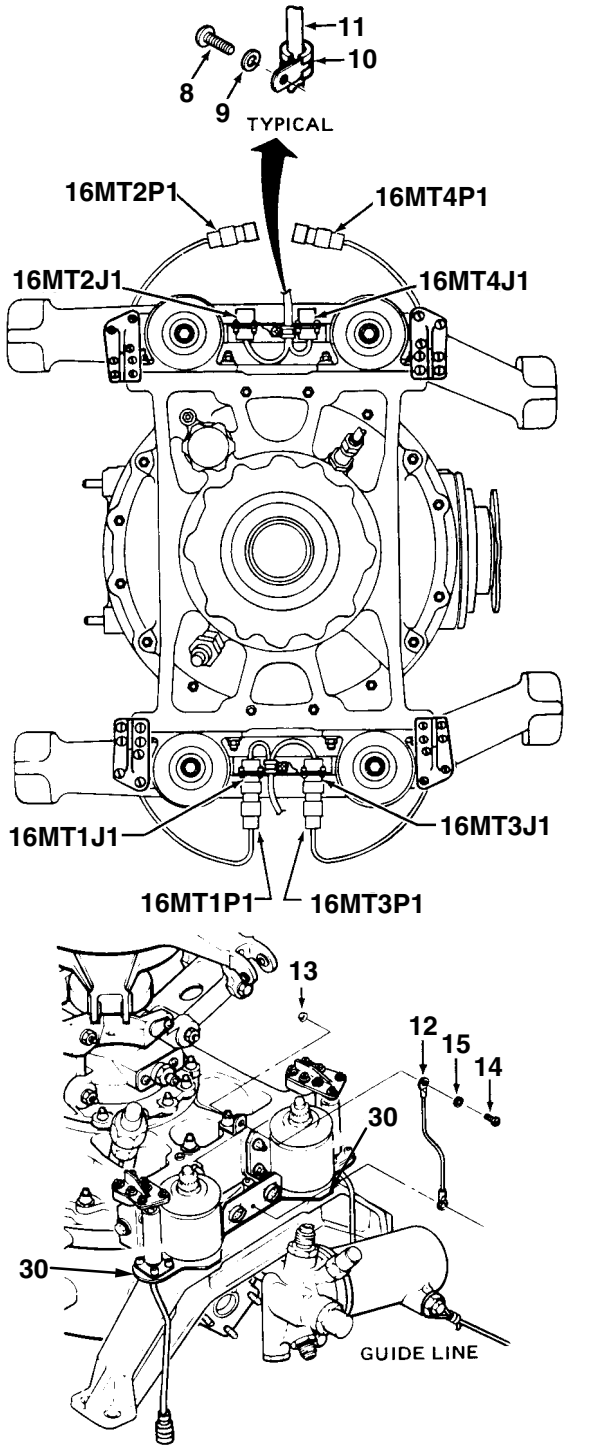
2-4-2. CORNER MOUNT/STOP NUT/STOP-DOWN ASSEMBLY — REMOVAL/INSTALLATION (CONT)

44. Install two grounding straps (12). For each grounding strap (12), install two washers (15), screws (14), and nuts (13).

45. Install electrical receptacles (16MT1J1, 16MT3J1, 16MT2J1, and 16MT4J1) on bracket on each stop-down assembly (30).

46. Secure electrical cable (11) to bracket on each stop-down assembly (30) using washer (9) and screw (8) to secure clamp (10).

47. Connect electrical connectors (16MT1P1, 16MT3P1, 16MT2P1, and 16MT4P1).



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J0782

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WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART

Correct installation of spring assembly is a characteristic critical to flight safety.

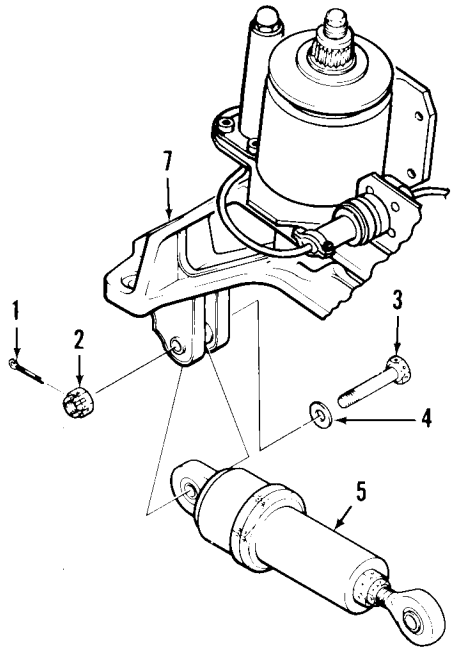
NOTE

The allowable distance between bearing centers of each spring assembly is **7.33 to 7.39 inches**. The difference of the distances between bearing centers after adjustment shall be within **0.03 inch**.

48. Adjust as required and install right spring assembly (5) on beam assembly (7).

a. Place eye of spring assembly (5) in fitting on beam assembly (7).

b. If adjustment is required and jamnut is loosened, torque jamnut **480 TO 696 INCH-POUNDS**



406010-58
J0439

INSTALL PARTS

NOTE

- Bolthead must be installed on inboard side of beam.
- Self-locking castellated nuts are to be safetied with a cotter pin or lockwire. The nonmetallic insert is not the primary safetying feature of these nuts. Nuts shall be tested by attempting to insert a matching bolt by hand. Only those nuts that cannot be tightened down with fingers after the locking action engages bolt shall be reused.

c. Install washer (4) (under bolthead), bolt (3), and nut (2). Torque nut **160 TO 190 INCH-POUNDS**.

d. Install cotter pin (1) through nut (2).

GO TO NEXT PAGE

NOTE

The allowable distance between bearing centers of each spring assembly is **7.33 to 7.39 inches**. The difference of the distances between bearing centers after adjustment must be within **0.030 inch**.

49. Adjust as required and install left spring assembly (5) on beam assembly (6).

a. Place rod end bearing of spring assembly (5) on transmission fitting. Place eye of spring assembly (5) in fitting on beam assembly (6).

b. If adjustment is required and jamnut is loosened, torque jamnut **480 TO 696 INCH-POUNDS**

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

Correct installation of spring assembly (5) is a characteristic critical to flight safety.

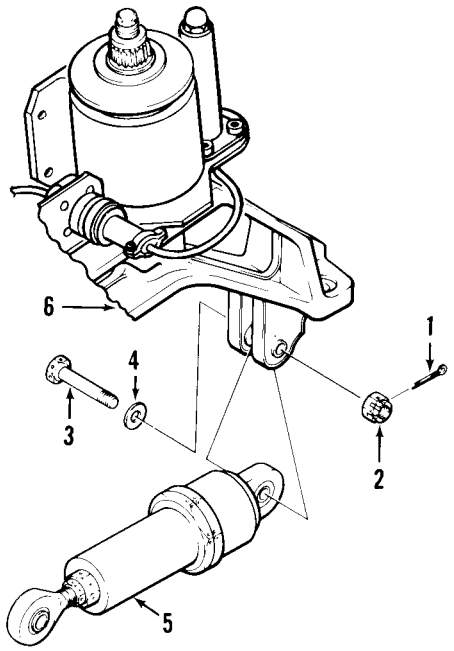
NOTE

Bolthead must be installed on inboard side of beam.

c. Install washer (4) (under bolthead), bolt (3), and nut (2). Torque nut **160 TO 190 INCH-POUNDS**.

NOTE

Self-locking castellated nuts are to be safetied with a cotter pin or lockwire. The nonmetallic insert is not the primary safetying feature of these nuts. Nut shall be tested by attempting to insert a matching bolt by hand. Only those nuts that cannot be tightened down with fingers after locking action engages bolt shall be reused.



406010-57
J0439

d. Install cotter pin (1) through nut (2).

INSPECT

FOLLOW-ON MAINTENANCE

Install transmission (Task 6-3-6).

END OF TASK

2-4-3. TAMS TARGET PLATE AND TOP TARGET SUPPORT — REMOVAL/INSPECTION/REPAIR/ INSTALLATION

This task covers: Removal, Inspection, and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Lockwire (D132)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

2-4-3. TAMS TARGET PLATE AND TOP TARGET SUPPORT — REMOVAL/INSPECTION/REPAIR/ INSTALLATION (CONT)

REMOVE

1. Remove four screws (1) and washers (2) securing top target support (3) to lower target support (4).

2. Remove top target support (3).

3. Remove lockwire from screws (5).

4. Remove three screws (5) and washers (6).

5. Remove TAMS target plate (7) from top target support (3).

INSPECT

6. Inspect TAMS target plate (7). No damage allowed.

7. Inspect top target support (3).

REPAIR

8. Rework areas A and B by removing any raised material flush with surrounding surface. Remove material using a fine India stone.

9. Rework corrosion or mechanical damage in area D by polishing with a fine India stone to a minimum radius of **0.12 inch** and a surface finish of 63 RMS or finer. Remove any raised material flush with surrounding surface.

10. Do not polish out corrosion pitting in areas B and C. See figure Target Support — Damage Limits.

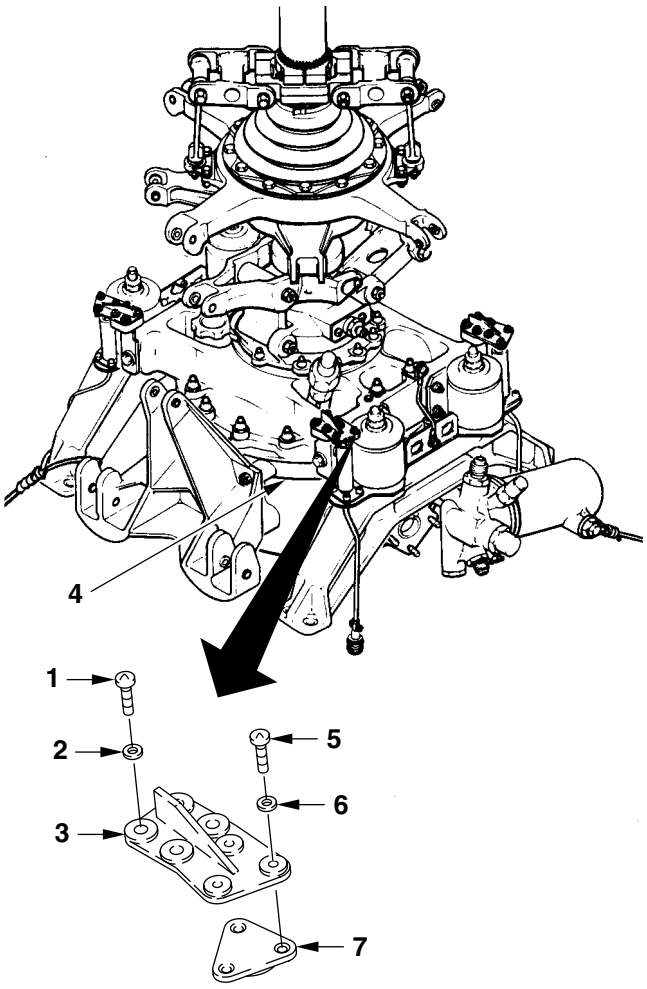
11. Damage or repair may not extend closer than **0.060 inch** to edge of holes in areas A and B. See figure Target Support — Damage Limits.

INSTALL

12. Install TAMS target plate (7) on top target support (3) using three washers (6) and screws (5).

13. Secure screws (5) using lockwire (D131).

14. Install top target support (3) on lower target support (4) using four washers (2) and screws (1).



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H2845

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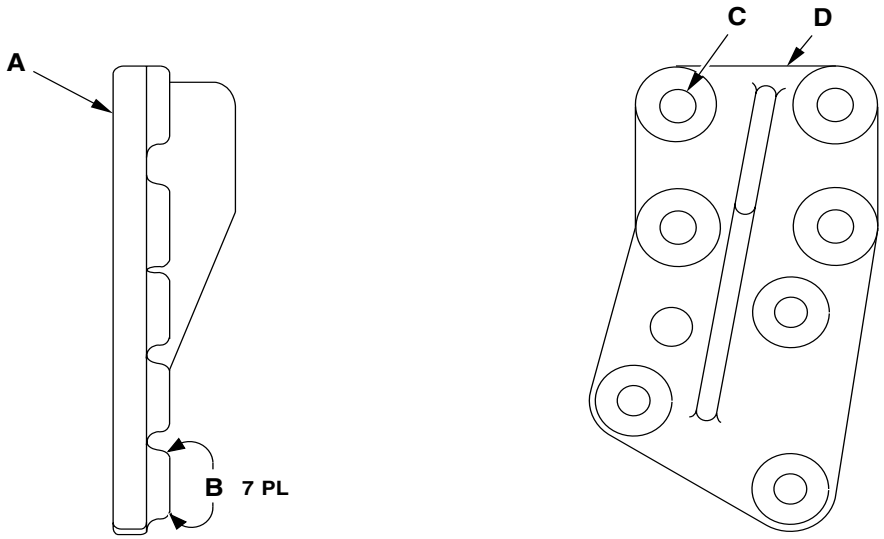
2-4-3. TAMS TARGET PLATE AND TOP TARGET SUPPORT — REMOVAL/INSPECTION/REPAIR/ INSTALLATION (CONT)



406-040-743-101/102 TARGET SUPPORT

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
CORROSION:	
AREA A (MTG SURF)	0.020 depth - 20 percent of any one square inch
AREA B (MTG PADS)	0.020 depth - 15 percent of each surface
AREA C (HOLES)	0.020 depth - 20 percent of wall area
AREA D (AS CAST SURF)	0.030 depth - 40 percent of any one square inch-20 percent of area
MECHANICAL:	
AREA A (MTG SURF) AREA B (MTG PADS)	0.010 depth - 0.500 length
AREA D (CAST SURF)	0.020 depth - 0.500 length

NOTE:
Dimensions in inches

406010-524
H3398

Target Support — Damage Limits

END OF TASK

2-4-4. CORNER MOUNT — CLEANING/INSPECTION

This task covers: Cleaning and Inspection (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Hand Arbor Press (B107)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Transmission Removed (Task 6-3-2)
Corner Mount Removed (Task 2-4-2)

CLEAN

Drycleaning Solvent

CAUTION

To prevent damage to elastomers, do not spill solvent (D199) on elastomer part of mount.

1. Use wiping rag (D164) and drycleaning solvent (D199) to clean surfaces of corner mount.

2. Use wiping rag (D164) to dry corner mount.

INSPECT

3. Inspect corner mount to limits shown in figure Corner Mount — Damage Limits. Reject corner mount if limits are exceeded.

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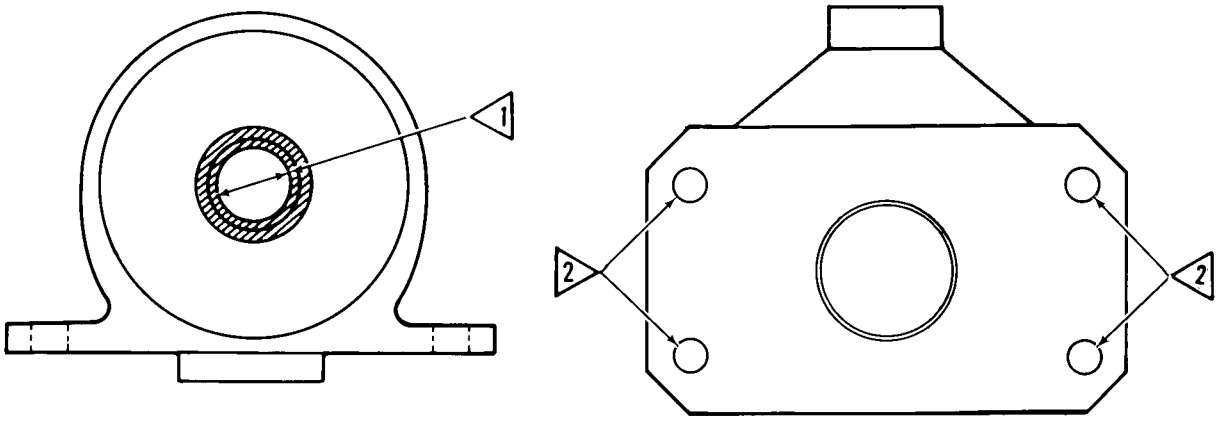
2-4-4. CORNER MOUNT — CLEANING/INSPECTION (CONT)



DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	0.010 In. before and after repair	0.010 In. before and after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.10 Sq. in.	0.05 Sq. in.
NUMBER OF REPAIRS	Two	Two (no overlaps)
EDGE CHAMFER TO REMOVE DAMAGE	0.040 In. X 45° on 0.040 radius	
BORES 1 MOUNTING	0.001 Inch for ¼ circumference	
BORES 2 MOUNTING	0.010 Inch	
BEARING DAMAGE (ELASTOMER)	0.005 Inch width and 0.25 inch depth of separation.	

NOTES:

1. Normal elastomer fretting (eraser type dust) is not cause for replacement.
2. Replace elastomer bearing if cracks in shim.
3. Replace elastomer bearing if a 0.005 inch feeler gage can be inserted more than 0.250 inch in any crack in elastomer material.

406010-32
J0439

Corner Mount — Damage Limits

END OF TASK

2-4-5. STOP NUT — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

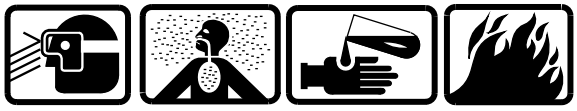
Material:
Drycleaning Solvent (D199)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Light Gull Grey Acrylic Lacquer (D126)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

Equipment Condition:
Transmission Removed (Task 6-3-2)
Stop Nut Removed (Task 2-4-2)

CLEAN



Drycleaning Solvent

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of stop nut.

2. Use wiping rags (D164) to dry stop nut.

INSPECT

3. Inspect stop nut to limits shown. Reject stop nut if limits are exceeded.

4. Check self-locking feature of stop nut by screwing into a mount bolt with fingers. If stop nut can be screwed by hand onto the mount bolt until the threads of the mount bolt extend beyond the top of the stop nut, then the self-locking feature of the stop nut is worn out and stop nut must be replaced.

REPAIR

5. Polish out acceptable damage with 400 grit sandpaper (D175).

INSPECT

6. Apply one coat of epoxy primer coating (D98) to repaired areas which were previously painted. Apply in accordance with TM 55-1500-345-23.

Acrylic Lacquer

7. Apply two coats of lacquer (D126) to primed areas.

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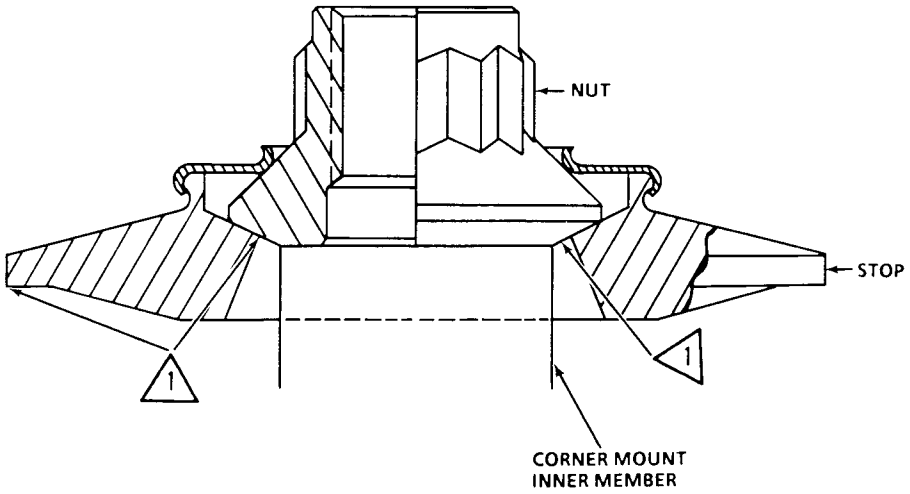
2-4-5. STOP NUT — CLEANING/INSPECTION/REPAIR (CONT)



DAMAGE LOCATION SYMBOL

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH ▽1
MECHANICAL	0.010 In. before and after repair
CORROSION	0.005 In. before and 0.010 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.100 Sq. in.
NUMBER OF REPAIRS	One per area
EDGE CHAMFER TO REMOVE DAMAGE	0.020 In x 45° or 0.020 in. radius
THREAD DAMAGE:	None allowed

NOTE: ▽1 Damage limits shown apply to areas between nut and stop, **bearing area** between nut and inner member of pylon corner mount, and the outer edge of stop where contact is made with the corner mount.

406010-5
J2144

Stop Nut — Damage Limits

END OF TASK

2-4-6. STOP-DOWN ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Hand Arbor Press (B107)

Material:
Drycleaning Solvent (D199)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Light Gull Grey Acrylic Lacquer (D126)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 1-1520-266-23
TM 55-1500-345-23

Equipment Condition:
Transmission Removed (Task 6-3-2)
Stop-down Assembly Removed (Task 2-4-2)

GO TO NEXT PAGE

2-4-6. STOP-DOWN ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

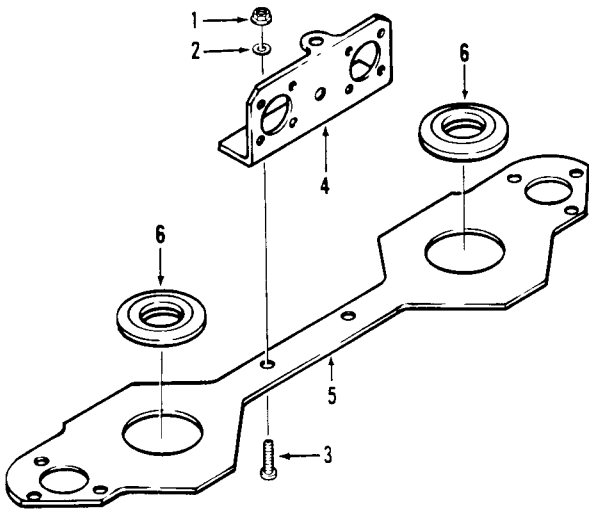
Drycleaning Solvent

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of stop-down assembly.

2. Use wiping rags (D164) to dry stop-down assembly.

INSPECT

3. Inspect stop-down assembly to limits shown. Repair or replace stop-down assembly if limits are exceeded. See Plate and Bracket—Damage Limits and figure Bushing—Damage Limits. If crack in stop-down assembly is suspected perform magnetic particle inspection (TM 1-1520-266-23).



406010-355
J0439

REPAIR

4. Remove two nuts (1), washers (2), and screws (3) from bracket (4) and plate (5).

5. Remove bracket (4) from plate (5).

6. Remove two bushings (6) from plate (5) using hand arbor press (B107).

7. Repair damage which exceeds negligible damage limits.

8. Replace bracket (4), plate (5), or bushings (6) if broken or damaged beyond limits.

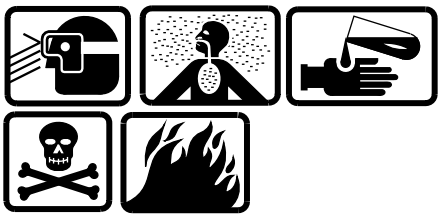
9. Repair cracks, cuts, punctures, and missing hardware in accordance with TM 1-1500-204-23.

GO TO NEXT PAGE

2-4-6. STOP-DOWN ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

10. Install bracket (4) on plate (5).

11. Install two screws (3), washers (2), and nuts (1) on bracket (4) and plate (5).



Epoxy Primer Coating

12. Thermal fit bushings (6) in plate (5) by freezing bushing (6) and using wet epoxy primer coating (D98) on bores of plate (5).

13. Press two bushings (6) into plate (5) using hand arbor press (B107).

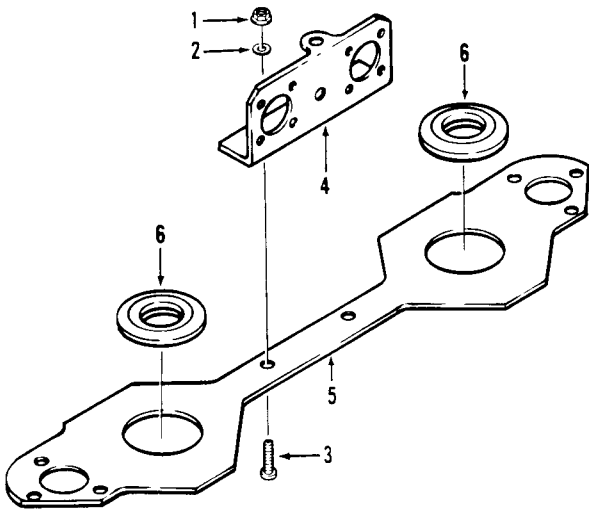
14. Polish out acceptable damage with 400 grit sandpaper (D175).

INSPECT

15. Apply one coat of epoxy primer coating (D98) to repaired areas which were previously painted. Apply in accordance with TM 55-1500-345-23.

Acrylic Lacquer

16. Apply two coats of lacquer (D126) to primed area.



406010-355
J0439

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2-4-6. STOP-DOWN ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

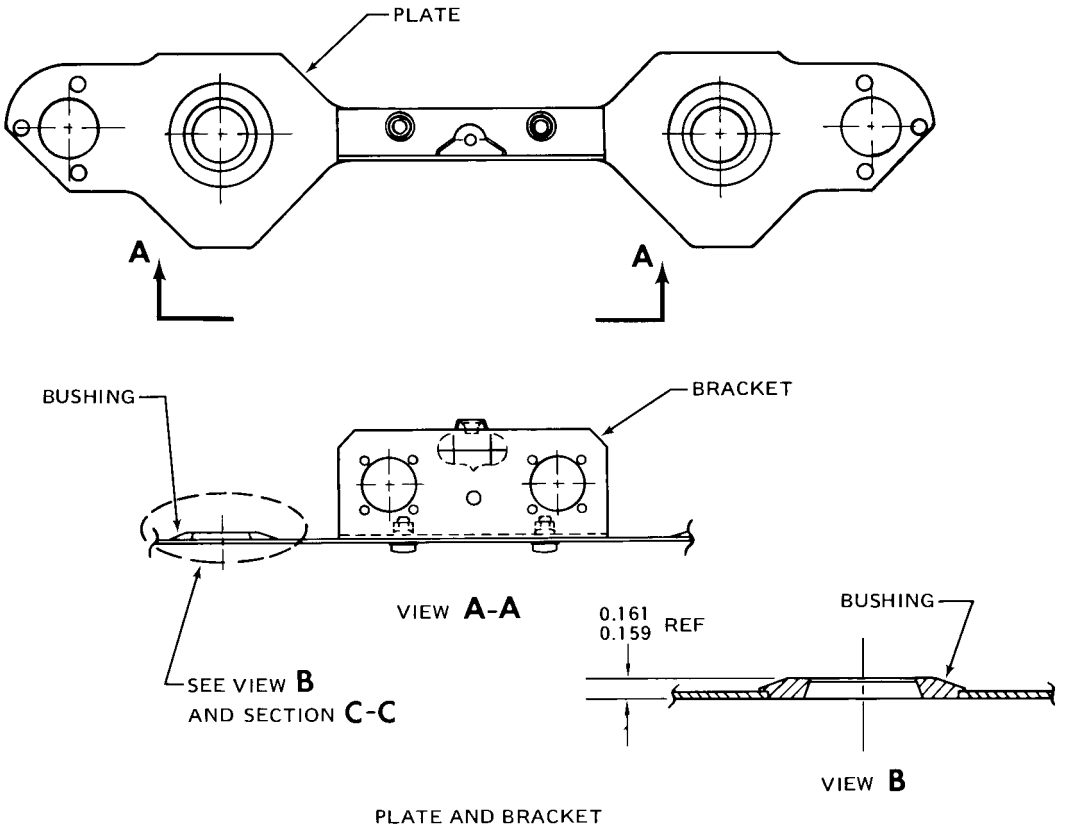

PLATE AND BRACKET

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL AND CORROSION	0.020 in. before and after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.20 Sq. in.
NUMBER OF REPAIRS	Two per area
EDGE CHAMFER TO REMOVE DAMAGE	0.020 In × 45° or 0.020 In. radius

NOTES:
1. Overlapping of repairs in same area not allowed.
2. All dimensions are in inches unless otherwise specified.

406010-123
J0439

Plate and Bracket — Damage Limits

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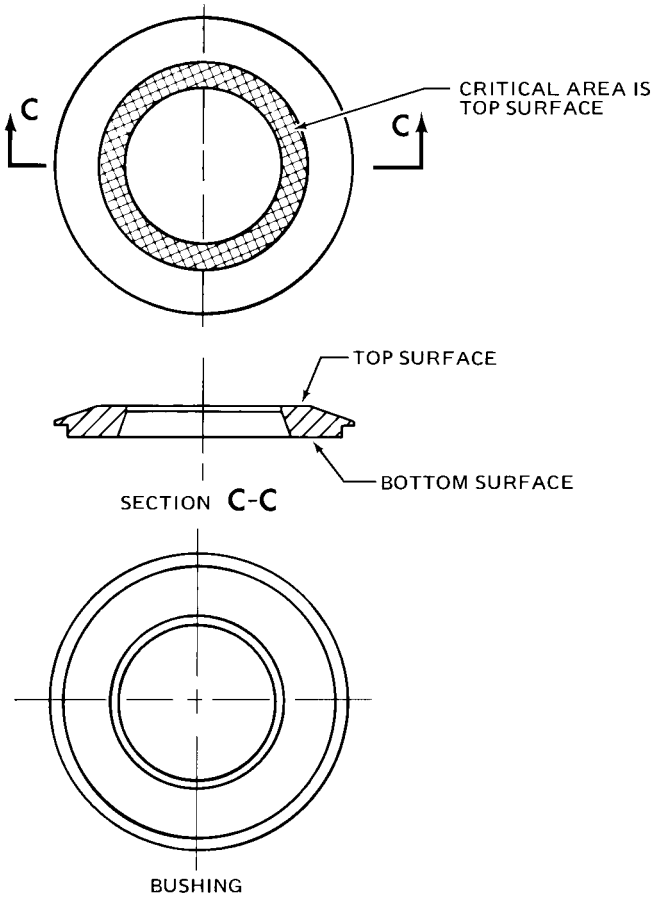


DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	0.020 In. before and after repair	0.040 In. before and after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.05 Sq in.	0.20 Sq. in.
NUMBER OF REPAIRS	Two per area	Two per area
EDGE CHAMFER TO REMOVE DAMAGE	0.020 In. × 45° or 0.020 In. radius	0.020 In. × 45° or 0.020 In. radius
BORES	0.005 In. for full circumference	

NOTE: 1. Overlapping of repairs in same area not allowed.

406010-124
J0439

Bushing — Damage Limits

END OF TASK

2-4-7. BEAM ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Hand Arbor Press (B107)

Material:
Drycleaning Solvent (D199)
Acetone (D2)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Light Gull Grey Acrylic Lacquer (D126)
Abrasive Mats (D1)
Wiping Rags (D164)
Cotton Gloves (D112)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

Equipment Condition:
Beam Assembly Removed (Task 2-4-12)

GO TO NEXT PAGE

2-4-7. BEAM ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of beam assembly.

2. Use wiping rags (D164) to dry beam assembly.

INSPECT

3. Inspect beam assembly to limits shown. Reject beam assembly if limits are exceeded.

REPAIR

4. Polish out acceptable damage with 400 grit sandpaper (D175).

5. Apply one coat of epoxy primer coating (D98) to repaired areas which were previously painted. Apply in accordance with TM 55-1500-345-23.

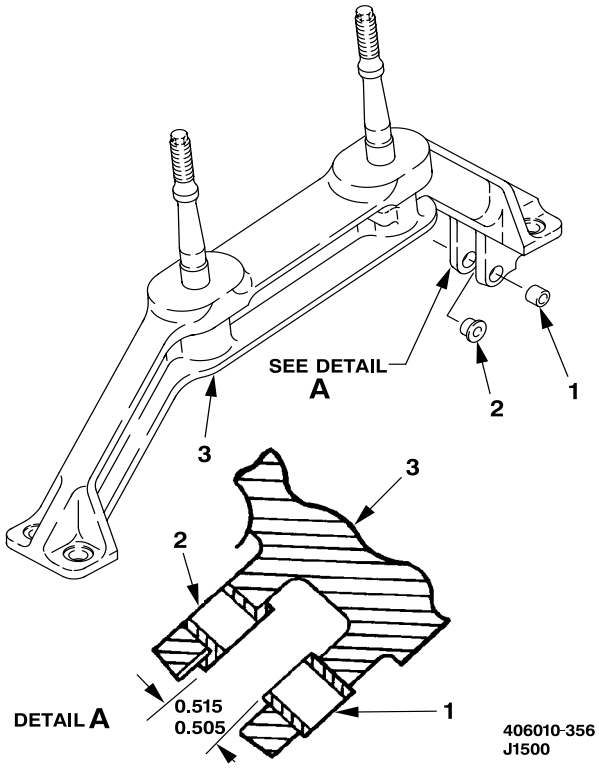
Acrylic Lacquer

6. Apply two coats of lacquer (D126) to primed area.

7. Replace bushings in beam assemblies as follows:

NOTE

Removal and installation procedures are same for both left and right beam assembly bushings. Bushings (1 and 2) shall be installed in position shown.



a. Press bushing (1) out of beam (3) using hand arbor press (B107) and appropriate pressing plug.

b. Press bushing (2) out of beam (3) using hand arbor press (B107) and appropriate pressing plug.

Acetone

c. Remove primer from beam bushing bores with wiping rag (D164) dampened with acetone (D2), and abrasive mats (D1).

d. Inspect beam (3) bushing bores to limits shown. See figure Beam Assembly—Damage Limits.

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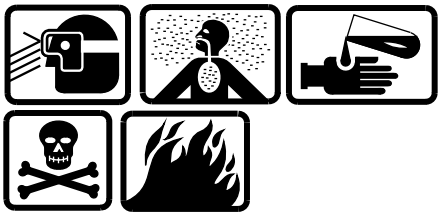
e. Freeze replacement bushings (1 and 2).

WARNING

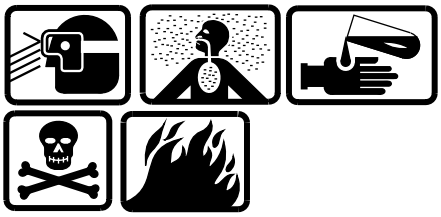
To prevent injury to skin, frozen bushings shall be handled with cotton gloves (D112).



Epoxy Primer Coating

f. Coat bushing bore in beam (3) and mating surfaces of bushing (2) with primer (D98).

g. Press bushing (2) into beam (3) while primer (D98) is still wet using hand arbor press (B107) and appropriate pressing plug.

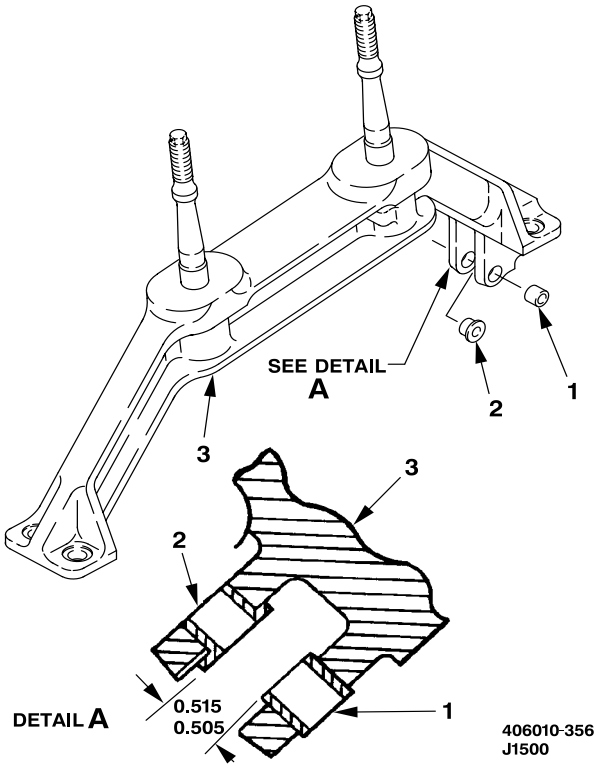


Epoxy Primer Coating

h. Coat bushing bore in beam (3) and mating surfaces of bushing (1) with primer (D98).

i. Press bushing (1) into beam (3) while primer (D98) is still wet using hand arbor press (B107) and appropriate pressing plug.

j. Install bushing (1) to a depth required to obtain a **0.505 to 0.515 inch** dimension between shoulder head of bushing (2) and inboard end of bushing (1).



INSPECT

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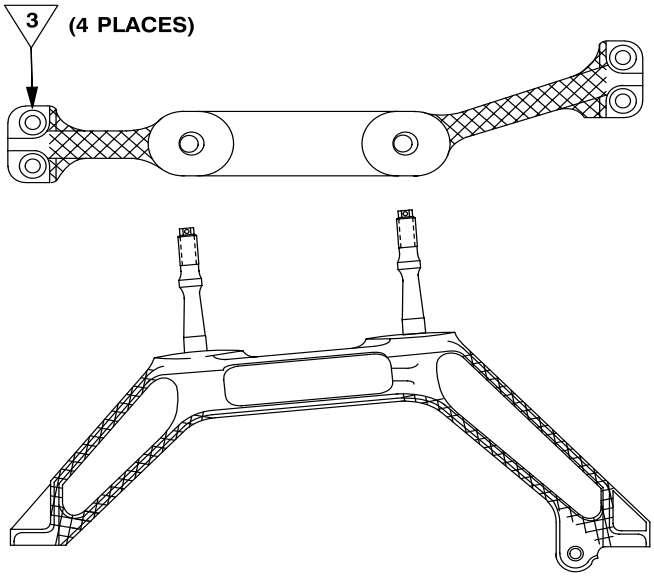

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	0.010	0.030
CORROSION 1	0.005 Before repair 0.010 After repair	0.050 Before and 0.030 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.050 Sq. in.	0.100 Sq. in.
NUMBER OF REPAIRS 2	Two per area	4
EDGE CHAMFER TO REMOVE DAMAGE 2	0.030 X 45° or 0.030 radius	0.050 X 45° or 0.050 radius
BORE DAMAGE 2		0.002 For 1/4 circumference
BUSHING DAMAGE 2		0.002 For 1/4 circumference

NOTES:

1. Corrosion damage must be removed to twice the visible depth, not to exceed above limits.
2. No overlapping repairs allowed.
3. Replace beam if ID exceeds 0.506 inch.
4. No cracks are permitted.
5. All dimensions are in inches.

406010-6
J2144

Beam Assembly — Damage Limits

END OF TASK

2-4-8. MOUNT BOLT — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Crocus Cloth (D90)
Wiping Rags (D164)
Brush-on Cadmium Plate (D129)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of mount bolt.

2. Use wiping rags (D164) to dry mount bolt.

INSPECT

3. Inspect mount bolt to limits shown. Reject beam assembly if limits are exceeded. See figure Mount Bolt— Damage Limits.

REPAIR

4. Polish out acceptable damage with crocus cloth (D90).

INSPECT

5. Brush on cadmium plate (D129) to polished out areas (TM 55-1500-345-23).

INSPECT

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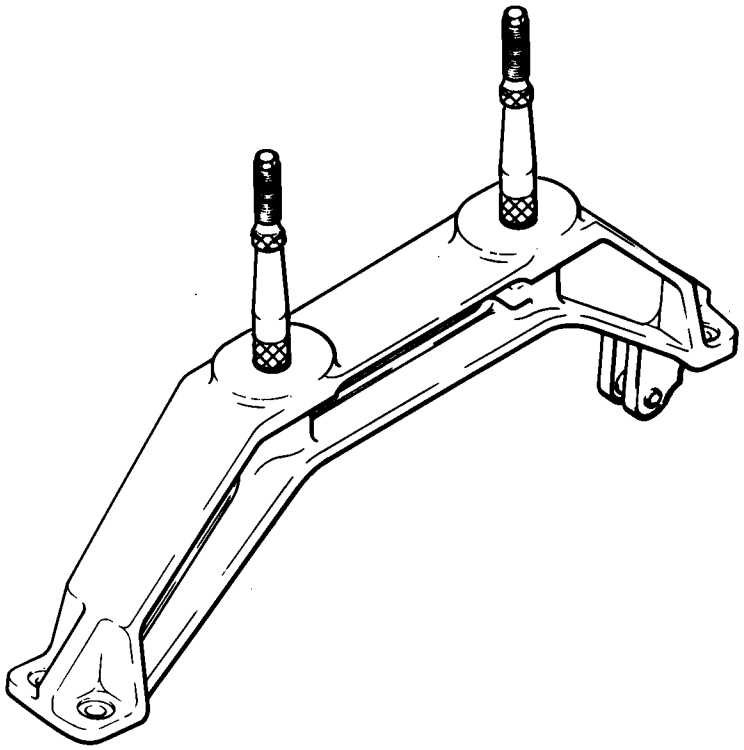


	DAMAGE LOCATION SYMBOLS	
TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	0.001 In. before and after repair	0.002 In. before and after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.100 Sq in.	0.200 Sq in.
NUMBER OF REPAIRS	One per area	One per area
EDGE CHAMFER TO REMOVE DAMAGE	0.030 In. x 45° or 0.030 radius	0.030 In. x 45° or 0.030 radius
THREAD DAMAGE	None allowed	

406010-3
J0429

Mount Bolt — Damage Limits

END OF TASK

2-4-9. SPRING ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

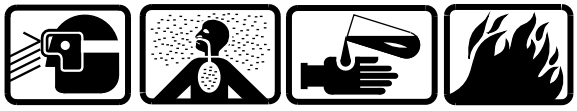
Material:
Drycleaning Solvent (D199)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Light Gull Grey Acrylic Lacquer (D126)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

Equipment Condition:
Spring Assembly Removed (Task 2-4-2)

CLEAN



Drycleaning Solvent

CAUTION

To prevent damage to elastomer, solvent (D199) shall not be allowed to contact elastomer bearing.

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of spring assembly.

2. Use wiping rags (D164) to dry spring assembly.

INSPECT

3. Inspect spring assembly to limits shown in figure Spring Assembly — Damage Limits. Reject spring assembly if limits are exceeded.

REPAIR

4. Polish out acceptable damage with 400 grit sandpaper (D175).

INSPECT

5. Apply one coat of primer (D98) to repaired areas which were previously painted. Apply in accordance with TM 55-1500-345-23.

6. Apply two coats of lacquer (D126) to primed area. Apply in accordance with TM 55-1500-345-23.

INSPECT

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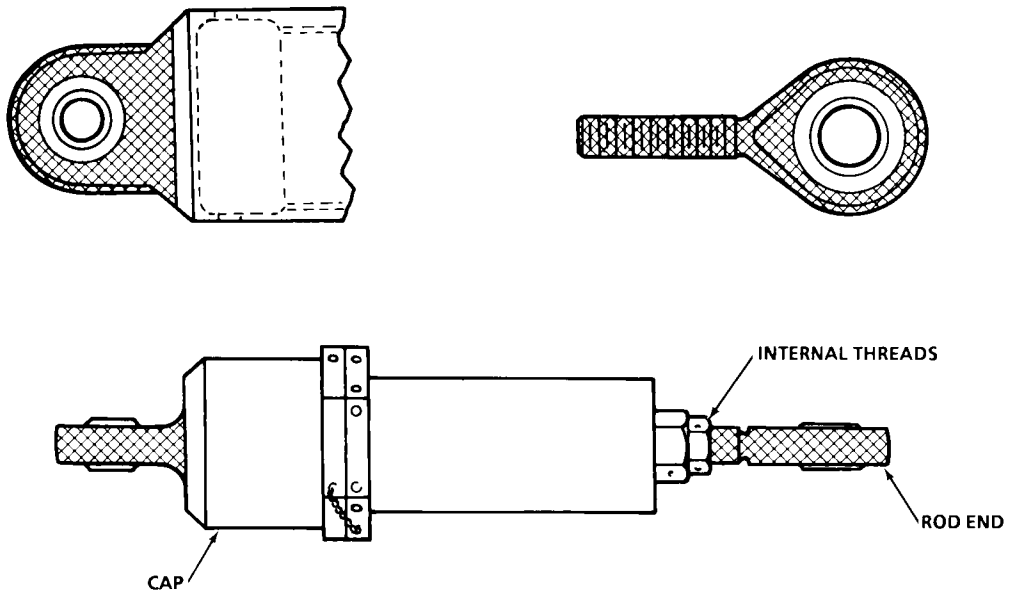

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	0.010 In. before and after repair	0.020 In. before and after repair
CORROSION	0.005 In. before and 0.010 In. after repair	0.010 In. before and 0.020 In. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.025 Sq. in.	0.50 Sq. in.
NUMBER OF REPAIRS	One per lug	Not critical
EDGE CHAMFER TO REMOVE DAMAGE	0.030 In.	0.060 In.
BEARING WEAR	Axial 0.015 In. / Radial 0.015 In.	

ROD END / CAP / INTERNAL / SPRING THREAD DAMAGE:

	CAP	ROD END
Depth	1/3 of thread	1/3 of thread
Length	0.5 In.	1/4 of circumference
Number	Two per threaded segment	Two per threaded segment
Cracks	None allowed	None allowed

ELASTOMER DAMAGE (REMOVE CAP)	Replace if 0.005 inch feeler gage can be inserted more than 0.75 inch. Normal fretting (eraser type dust) is not cause for replacement.

406010-35
J0439

Spring Assembly — Damage Limits

END OF TASK

2-4-10. FORWARD TRANSVERSE BEAM (AVIM) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Light Gull Grey Acrylic Lacquer (D126)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23
TM 1-1520-266-23

Equipment Condition:
Forward Transverse Beam Removed (Task 2-4-12)

CLEAN

Drycleaning Solvent

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of forward transverse beam.

2. Use wiping rags (D164) to dry forward transverse beam.

INSPECT

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART

Fluorescent penetrant inspection and eddy current inspection of forward transverse beam are procedures critical to flight safety.

3. Fluorescent penetrant inspect forward transverse beam in accordance with TM 1-1520-266-23.

3.1. Eddy current inspect forward transverse beam in accordance with TM 1-1520-266-23.

4. Inspect forward transverse beam to limits shown. Reject forward transverse beam if limits are exceeded. See figure Forward Transverse Beam — Damage Limits.

REPAIR

5. Polish out acceptable damage with 400 grit sandpaper (D175).

INSPECT

6. Apply one coat of epoxy primer coating (D98) to repaired areas which were previously painted. Apply in accordance with TM 55-1500-345-23.

7. Apply two coats of lacquer (D126) to primed area. Apply in accordance with TM 55-1500-345-23.

INSPECT

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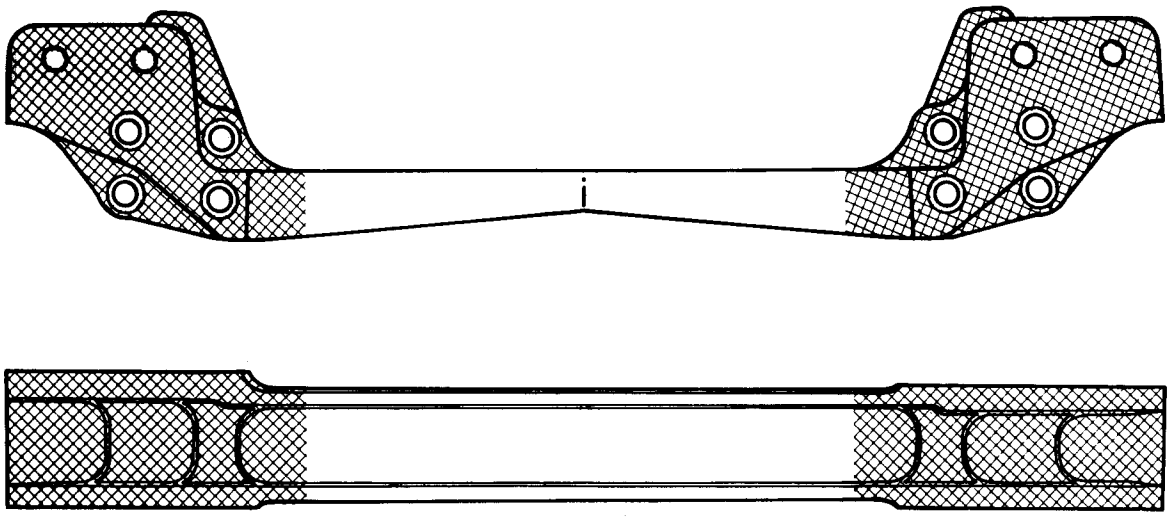

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	0.020 in. before and after repair	0.040 in. before and after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.100 Sq. in.	0.200 Sq. in.
NUMBER OF REPAIRS	Two per area	Two per area
EDGE CHAMFER TO REMOVE DAMAGE	0.050 in. x 45° or 0.050 radius	0.080 in. x 45° or 0.080 radius
BORES	0.002 In. for 1/4 circumference	

NOTE: 1. Overlapping of repairs in same area not allowed.

406010-2
J0429

Forward Transverse Beam — Damage Limits

END OF TASK

2-4-11. AFT TRANSVERSE BEAM — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Sandpaper (D175)
Epoxy Primer Coating (D98)
Light Gull Grey Acrylic Lacquer (D126)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1520-266-23
TM 55-1500-345-23

Equipment Condition:
Aft Transverse Beam Removed (Task 2-4-12)

GO TO NEXT PAGE

CLEAN

Drycleaning Solvent

1. Use wiping rags (D164) and drycleaning solvent (D199) to clean surfaces of aft transverse beam.

2. Use wiping rags (D164) to dry aft transverse beam.

INSPECT

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART

Fluorescent penetrant inspection and eddy current inspection of aft transverse beam are procedures critical to flight safety.

3. Fluorescent penetrant inspect aft transverse beam in accordance with TM 1-1520-266-23.

3.1. Eddy current inspect aft transverse beam in accordance with TM 1-1520-266-23.

4. Inspect aft transverse beam to limits shown. Reject aft transverse beam if limits are exceeded. See figure Aft Transverse Beam — Damage Limits.

REPAIR

5. Polish out acceptable damage with 400 grit sandpaper (D175).

INSPECT

6. Apply one coat of epoxy primer coating (D98) to repaired areas that were previously painted in accordance with TM 55-1500-345-23.

7. Apply two coats of acrylic lacquer (D126) to primed area in accordance with TM 55-1500-345-23.

INSPECT

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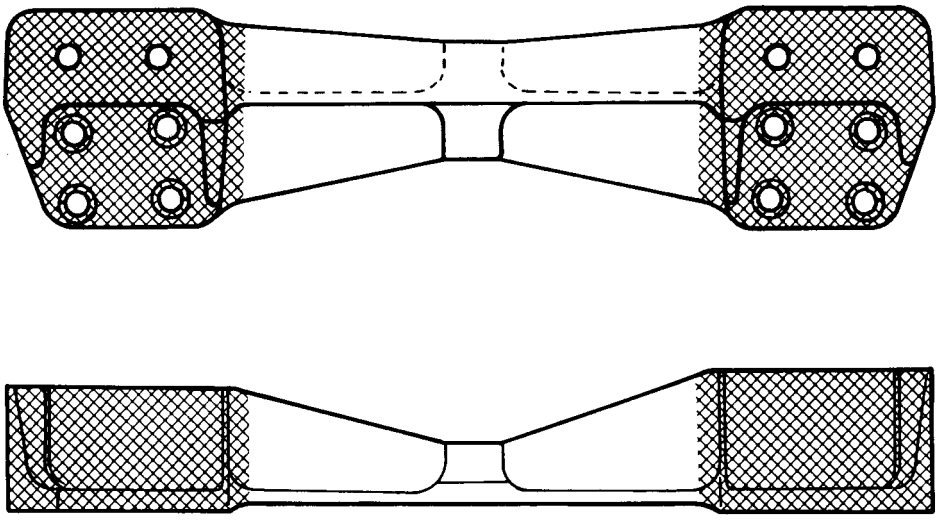
2-4-11. AFT TRANSVERSE BEAM — CLEANING/INSPECTION/REPAIR (CONT)



DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL AND CORROSION	0.020 in. before and after repair	0.040 in. before and after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.010 Sq. in.	0.020 Sq. in.
NUMBER OF REPAIRS	Two per area	Two per area
EDGE CHAMFER TO REMOVE DAMAGE	0.050 in. x 45° or 0.050 radius	0.080 in. x 45° or 0.080 radius
BORES	0.020 In. for 1/4 circumference	

NOTE: 1. Overlapping of repairs in same area not allowed.

406010-1
J0429

Aft Transverse Beam — Damage Limits

END OF TASK

2-4-12. TRANSVERSE BEAM ASSEMBLIES (AVIM) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)
Torque Wrench (B240)
'C' Clamp (2) (B16)
Pylon Beam Tool (T101299-101) (B199)
Pneumatic Drill (B40)
Drill Press (B108)

Material:
Corrosion Preventive Compound (D82)
Epoxy Primer Coating (D98)
Rubber Gloves (D111)
Sealing Compound (D184)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Transmission Removed (Task 6-3-2)

GO TO NEXT PAGE

2-4-12. TRANSVERSE BEAM ASSEMBLIES (AVIM) — REMOVAL/INSTALLATION (CONT)

REMOVE FORWARD TRANSVERSE BEAM

NOTE

Record washer (2) stackup for re-installation in same location.

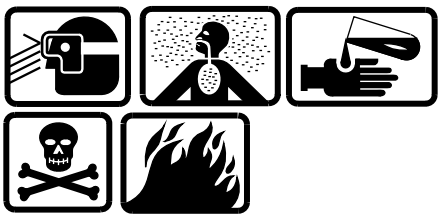
1. Remove eight nuts (1), 16 washers (2), and eight bolts (3, 4, and 5) from forward transverse beam (6) and cabin roof.

CAUTION

To prevent damage to shims or accidental dislocation, care shall be exercised when removing forward transverse beam. If existing shim cannot be maintained, forward transverse beam cannot be replaced using this method and tool set T101299-101 (B199).

2. Remove existing forward transverse beam (6) from roof. Do not remove shims (7).

INSTALL FORWARD TRANSVERSE BEAM



Corrosion Preventive Compound

3. Apply corrosion preventive compound (D82) to all faying surfaces.

4. Place a new undrilled forward transverse beam (6) on cabin roof.

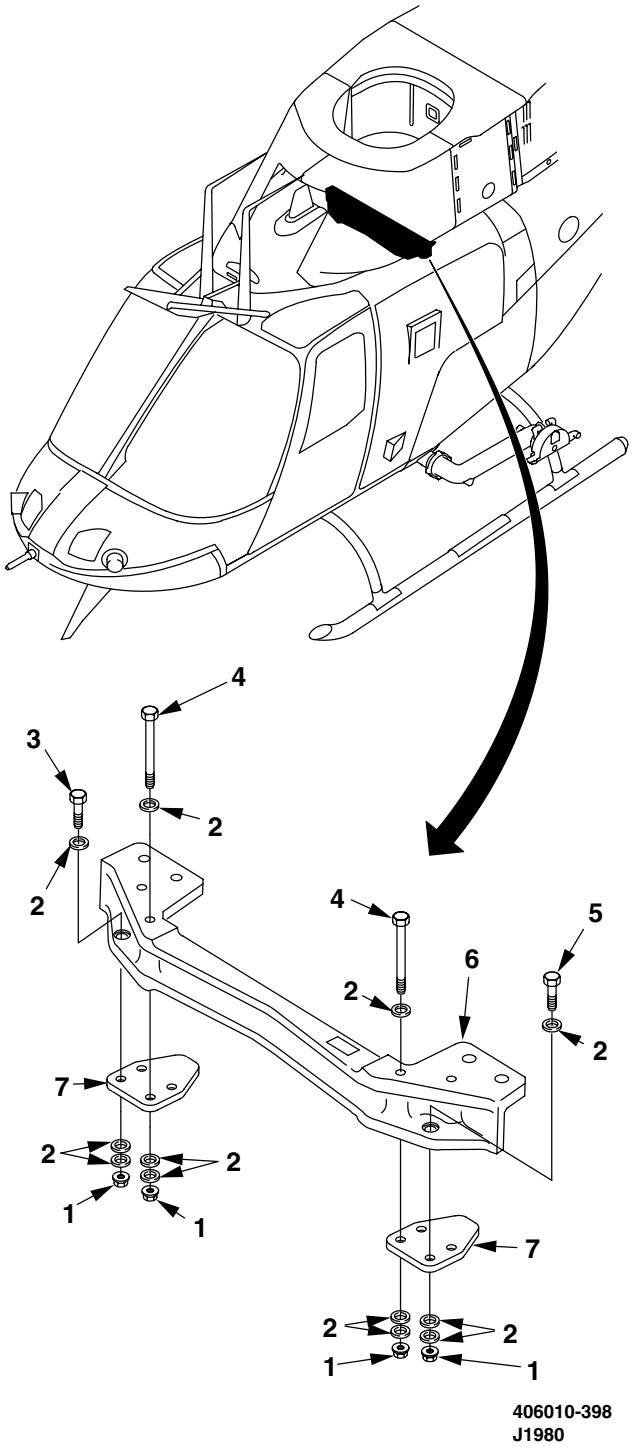
5. Install eight bolts (3, 4, and 5) with one washer (2) under head of each bolt through beam (6) and roof.

NOTE

A minimum of one washer (2) must be used under nut (1), or two washers may be used if required to obtain required torque without bolts (3, 4, and 5) turning.

6. Install washer (2) and nut (1) on each bolt (3, 4, and 5).

7. Torque eight nuts (1) **120 TO 160 INCH-POUNDS**.



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8. Install plate assembly T101299-103 (Part of B199) on forward transverse beam (6) and aft transverse beam (8) using four pins T101299-125, washers, and nuts (all Part of B199) through plate assembly and aft transverse beam (8).

9. Clamp plate assembly T101299-103 to aft transverse beam (8) and forward transverse beam (6) using C-clamps (B16).

Drilling Operations

10. Using pneumatic drill motor (B40), 5/16-inch bushing tip (Part of B199) and **5/16-inch** diameter drill bit, drill one **5/16-inch** diameter hole in new forward transverse beam (6). Secure with pin T101299-121, washer, and nut (all Part of B199). Drill three more holes using same procedure.

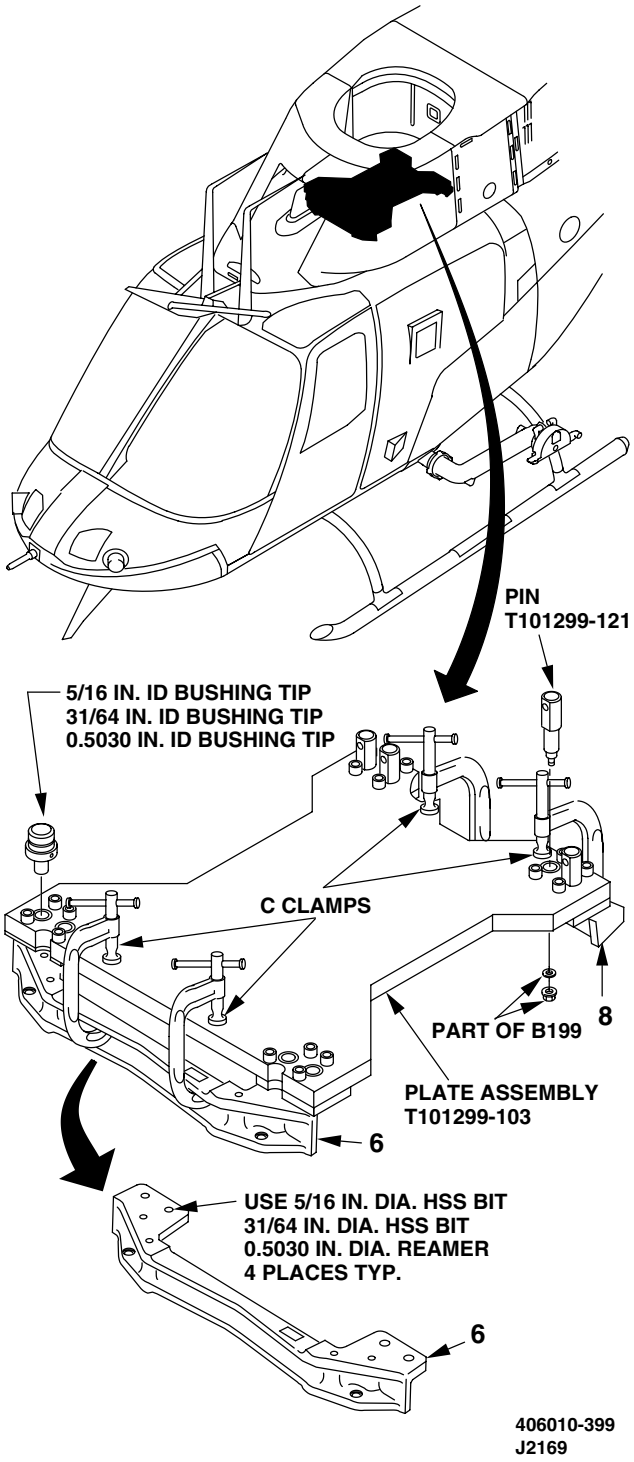
11. Remove nuts, washers, and pins T101299-121. Remove plate assembly T101299-103 (Part of B199) and new forward transverse beam (6).

12. Spotface underside of forward transverse beam (6) flanges, using drill press (B108) and **5/16-inch** diameter × **1/32-inch** radius standard counterbore with **5/16-inch** diameter pilot.

13. Prime spotfaced area only with one coat of epoxy primer coating (D98) (omit primer in holes). Apply in accordance with TM 55-1500-345-23.

NOTE

Remaining flange thickness of spotfaced area to be **0.360 inch minimum to 0.380 inch maximum**.



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2-4-12. TRANSVERSE BEAM ASSEMBLIES (AVIM) — REMOVAL/INSTALLATION (CONT)

14. Install forward transverse beam assembly (6) as outlined in steps 3, 4, 5, 6, and 7.

Epoxy Primer Coating

15. Apply epoxy polyamide primer (D98) to all bolted joints and faying surfaces.

16. Install plate assembly T101299-103.

17. Repeat step 10. using **31/64-inch** diameter bushing tip (Part of B199), 31/64-inch diameter drill bit, and three pins T101299-123 (Part of B199).

18. Repeat step 10. using **0.5030 inch** diameter bushing tip (Part of B199), **0.5030 inch** diameter reamer, and pins T101299-125 (Part of B199). Deburr holes after final ream.

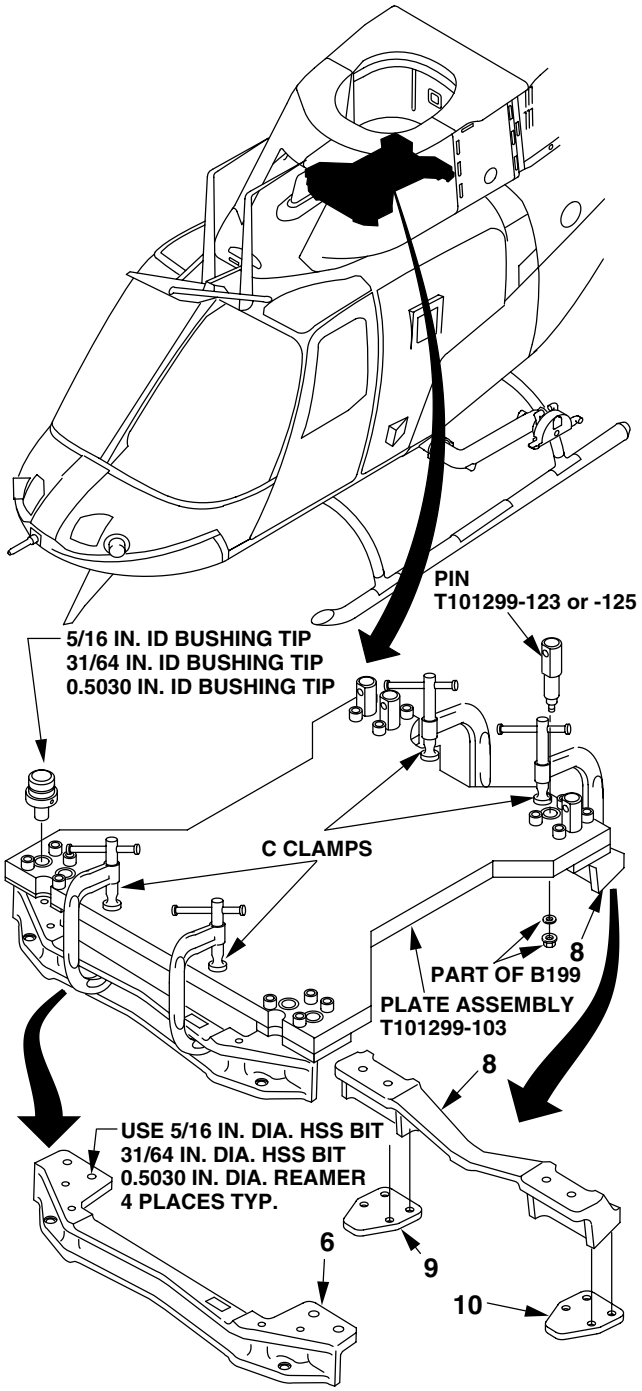
19. Remove plate assembly T101299-103.

REMOVE AFT TRANSVERSE BEAM

CAUTION

To prevent damage to shims or accidental dislocation, care should be exercised when removing aft transverse beam. If existing shims cannot be maintained, aft transverse beam cannot be replaced using this method and tool set T101299-101.

20. Remove existing aft transverse beam (8) as follows. Do not remove shims (9 and 10).



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2-4-12. TRANSVERSE BEAM ASSEMBLIES (AVIM) — REMOVAL/INSTALLATION (CONT)

21. Remove nuts (11), washers (12), bolts (13 and 14), and washers (12) from aft transverse beam (8).

22. Remove aft transverse beam (8) from roof.

INSTALL AFT TRANSVERSE BEAM

23. Place a new undrilled aft transverse beam (8) on roof.

24. Install eight bolts (13 and 14) with one washer (12) under head of each bolt (13 and 14).

NOTE

A minimum of one washer (2) shall be used, or more may be used as required to obtain required torque without bolts (3, 4, and 5) turning.

25. Install washer (12) and nuts (11) on eight bolts (13 and 14).

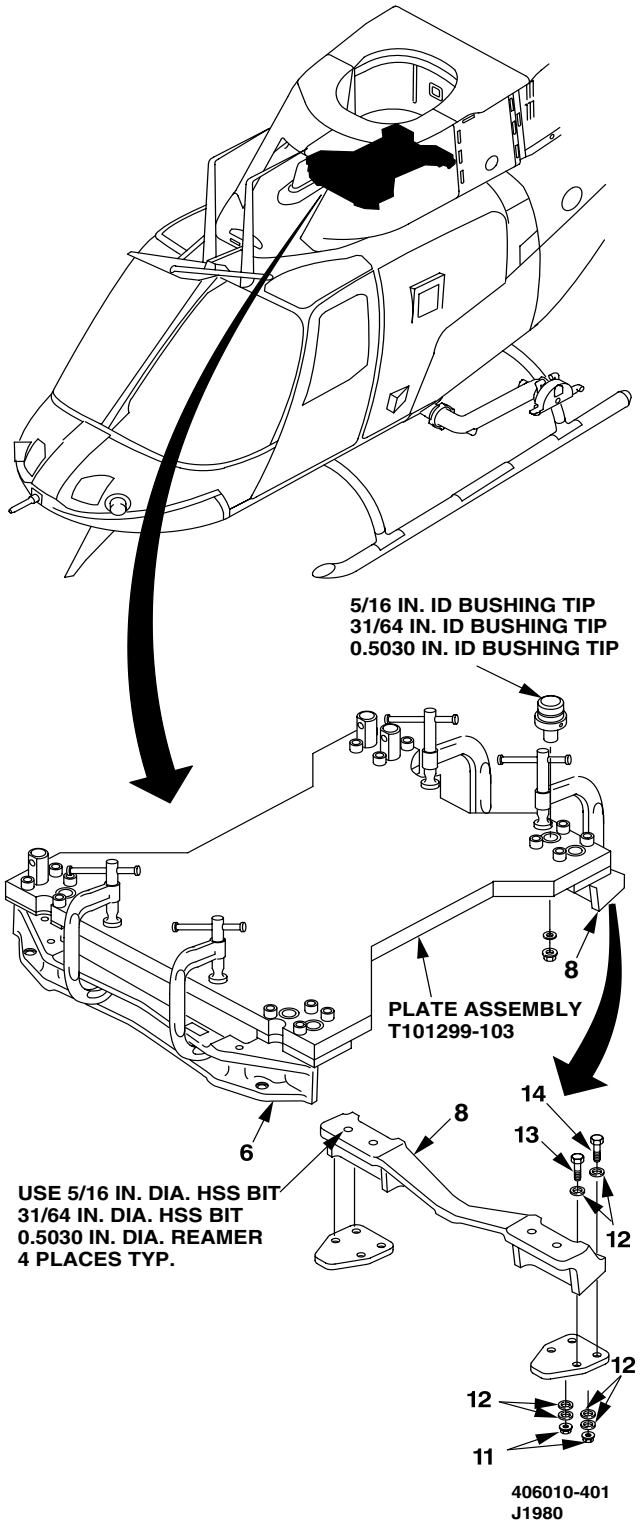
26. Tighten eight bolts (13 and 14) as required.

27. Install T101299-103 plate assembly (Part of B199) by pinning to previously reamed holes in new forward beam (6) and clamping to new forward beam (6), using method outlined in steps 8. and 9., above.

Drilling Operations

28. Drill, ream, and spotface holes in new aft transverse beam (8) by method used in steps 10. through 18. above.

29. Remove T101299-103 plate assembly. Torque bolts (13 and 14) **120 TO 160 INCH-POUNDS**.



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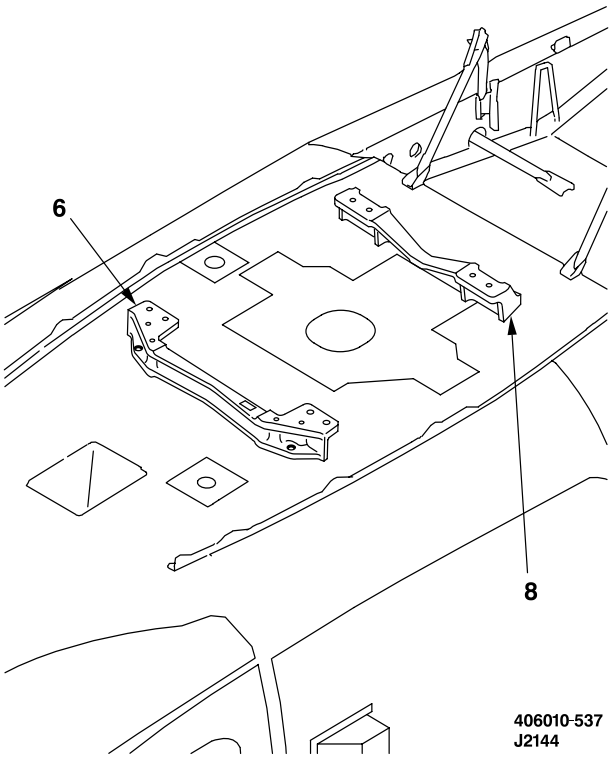
Sealing Compound

30. Apply sealing compound (D184) around edges of forward/aft transverse beams (6 and 8).

Corrosion Preventive Compound

31. Apply corrosion preventive compound (D82) to all bolted joints.



INSPECT

FOLLOW-ON MAINTENANCE

Install transmission (Task 6-3-6).

END OF TASK

CHAPTER 3

ALIGHTING GEAR

3-1. ALIGHTING GEAR

This chapter contains maintenance procedures for the alighting gear.

Section I. LANDING GEAR

3-2. LANDING GEAR

3-3. INTRODUCTION

This section contains: maintenance procedures for inspection, removal, cleaning, repair, and installation of the landing gear and its components. Standard torques are provided in Appendix P and TM 1-1500-204-23.

3-4. TASK LIST

The task list consists of those tasks required to support unit and intermediate level maintenance.

LIST OF TASKS

LIST OF TASKS (CONT)

LIST OF TASKS (CONT)

3-1-1. LANDING GEAR — INSPECTION

This task covers: Inspection (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

1. Inspect landing gear skid tubes (1) and crosstubes (2 and 3) for scratches, scuffs, nicks, and dents (Tasks 3-1-8, 3-1-11, and 3-1-26).

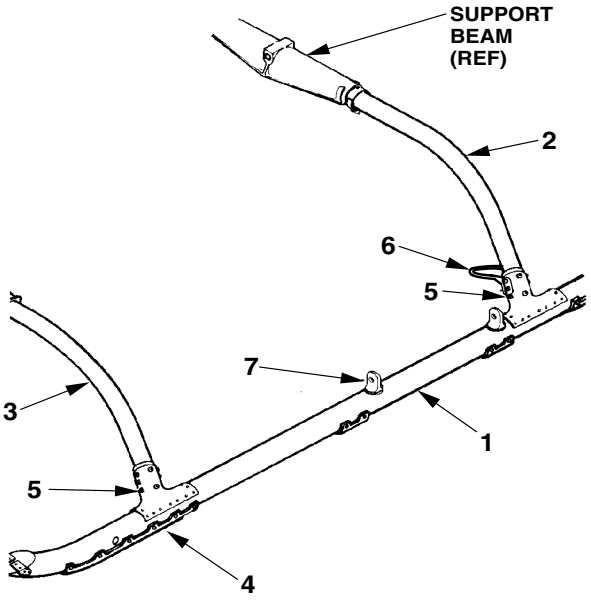
2. Inspect eight skid shoes (4) for wear, damage, and for loose or missing screws (Task 3-1-17).

3. Inspect aft and forward saddles (5) for cracks, damage, loose rivets, and loose screws.

4. Inspect aft crosstube support fitting (6) for cracks, damage, and loose screws.

5. Inspect eyebolts (7) for serviceability and security (Task 3-1-22).

6. Inspect crosstubes (2 and 3) for deflection (Task 3-1-3 or Task 3-1-4 for rapid deployment landing gear).



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FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).

END OF TASK

3-1-2. LANDING GEAR (RAPID DEPLOYMENT) — INSPECTION

This task covers: Inspection (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

GO TO NEXT PAGE

3-1-2. LANDING GEAR (RAPID DEPLOYMENT) — INSPECTION (CONT)

INSPECT LANDING GEAR

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PARTS (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

1. Inspect landing gear skid tubes (1) and crosstubes (2 and 3) for scratches, scuffs, nicks, and dents (Tasks 3-1-12, 3-1-27, and 3-1-37).

2. Inspect all skid shoes (4, 5, 6, and 7) for wear, damage, and loose or missing screws (Task 3-1-19).

3. Inspect aft saddles (8) and forward saddles (9) for cracks, damage, loose rivets, and loose screws (Task 3-1-12).

4. Inspect eyebolts (10) for serviceability and security (Task 3-1-23).

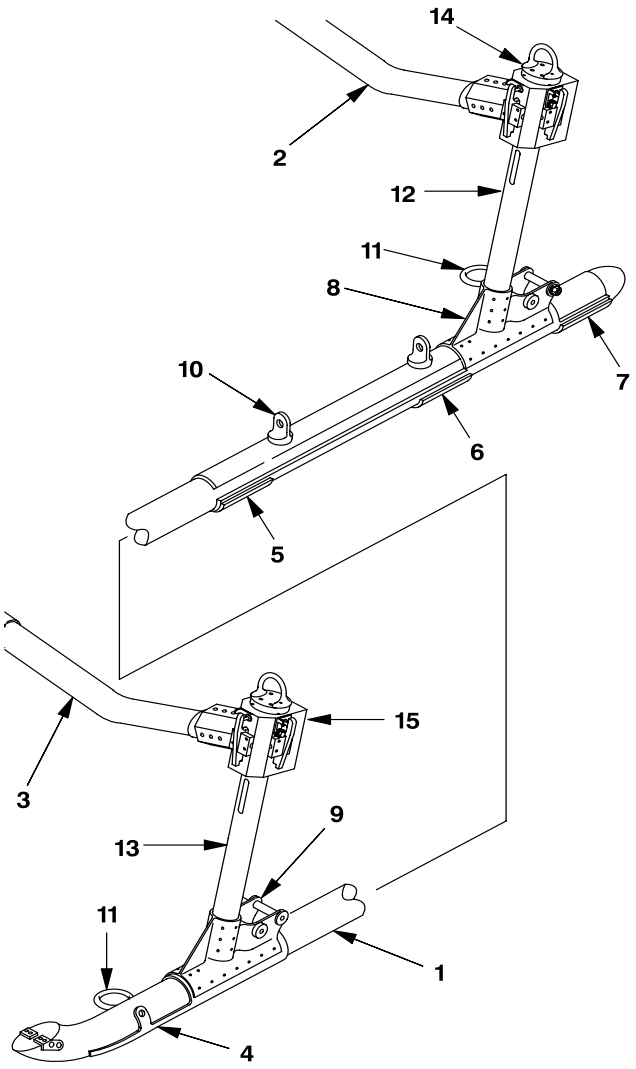
5. Inspect tow fittings (11) for serviceability and security (Task 3-1-50).

6. Inspect landing gear leg assemblies (12 and 13) and knuckle assembly fittings (14 and 15) for scratches, nicks, and dents (Task 3-1-52).

7. Inspect landing gear crosstubes (2 and 3) for deflection (Task 3-1-4).

FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).



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END OF TASK

3-1-3. LANDING GEAR CROSSTUBE — INSPECTION FOR DEFLECTION

This task covers: Inspection (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plumb Bob (B106)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

1. Raise and level helicopter on jacks so that landing gear is relieved of weight (Task 1-6-8).

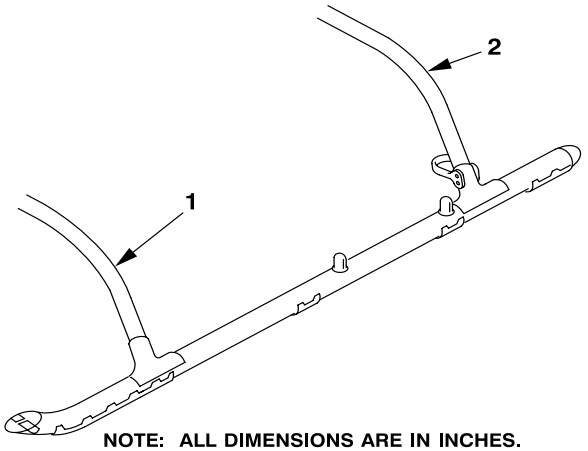
WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

2. Determine center of either crosstube (1 or 2). Drop a plumb line from center of crosstube (1 or 2) to ground.

3. Measure from plumb line to center of each skid at crosstube attachment point (3). Normal dimension is **37.25 inches**. If any measurement exceeds **38.25 inches**, replace defective crosstube (1 or 2) (Task 3-1-24 or 3-1-33).



FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).

END OF TASK

3-1-4. LANDING GEAR CROSSTUBE (RAPID DEPLOYMENT) — INSPECTION FOR DEFLECTION

This task covers: Inspection (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plumb Bob (B106)

Personnel Required:
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

INSPECT DEFLECTION

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PARTS (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

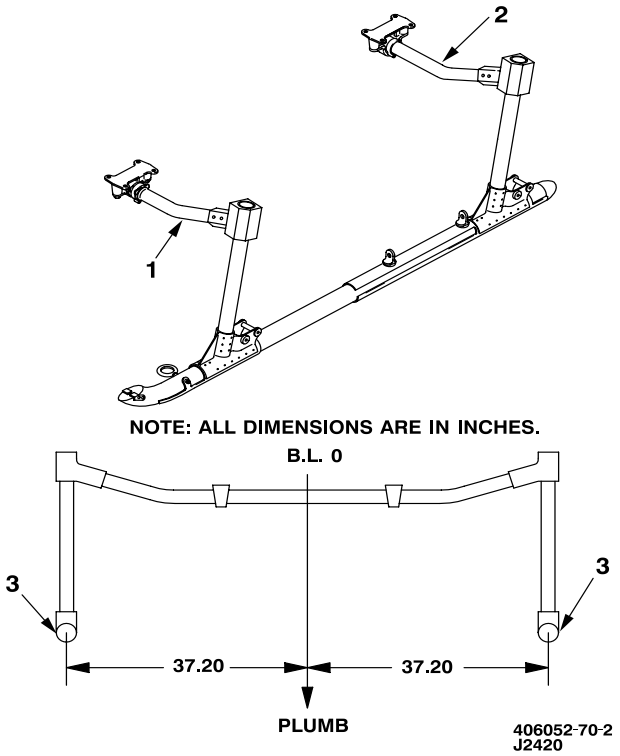
NOTE

Landing gear shall be installed on helicopter for performing deflection inspection. This inspection is performed with helicopter level and raised until landing gear is clear of ground.

1. Determine center of each crosstube (1 or 2).

2. Drop a plumb line from center of each crosstube (1 or 2).

3. Check dimensions between plumb line and centerline of each skid (3). Normal dimension is **37.20 inches**. If any dimension exceeds **38.20 inches**, replace defective crosstube (Task 3-1-25 or 3-1-34).



FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).

END OF TASK

3-1-5. LANDING GEAR — REMOVAL/INSTALLATION

This task covers: Removal (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Hydraulic Jack (3) (B75)
Torque Wrench (B239)

Material:
Adhesive (D15)
Rubber Gloves (D111)
Petrolatum (D152)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (4)

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

GO TO NEXT PAGE

REMOVE LANDING GEAR

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

1. Reposition weight on gear switch assembly (1 or 2).

a. Remove two screws (3) and washers (4) attaching weight on gear switch assembly (1 or 2) to fuselage.

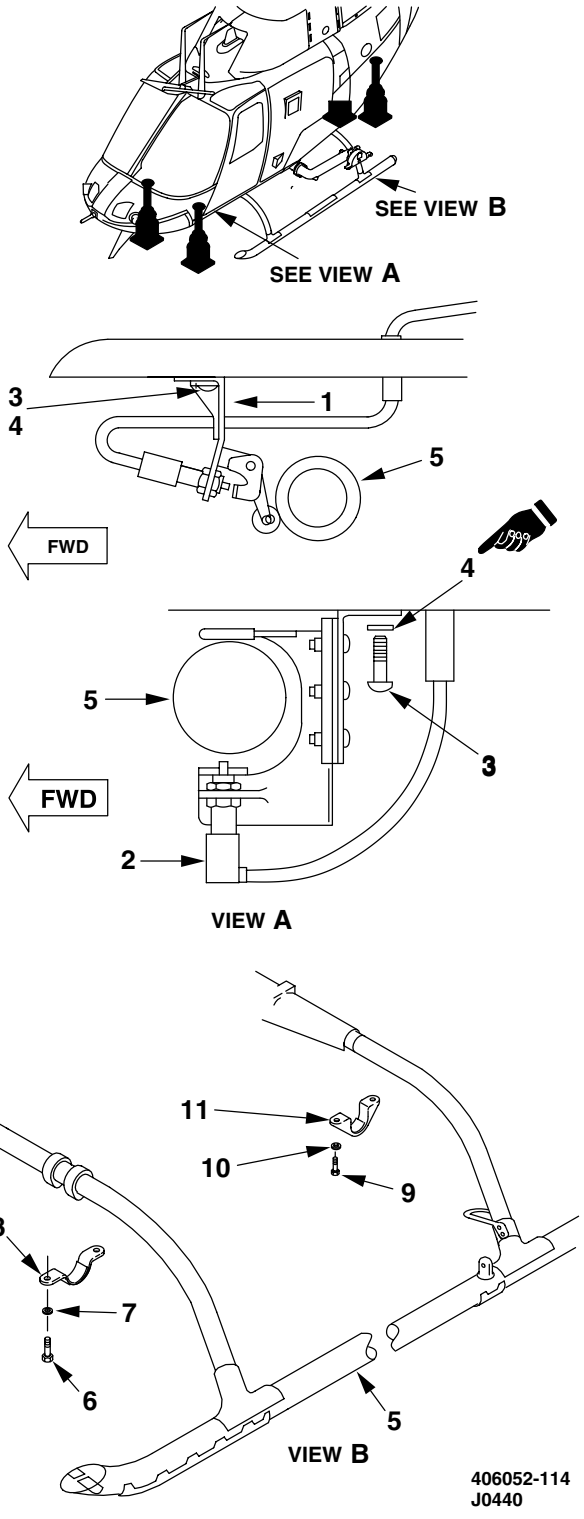
b. Move weight on gear switch assembly (1 or 2) clear of landing gear (5) and secure to helicopter.

2. Remove two bolts (6) and washers (7) each attaching forward two support assemblies (8) to fuselage.

3. Remove two bolts (9) and washers (10) each attaching two aft support assemblies (11) to fuselage.

4. Raise helicopter (Task 1-6-8).

5. Slide landing gear (5) out from under fuselage using care not to disturb jacks or helicopter.



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INSTALL LANDING GEAR

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

6. Ensure bolts (12 and 13) holding forward fuselage fittings (14) to bottom of fuselage are secure.

7. Position landing gear under fuselage and carefully lower helicopter to seat two aft fuselage fittings (15) and two forward fuselage fittings (14) on mounting points on crosstubes (16 and 17).

8. Ensure cushions (18) are secured to support assemblies (8).

9. Apply thin coating of petrolatum (D152) to cushions (18).

10. Install support assemblies (8) with two bolts (6) and washers (7) each to secure forward crosstube (16) to forward fuselage fittings (14). Install bolts (6) tight enough to bring cushions (18) in contact with crosstube.

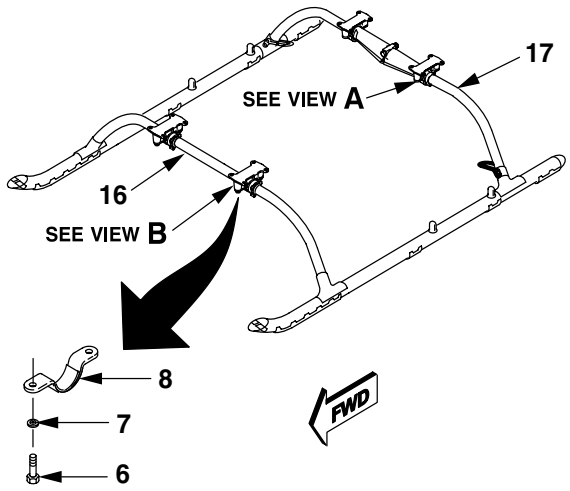
11. Measure and record gap at bolts (6) between support assemblies (8) and fuselage fittings (14). Gap shall be a minimum of **0.04 inch**. This is to determine amount of squeeze on cushions (18).

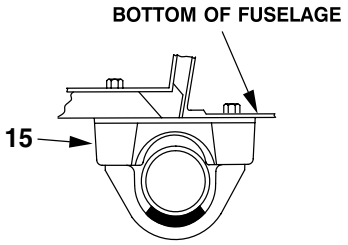
NOTE

To maintain uniform preload on cushion, torque bolts shall be torqued in increments of **30 INCH-POUNDS**.

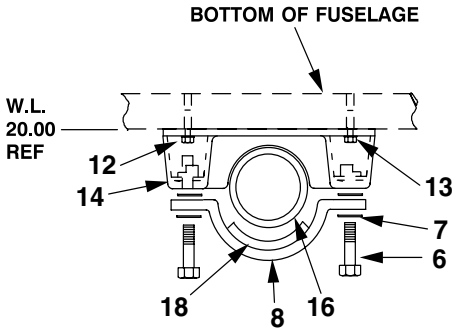
12. Torque bolts (6) **100 TO 140 INCH-POUNDS**.

13. Check for gap at bolts (6) between support assemblies (8) and forward fuselage fittings (14). Measurement must be a minimum of **0.04 inch** less than above measurement.





VIEW A
LOOKING INBOARD LEFT SIDE



VIEW B
LOOKING INBOARD LEFT SIDE

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Adhesive

14. Determine if a gap exists between the mating surfaces of forward crosstube support assemblies (8) and fuselage fittings (14). Eliminate gap by bonding washers (19) or laminated shim around bolt holes of support assemblies (8) using adhesive (D15). Maximum of three washers (19) or **0.048 inch** laminated shim is allowable at each bolt hole.

NOTE

Either NAS1149C0516R washers or 120-004C2010, 120-005C2010, 120-006C2010, and 120-007C2010 laminated shims may be used to eliminate gaps.

15. Ensure cushions (20) are secured to aft crosstube support assemblies (11).

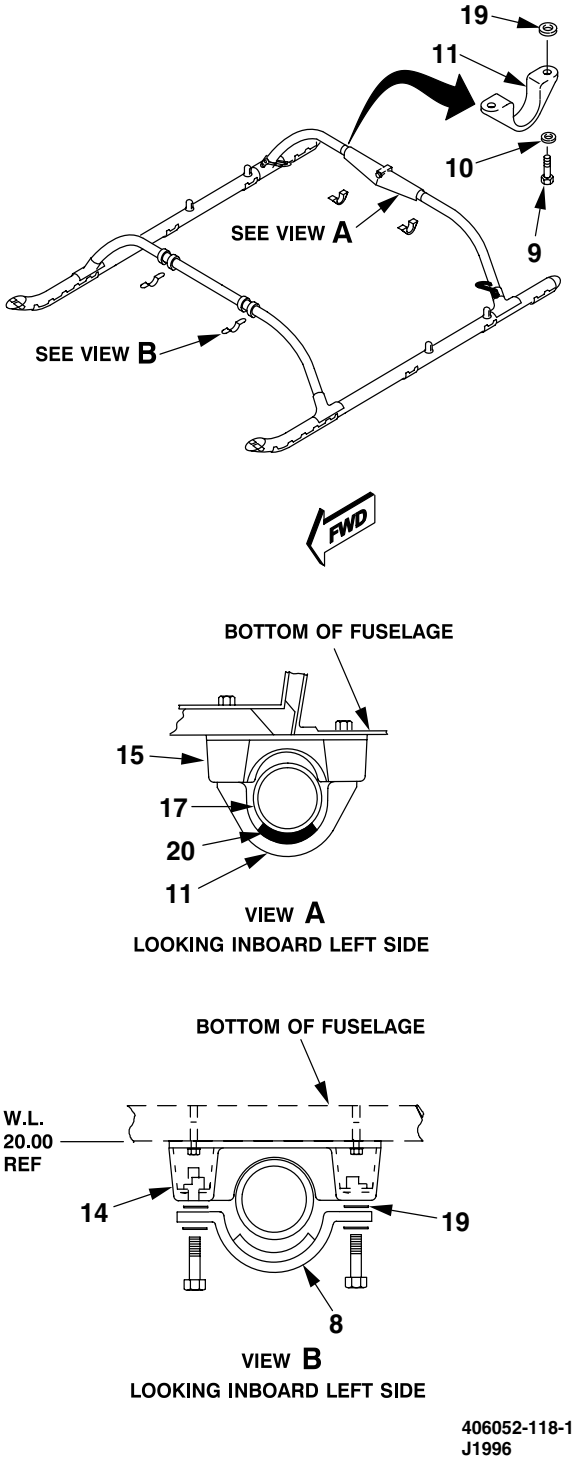
16. Apply thin coating of petrolatum (D152) to cushions (20).

17. Install support assemblies (11) with two bolts (9) and washers (10) each to secure aft crosstube (17) to aft fuselage fittings (15). Install bolts (9) tight enough to bring cushions (20) in contact with crosstube.

NOTE

To maintain uniform preload on cushion, bolts shall be torqued in increments of **30 INCH-POUNDS**.

18. Dry torque bolts (9) **100 TO 140 INCH-POUNDS**.



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19. Check for gap at bolts (9) between support assemblies (11) and aft fuselage fittings (15). No gap allowed.

Adhesive

20. Determine if a gap exists between the mating surfaces of support assemblies (11) and fuselage fittings (15). Eliminate gap by bonding washers (21) or laminated shim around bolt holes of support assemblies (11) using adhesive (D15). Maximum of three washers (21) or **0.048 inch** laminated shims is allowable at each bolt hole.

NOTE

Either NAS1149C0516R washers or 120-004C2010, 120-005C2010, 120-006C2010, and 120-007C2010 laminated shims may be used to eliminate gaps.

21. Reposition weight on gear switch assembly (1 or 2).

22. Secure weight on gear switch assembly (1 or 2) with two screws (3) and washers (4).

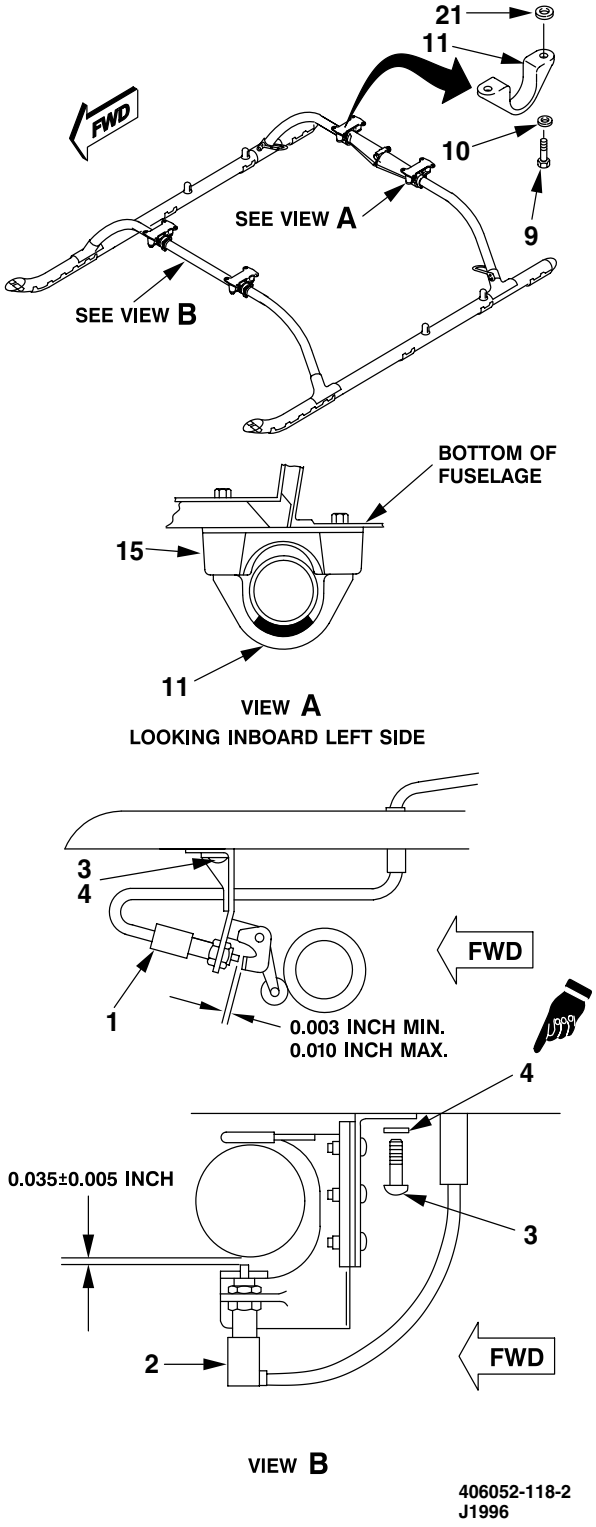
23. Check switch assembly (1) plunger gap **0.003 inch minimum to 0.010 inch maximum** clearance. See view B. If clearance is not correct, adjust clearance (Task 9-6-1).

24. Check switch assembly (2) plunger gap **0.030 inch minimum to 0.040 inch maximum** clearance. See view B. If clearance is not correct, adjust clearance (Task 9-6-77).

INSPECT

FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).



END OF TASK

3-1-6. LANDING GEAR (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B239)

Material:
Adhesive (D15)
Rubber Gloves (D111)
Petrolatum (D152)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (4)

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

GO TO NEXT PAGE

REMOVE LANDING GEAR

1. Reposition weight on gear switch assembly (1).

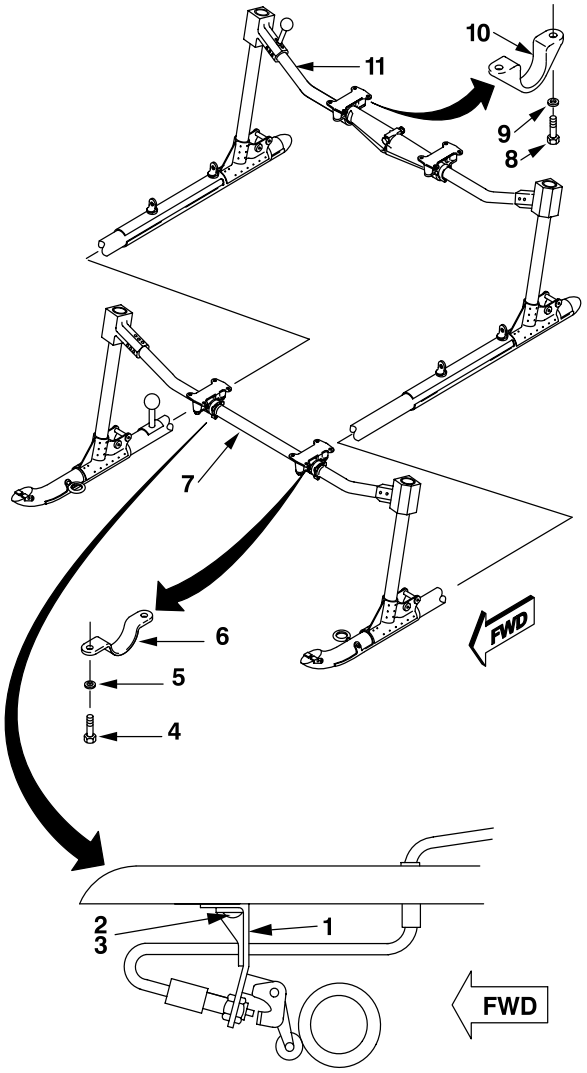
a. Remove two screws (2) and washers (3) attaching weight on gear switch assembly (1) to fuselage.

b. Move weight on gear switch assembly (1) clear of landing gear and secure to helicopter.

2. Remove two bolts (4) and washers (5) each and remove two support assemblies (6) that secure forward crosstube (7) to fuselage.

3. Remove two bolts (8) and washers (9) each and remove two support assemblies (10) that secure aft crosstube (11) to fuselage.

4. Raise helicopter sufficiently to clear landing gear assembly and facilitate removal.



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INSTALL LANDING GEAR

5. Ensure bolts (12 and 13) holding fuselage fittings (14) and spacers (15) to bottom of fuselage are secure.

6. Position landing gear under fuselage and carefully lower helicopter to seat two aft fuselage fittings (16) and two forward fuselage fittings (14) on mounting points on crosstubes (11 and 7).

7. Ensure cushions (17) are secured to support assemblies (6).

8. Apply thin coating of petrolatum (D152) to cushions (17).

9. Install support assemblies (6) with two bolts (4) and washers (5) each to secure forward crosstube (7) to spacers (15) and fuselage fittings (14). Install bolts (4) tight enough to bring support assembly cushions in contact with crosstube.

10. Measure and record gap at bolts between support assemblies (6) and fuselage fittings (14). This is to determine amount of squeeze on cushions (17).

11. Torque bolts (4) **100 TO 140 INCH-POUNDS**.

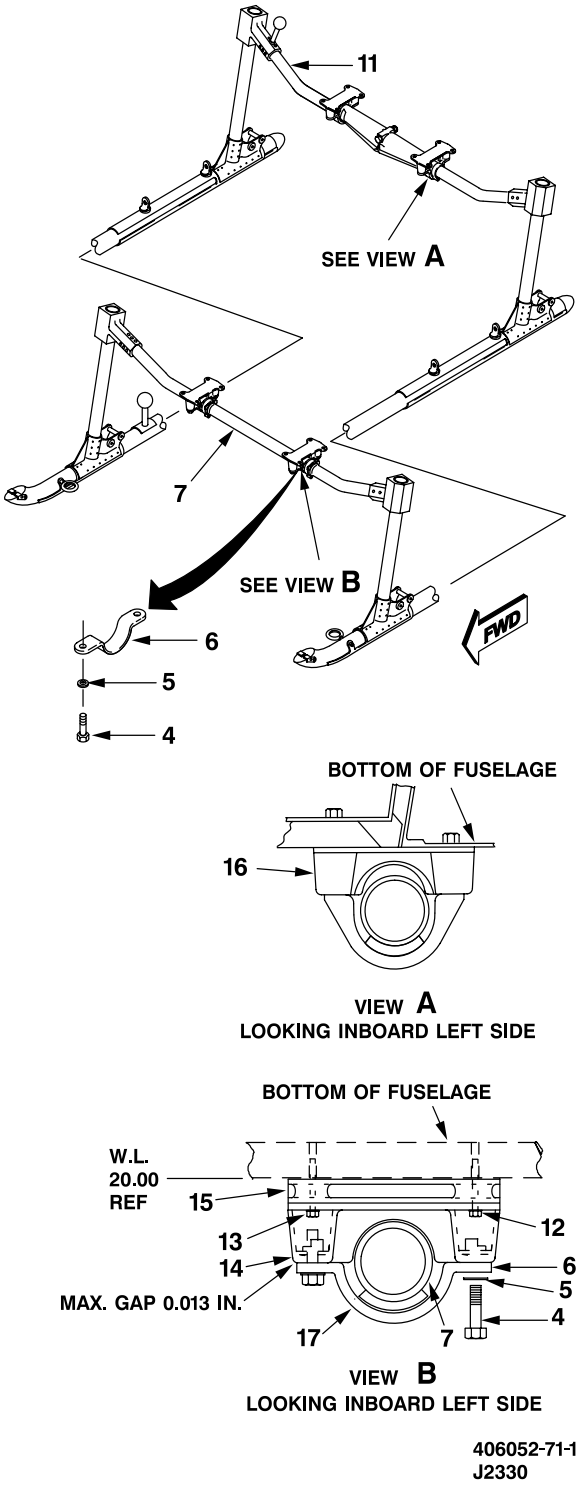
NOTE

Cushions (17) shall be squeezed a minimum of **0.04 inch** after bolts (4) are torqued.

12. Measure gap at bolts between support assemblies (6) and fuselage fittings (14). Measurement must be a minimum of **0.04 inch** less than above measurement.

Adhesive

13. Check gap at bolts between support assemblies (6) and fuselage fittings (14). Maximum gap is **0.013 inch**. Shim as required by bonding washers (5) around bolt holes of support assemblies (6) on surface adjoining fitting (14) with adhesive (D23) when gap exceeds **0.013 inch**. Maximum three washers allowable at each bolt (4).



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14. Ensure cushions (18) are secured to support assemblies (10).

15. Apply thin coating of petrolatum (D152) to cushions (18).

16. Install support assemblies (10) with two bolts (8) and washers (9) each to secure aft crosstube (11) to fuselage fittings (16). Install bolts (8) tight enough to bring support assembly cushions in contact with crosstube.

17. Torque bolts (8) **100 TO 140 INCH-POUNDS**.

Adhesive

18. Check gap at bolts between support assemblies (10) and fuselage fittings (16). Maximum gap is **0.013 inch**. Shim as required by bonding washers (9) around bolt holes of support assemblies (10) on surface adjoining fitting (16) with adhesive (D15) when gap exceeds **0.013 inch**. Maximum three washers allowable at each bolt (8).

19. Reposition weight on gear switch assembly (1).

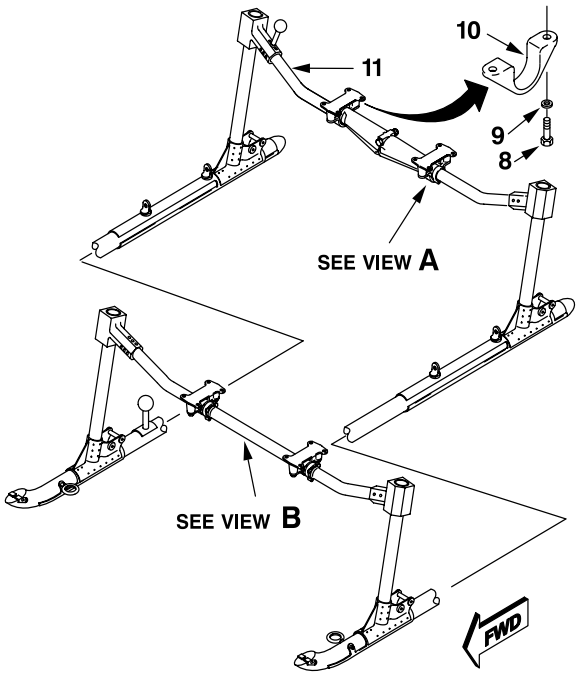
20. Secure weight on gear switch assembly (1) with two screws (2) and washers (3).

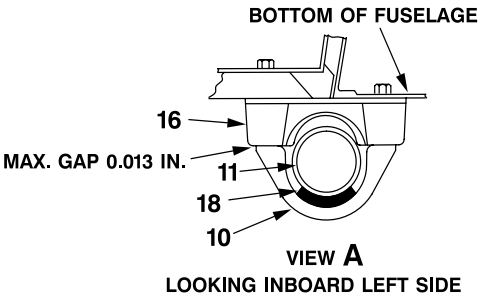
21. Check weight on gear switch assembly (1) plunger gap. Minimum clearance is **0.003 inch** and maximum clearance is **0.010 inch**. If clearance is not correct, adjust clearance (Task 9-6-1).

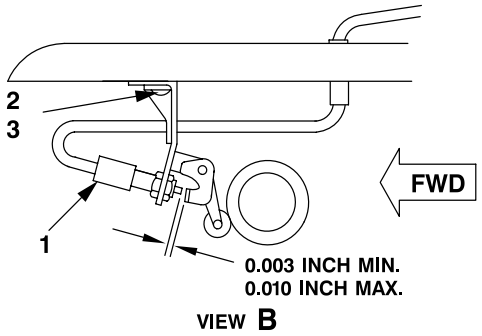
INSPECT

FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).







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END OF TASK

3-1-7. FORWARD CROSSTUBE STRAP — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Adhesive (D5)
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

CLEAN

Drycleaning Solvent

1. Clean strap surface with drycleaning solvent (D199).

2. Dry strap with a wiping rag (D164).

INSPECT

3. Inspect crosstube strap to limits shown. See figure Forward Crosstube Strap — Damage Limits.

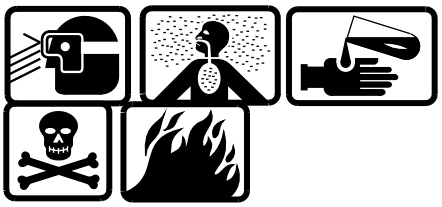
4. Inspect cushion for wear, cracks, torn edges, and adhesion to strap.

REPAIR

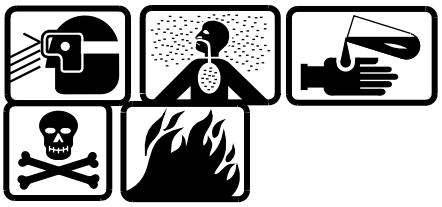
Sanding Operations

5. Polish out reparable damage on strap using 400 grit sandpaper (D175).

INSPECT

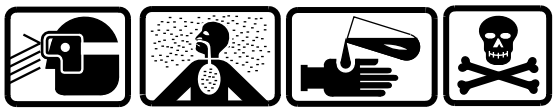


Epoxy Primer Coating



Polyurethane Coating

6. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150) (Task 2-2-65).



Adhesive

7. Remove damaged cushion and burnish surface of strap. Adhere new cushion to strap with adhesive (D5). Allow 24 hours drying time before assembly, 5 days for maximum strength.

INSPECT

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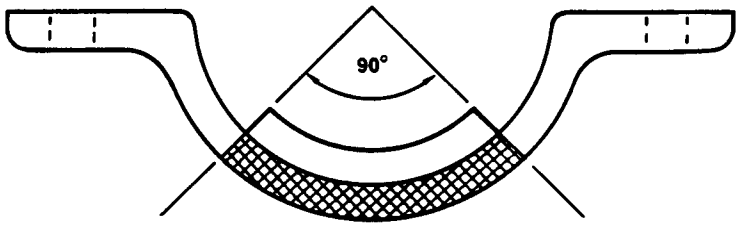


DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	0.005 In. before and 0.010 in. after repair	0.010 In. before and 0.020 in. after repair
CORROSION	0.005 In. before and 0.010 in. after repair	0.010 In. before and 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.	0.25 Sq. in.
NUMBER OF REPAIRS	One per segment	Not critical
EDGE CHAMFER TO REMOVE DAMAGE	0.03 In.	0.03 In.
BORE DAMAGE	0.002 In. x 1/4 circumference	0.002 In. x 1/4 circumference

406052-41
J0440

Forward Crosstube Strap — Damage Limits

END OF TASK

3-1-8. AFT CROSSTUBE SUPPORT ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Adhesive (D5)
Drycleaning Solvent (D199)
Adhesive Primer (D29)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean support assembly surface with drycleaning solvent (D199).

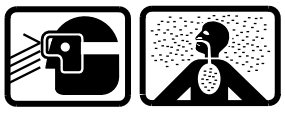
2. Dry support assembly with a wiping rag (D164).

INSPECT

3. Inspect support assembly to limits shown. See figure Aft Crosstube Support Assembly — Damage Limits.

4. Inspect cushion for any sign of wear, cracks, torn edges, and adhesion to support.

REPAIR

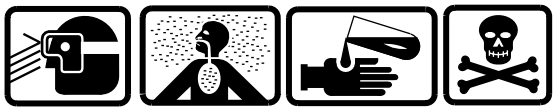


Sanding Operations

5. Polish out reparable damage on support using 400 grit sandpaper (D175).

INSPECT

6. Apply coat of adhesive primer (D29) followed by coat of paint (D150) to repaired area (TM 55-1500-345-23).



Adhesive

7. Remove worn, torn, or cracked cushion and burnish surface of support. Bond cushion to support with adhesive (D5). Allow 24 hours drying time before assembly, 5 days for maximum strength.

8. Rebond or replace cushion if bond is deteriorating. Bond cushion to support with adhesive (D5). Allow 24 hours drying time before assembly, 5 days for maximum strength.

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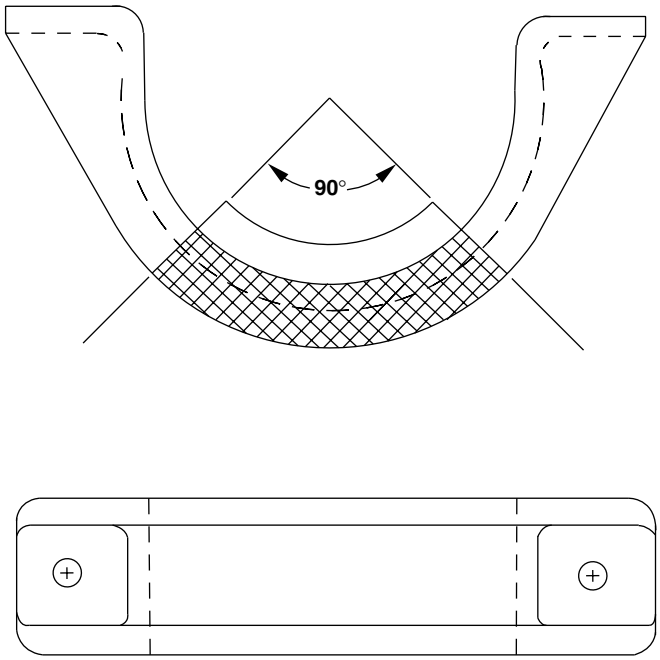

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	0.005 In. before and 0.010 in. after repair	0.010 In before and 0.020 in. after repair
CORROSION	0.005 In. before and 0.010 in. after repair	0.010 In. before and 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.	0.25 Sq. in.
NUMBER OF REPAIRS	Two per segment	Not critical
EDGE CHAMFER TO REMOVE DAMAGE	0.03 In.	0.03 In.
BORE DAMAGE	0.002 In. x 1/4 circumference	0.002 In. x 1/4 circumference

406052-39
G6159

Aft Crosstube Support Assembly — Damage Limits

END OF TASK

3-1-9. AFT CROSSTUBE SUPPORT ASSEMBLY (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Adhesive (D20)
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean support assembly surface with drycleaning solvent (D199).

2. Dry support assembly with a wiping rag (D164).

INSPECT

3. Inspect crosstube support assembly to limits shown. See figure Rapid Deployment Aft Crosstube Support Assembly — Damage Limits.

4. Inspect cushion for wear, cracks, torn edges, and adhesion to support assembly.

REPAIR

Sanding Operations

5. Polish out reparable damage on support assembly using 400 grit sandpaper (D175).

INSPECT

6. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

Adhesive

7. Remove damaged cushion and burnish surface of support assembly. Adhere new cushion to support assembly with adhesive (D20). Allow 24 hours drying time before assembly, 5 days for maximum strength.

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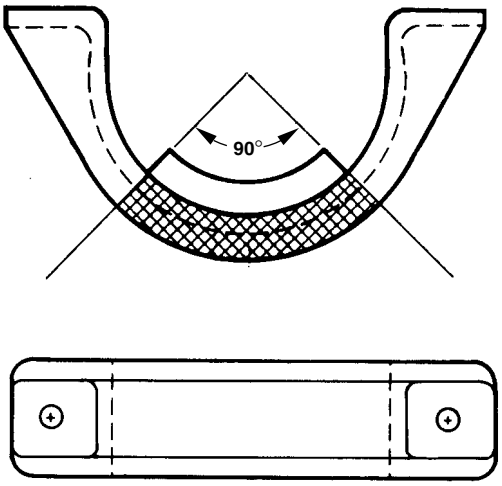
3-1-9. AFT CROSSTUBE SUPPORT ASSEMBLY (RAPID DEPLOYMENT) — CLEANING/INSPECTION/ REPAIR (CONT)



DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	0.005 In. before repair 0.010 in. after repair	0.010 In. before repair 0.020 in. after repair
CORROSION	0.005 In. before repair 0.010 in. after repair	0.010 In. before repair 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.	0.25 Sq.in.
NUMBER OF REPAIRS	Two per segment	Not critical
EDGE CHAMFER TO REMOVE DAMAGE	0.030 In. x 45°	0.030 In. x 45°
BORE DAMAGE	0.002 In. x 1/4 circumference	0.002 In. x 1/4 circumference

NOTE:

No cracks permitted.

406052-91
H3806

Rapid Deployment Aft Crosstube Support Assembly — Damage Limits

END OF TASK

3-1-10. FORWARD CROSSTUBE SUPPORT ASSEMBLY (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Adhesive (D20)
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean support assembly surface with drycleaning solvent (D199).

2. Dry support assembly with a wiping rag (D164).

INSPECT

3. Inspect crosstube support assembly to limits shown. See figure Rapid Deployment Forward Crosstube Support Assembly — Damage Limits.

4. Inspect cushion for wear, cracks, torn edges, and adhesion to support assembly.

REPAIR

Sanding Operations

5. Polish out reparable damage on support assembly using 400 grit sandpaper (D175).

INSPECT

6. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

Adhesive

7. Remove damaged cushion and burnish surface of support assembly. Adhere new cushion to support assembly with adhesive (D20). Allow 24 hours drying time before assembly, 5 days for maximum strength.

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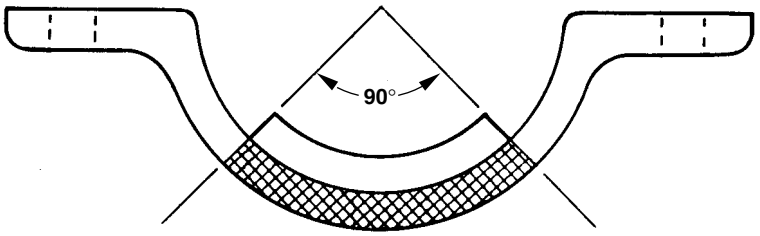
3-1-10. FORWARD CROSSTUBE SUPPORT ASSEMBLY (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	0.005 In. before repair 0.010 in. after repair	0.010 In. before repair 0.020 in. after repair
CORROSION	0.005 In. before repair 0.010 in. after repair	0.010 In. before repair 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.	0.25 Sq.in.
NUMBER OF REPAIRS	One per segment	Not critical
EDGE CHAMFER TO REMOVE DAMAGE	0.030 In. x 45°	0.030 In. x 45°
BORE DAMAGE	0.002 In. x 1/4 circumference	0.002 In. x 1/4 circumference

NOTE:

No cracks permitted.

406052-90
H3806

Rapid Deployment Forward Crosstube Support Assembly — Damage Limits

END OF TASK

3-1-11. SKID TUBE ASSEMBLY — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
Blind Hand Riveter (B117)

Material:
Adhesive (D15)
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Sealing Compound (D184)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 1-1520-266-23
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean skid tube surface with drycleaning solvent (D199).

2. Dry skid tube with a wiping rag (D164).

INSPECT

3. Inspect skid tube for scratches, nicks, and dents to limits shown. See figure Skid Tube Assembly — Damage Limits.

a. Negligible damage.

(1) Circumferential scratches and nicks in the skid tube not exceeding a depth of **0.025 inch** and an arc length of 90 degrees.

(2) Scratches, scuffs and nicks running longitudinally in the skid tube may be of any length but not to exceed a depth of **0.025 inch**.

(3) Smooth dents in the skid tubes which do not exceed **0.250 inch** in depth and **1.00 inch** in diameter.

(4) Corrosion damage not exceeding **0.025 inch** depth over an area not exceeding **0.250 inch** circumference by **3.00 inches** in length.

(5) Scratches, dents and nicks of any depth and length aft of the aft crosstube saddle.

(6) Scratches, dents and nicks of any depth and length in the curved portion only of the tube forward of the forward crosstube saddle.

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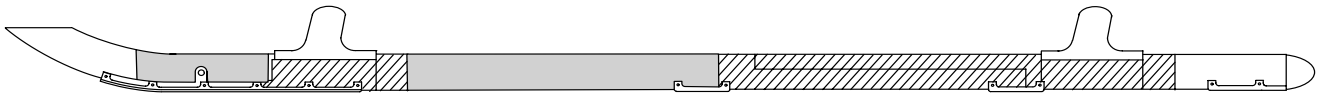


SKID TUBE ASSEMBLY

REPAIRS BY PATCHING NOT PERMITTED

REPAIRS BY PATCHING PERMITTED

REPAIRS NOT REQUIRED IN THIS AREA - HOLES SHOULD BE PLUGGED TO PREVENT MOISTURE ENTRAPMENT.

NOTE

No patches allowed on doublers.

All dimensions are in inches.

406052-124
J0440

Skid Tube Assembly — Damage Limits

b. Repairable damage.

(1) Scratches, scuffs and nicks exceeding **0.025 inch** deep may be repaired by patching. Refer to repair procedures and figure Skid Tube Assembly — Damage Repair.

(2) Smooth or sharp dents exceeding **1.00 inch** diameter and **0.250 inch** in depth but not to exceed **2.00 inches** in diameter may be repaired by patching. Refer to repair procedures and figure Skid Tube Assembly — Damage Repair.

(3) Holes in skid tubes up to a diameter of **2.00 inches** through one surface of the tube only may be repaired by patching.

(4) Damage resulting in a bond failure between the midpoint doubler and the tube up to 20% of the doubler may be repaired. Refer to repair procedures and figure Skid Tube Assembly — Damage Repair.

(5) Damage resulting in a bond failure between the midpoint doublers and the tube in excess of 20% of the doubler area necessitates replacement of the doubler. Refer to repair procedures.

c. Damage requiring replacement.

(1) Damage to the skid tube in excess of the repairable damage limits necessitates replacement.

(2) Damage to the crosstube within **3.00 inches** of the crosstube saddle and in excess of the negligible limits necessitates replacement.

REPAIR

NOTE

For all repair procedures, see figure Skid Tube Assembly — Damage Repair.

4. Repair by polishing out damage:

GO TO NEXT PAGE

Sanding Operations

a. Polish out reparable damage using 400 grit sandpaper (D175).

INSPECT

b. Apply coat of epoxy primer (D98) to repaired area followed by a coat of paint (D150) (TM 55-1500-345-23).

CAUTION

To prevent failure of the crosstube at the attach location, the maximum weight which can be added to each standard gear skid tube is 7 pounds.

5. To repair by patching proceed as follows:

a. Polish out scratches and trim and smooth hole as shown.

b. Fabricate a patch from **0.090 inch** aluminum alloy sheet or unserviceable tube of required size.

c. Lay out rivet hole pattern in accordance with TM 1-1500-204-23 and form patch to fit contour of skid tube as shown.

Drilling Operations

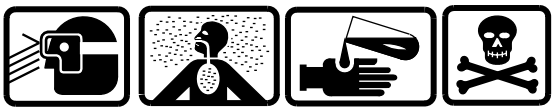
d. Securely clamp patch in place on skid tube and drill rivet holes using a No.10 drill bit.

e. Secure patch in place using **0.1875 inch** diameter blind type rivets.

INSPECT

f. Apply epoxy primer coating (D98) and paint (D150) in accordance with TM 55-1500-345-23.

6. Doubler repair with bond failure of 20% or less:



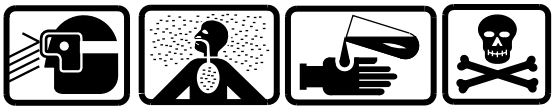
Adhesive

a. Rebond doubler with adhesive (D15).

b. Install three additional blind rivets equally spaced on each side of doubler in accordance with TM 1-1500-204-23.

INSPECT

7. Doubler repair with bond failure of more than 20%.



Adhesive

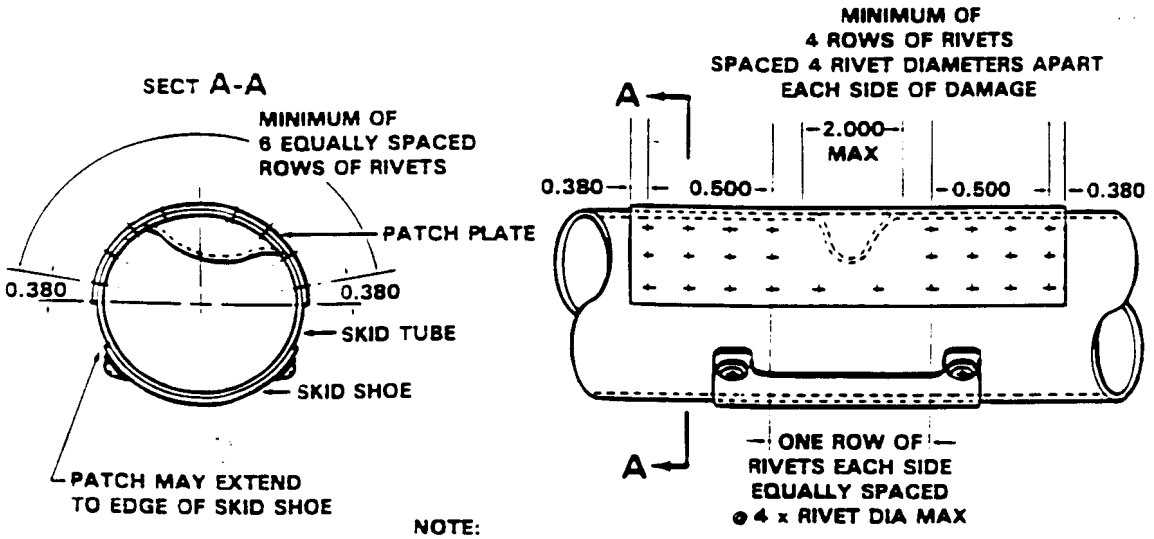
a. Bond new doubler with adhesive (D15).

b. Install three additional blind rivets equally spaced on each side of doubler in accordance with TM 1-1500-204-23.

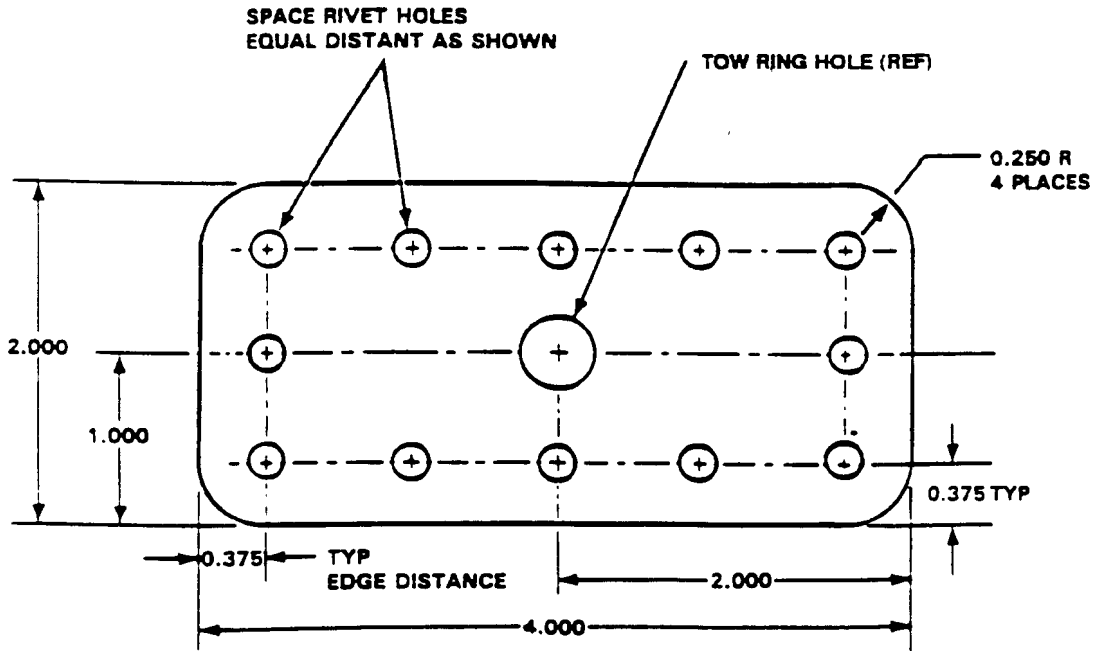
INSPECT

GO TO NEXT PAGE

3-1-11. SKID TUBE ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)



TYPICAL PATCH REPAIR



TOW RING ATTACH POINT REINFORCEMENT

1. OUTBOARD AND INBOARD PLATES - SAME SIZE
2. FOR TOW RING HOLE SIZE
3. MATERIAL: 4.000 X 2.000 X 0.120 INCH 2024 T3-ALUM.
4. CONTOUR TO FIT SKID TUBE
5. ATTACH TO SKID TUBE WITH 0.188 DIA CHERRY RIVETS

406052-120
H5304

Skid Tube Assembly — Damage Repair (Sheet 1 of 2)

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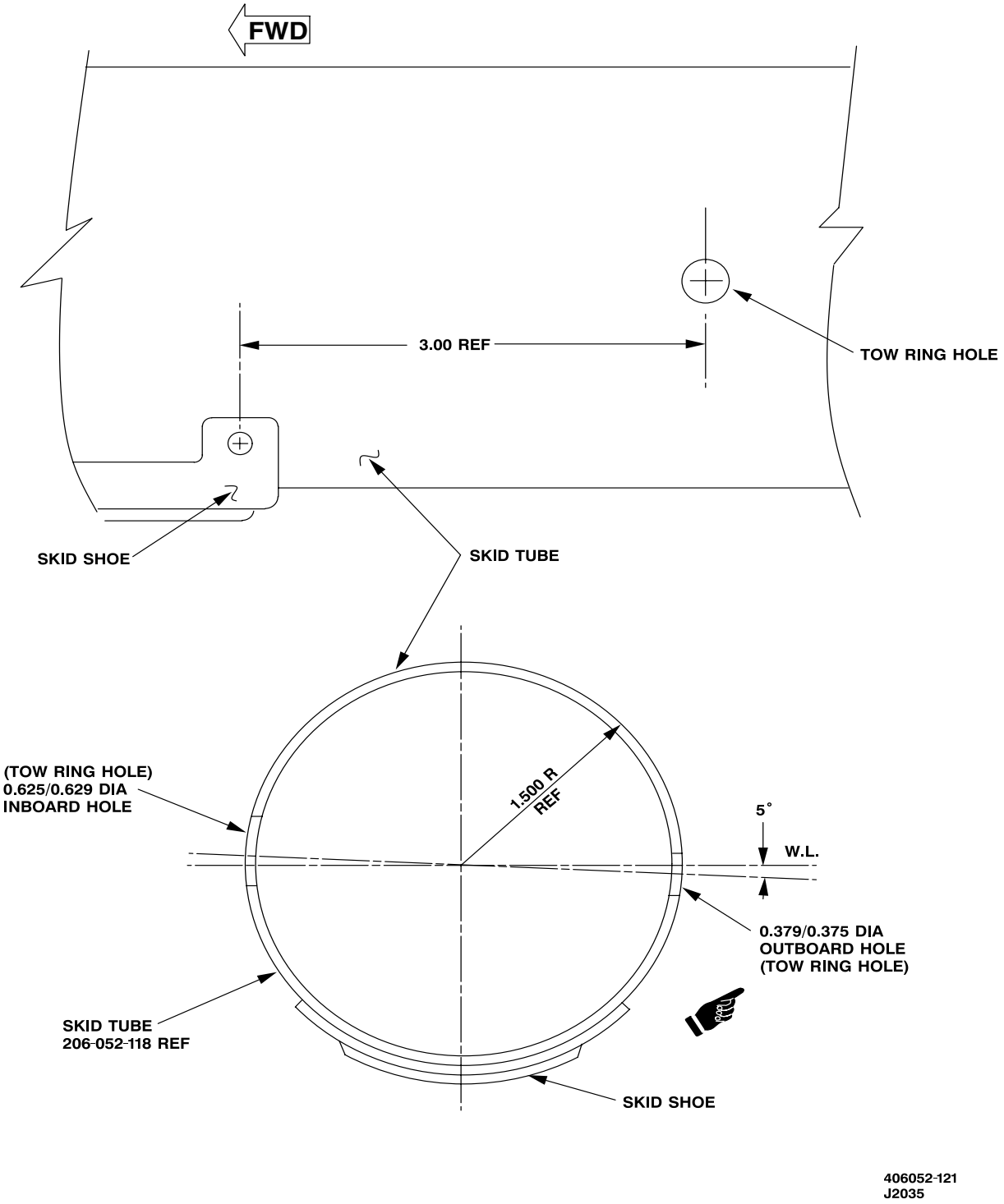


Skid Tube Assembly — Damage Repair (Sheet 2 of 2)

GO TO NEXT PAGE

3-1-11. SKID TUBE ASSEMBLY — CLEANING/INSPECTION/REPAIR (CONT)

8. Repair skid tube at tow fitting attachment points as follows:

a. Fabricate two doubler plates as shown, one each for inboard and outboard side.

Drilling Operations

b. Drill center hole in doublers for tow ring, using dimensions shown for hole sizes and location.

c. Lay out rivet pattern on doubler plates as shown. Do not drill rivet holes at this time.

d. Contour doubler plates to fit skid tubes.

e. Temporarily tape inboard and outboard doubler plates in place. Ensure doubler plates do not interfere with the skid shoe.

f. If interference exists between skid shoes and doubler plates, trim doubler plates to give approximately **0.125 inch** clearance and adjust rivet pattern as required.

g. Clean up tow ring mounting hole area.

(1) Fluorescent penetrant inspect hole area (TM 1-1520-266-23).

Sanding Operations

(2) Polish out scratches, trim and smooth tow ring mounting hole.

(3) Repair local skid shoe damage if required. Refer to repair procedures step 6.a.

h. Install doubler plates on skid tube as follows: Refer to TM 1-1500-204-23.

(1) Securely clamp doubler plates to skid tube aligning tow ring mounting holes.

Drilling Operations

(2) Drill rivet holes. Remove doubler plates and deburr.

Sealing Compound

(3) Apply sealing compound (D184) under head of rivets and secure doubler plates in place with rivets

i. Seal edges of doubler plates with sealing compound (D184).

j. Prime (D98) and paint (D150) area of repair. Refer to TM 55-1500-345-23.

k. After installation of doubler plates install tow ring fittings as follows:

(1) Install tow ring fitting in skid tube. Install one bushing over outboard end of tow ring fitting.

NOTE

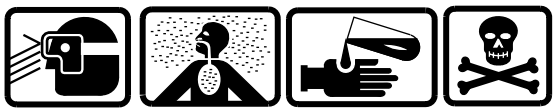
If bushing is too long, excess material shall be removed; if too short, next longer bushing shall be used. Bushing should be flush with doubler plate.

(2) Install bolt until threads bottom finger tight. Measure clearance between head of bolt and skid tube.

NOTE

If clearance exceeds **0.125 inch**, use next shorter bolt shall be used.

(3) Reinstall bolt with two washers and recheck for proper fit to ensure bolt has proper thread engagement. An acceptable alternate is one washer in contact with skid and one washer under bolt head.



Adhesive

(4) Remove bolt and washer, coat bolt threads with adhesive (D15) and then install bolt and washer.

INSPECT

END OF TASK

3-1-12. SKID TUBE ASSEMBLY (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean skid tube surface with drycleaning solvent (D199).

2. Dry skid tube with a wiping rag (D164).

INSPECT

3. Inspect skid tube for scratches, nicks, and dents to limits shown. See figure Rapid Deployment Skid Tube Assembly — Damage Limits.

REPAIR

Sanding Operations

4. Polish out reparable damage using 400 grit sandpaper (D175).

INSPECT

5. Make patch and insertion repairs per limits shown. See figure Rapid Deployment Skid Tube Assembly — Repair Criteria.

6. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

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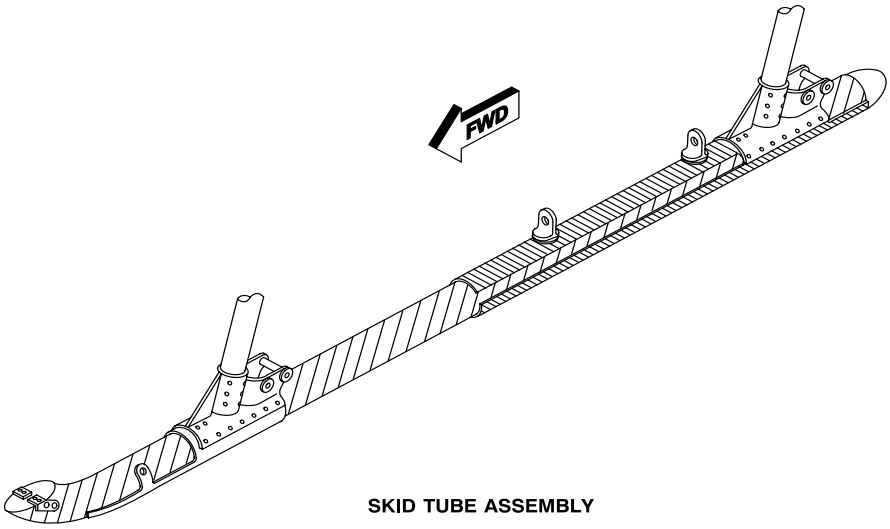

SKID TUBE ASSEMBLY

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE WITHOUT REQUIRING PATCH PLATE	
MECHANICAL	0.040 in. deep X 0.650 In. diameter	0.060 In. deep X 0.800 In. diameter
CORROSION	0.020 In. deep X 0.650 in. diameter before repair. Grind longitudinally only to a depth of 0.040 in.	0.030 In. deep X 0.800 In. diameter before repair. Grind longitudinally only to a depth of 0.060 in.

406052-89
J1449

Rapid Deployment Skid Tube Assembly — Damage Limits (Sheet 1 of 3)

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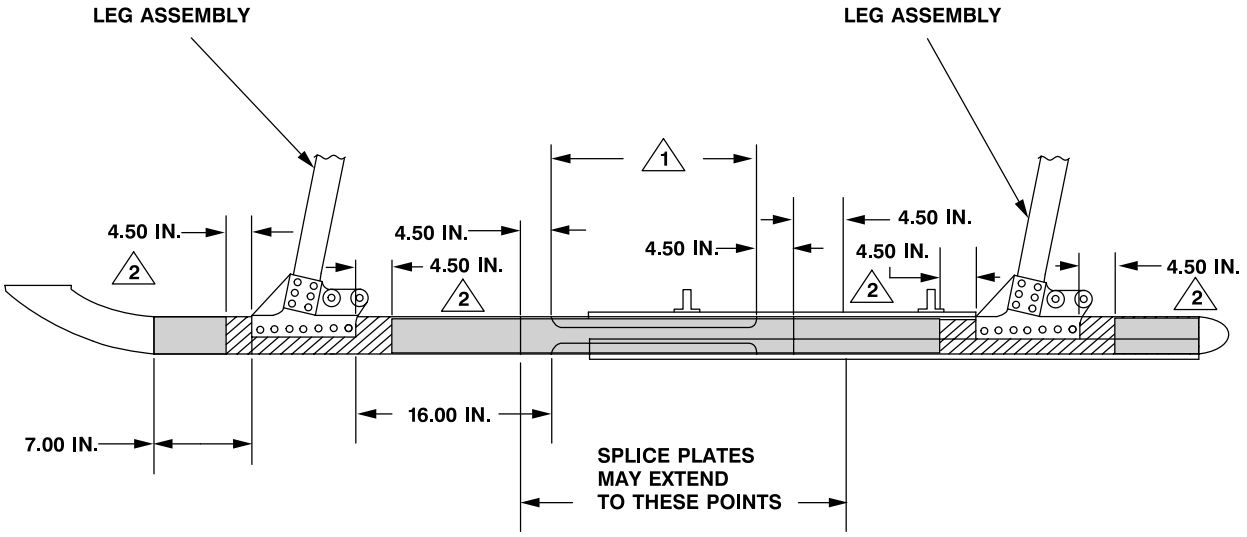

DAMAGE LOCATION SYMBOLS

REPAIRS BY PATCHING OR INSERTION NOT PERMITTED

REPAIRS BY PATCHING OR INSERTION PERMITTED

REPAIRS NOT REQUIRED IN THIS AREA - HOLES SHOULD BE PLUGGED TO PREVENT MOISTURE ENTRAPMENT

NOTES

1. NO PATCHES ALLOWED ON DOUBLERS. DAMAGE IN THIS AREA EXCEEDING NEGLIGIBLE LIMITS REQUIRES REPAIR BY SPLICING ENTIRE DOUBLER LENGTH USING 0.120 INCH 2024T3 OR SCRAP TUBE WITH DAMAGED DOUBLERS.

2. DAMAGE MUST NOT OCCUR WITHIN 4.50 INCHES OF THE SADDLE, BUT THE SPLICE PLATE MAY EXTEND TO WITHIN 0.030 INCH OF THE SADDLE.

406060-505
J1996

Rapid Deployment Skid Tube Assembly — Damage Limits (Sheet 2 of 3)

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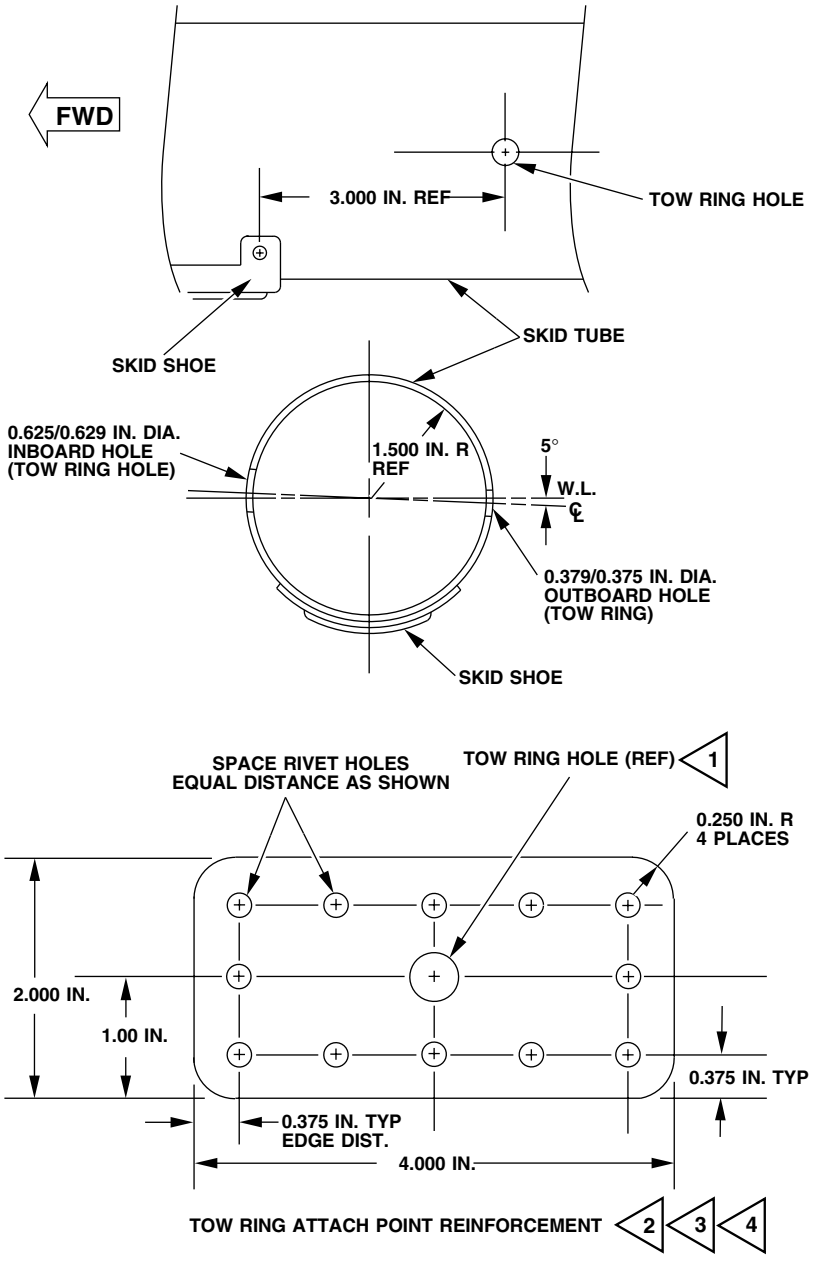

NOTE:

1. Inside reinforcement plate tow ring hole 0.625 in. to 0.629 in. diameter. Outside reinforcement plate tow ring hole 0.375 in. to 0.379 in. diameter.
2. Material: 4.000 in. x 2.000 in. x 0.120 in. 2024 T3 ALUM.
3. Contour to fit skid tube.
4. Attach to skid tube with 3/16 in. diameter Cherry rivets.

406060-517
H3808

Rapid Deployment Skid Tube Assembly — Damage Limits (Sheet 3 of 3)

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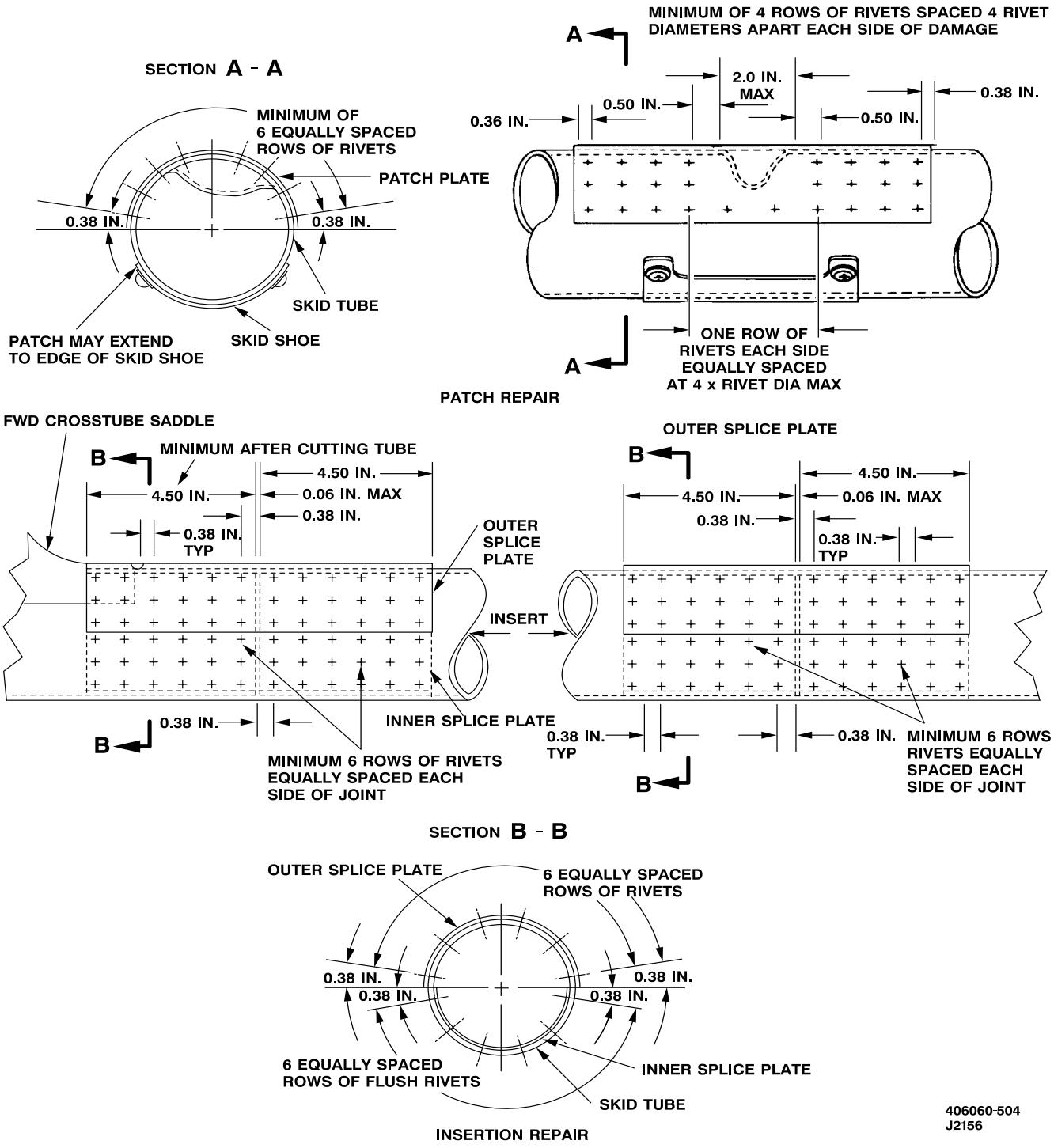
3-1-12. SKID TUBE ASSEMBLY (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)



Rapid Deployment Skid Tube Assembly — Repair Criteria

END OF TASK

3-1-13. SKID TUBE ASSEMBLY — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)

Material:
Sealing Compound (D184)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (4)

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

GO TO NEXT PAGE

REMOVE

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

1. Remove nine screws (1) from forward saddle (2) and nine screws (3) from aft saddle (4).

2. Remove aft crosstube support fitting (5).

3. Trim sealant from top edge of saddles (2 and 4) and crosstubes (6 and 7) using a plastic scraper (B123).

4. Remove skid tube (8) from forward and aft crosstubes (6 and 7).

INSTALL

Sealing Compound

5. Coat mating surfaces of forward and aft crosstubes (6 and 7) with sealing compound (D184).

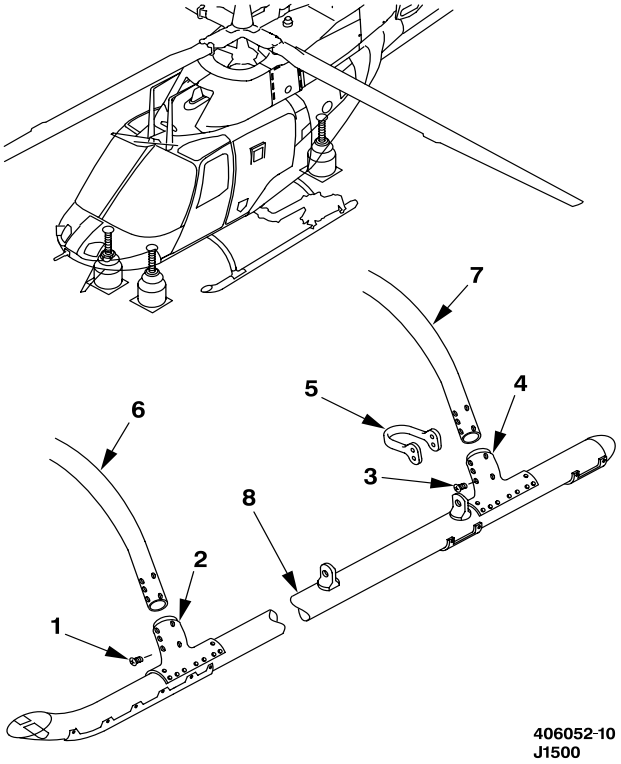
6. Place skid tube (8) on forward and aft crosstubes (6 and 7) until the top fore and aft holes in the saddles (2 and 4) are aligned.

7. Tap skid tube (8) with plastic mallet, if necessary, to align screw holes.

CAUTION

To prevent damage to saddles (2 and 4), screws (1 and 3) shall not be allowed to cut threads.

8. Position aft crosstube support fitting (5) and install nine screws (1) and nine screws (3).



9. Apply a bead of sealing compound (D184) around crosstubes at top edge of forward and aft saddles (2 and 4).

INSPECT

FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).

END OF TASK

3-1-14. SKID TUBE ASSEMBLY (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)

Material:
Chemical and Oil Protective Rubber Gloves (D111)
Sealing Compound (D184)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (3)

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)
Tow Fitting Removed (Task 3-1-49)
Eyebolt Removed (Task 3-1-21)

GO TO NEXT PAGE

3-1-14. SKID TUBE ASSEMBLY (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

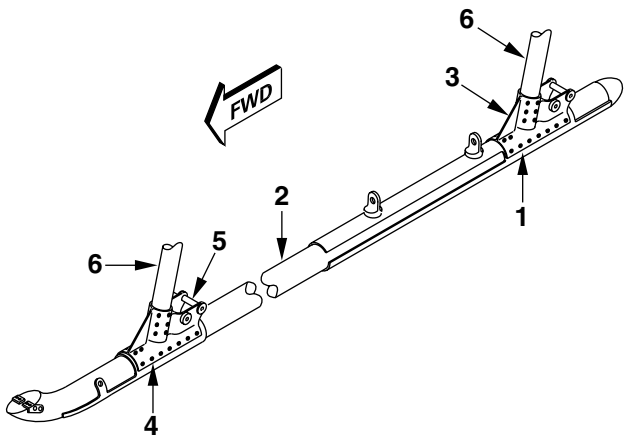
REMOVE

1. Remove rivets (1) attaching skid tube (2) to aft saddle (3) (TM 1-1500-204-23).

2. Remove rivets (4) attaching skid tube (2) to forward saddle (5) (TM 1-1500-204-23).

3. Trim sealant from edge of saddles (5 and 3) and skid tube (2) using a plastic scraper (B123).

4. Remove skid tube (2) from leg assemblies (6).



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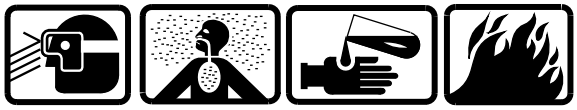
INSTALL



Sealing Compound

5. Coat mating surfaces of forward saddle (5) and aft saddle (3) with sealing compound (D184).

6. Place skid tube (2) on leg assemblies (6) and align rivet holes.

7. Temporarily secure skid tube (2) to saddles (5 and 3) with Cleco fasteners.

8. Install rivets (4 and 1) (TM 1-1500-204-23).

INSPECT

FOLLOW-ON-MAINTENANCE

Install tow fitting (Task 3-1-49).

Install eyebolt (Task 3-1-21).

Remove jacks (Task 1-6-8).

END OF TASK

3-1-15. SKID SHOES AND SKID TUBE RIVNUT — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

GO TO NEXT PAGE

3-1-15. SKID SHOES AND SKID TUBE RIVNUT — REMOVAL/INSTALLATION (CONT)

REMOVE SKID SHOES

1. Remove four screws (1) and washers (2) attaching skid shoe (3) to skid tube (4).

2. Remove four screws (5) and washers (6) attaching skid shoe (7) to skid tube (4).

3. Remove four screws (8) and washers (9) attaching skid shoe (10) to skid tube (4).

4. Remove 12 screws (11) and washers (12) attaching skid shoe (13) to skid tube (4).

REMOVE RIVNUT

5. Drill out rivnuts (14). (Refer to TM 1-1500-204-23.)

INSTALL RIVNUT

6. Install rivnuts (14). (Refer to TM 1-1500-204-23.)

INSPECT

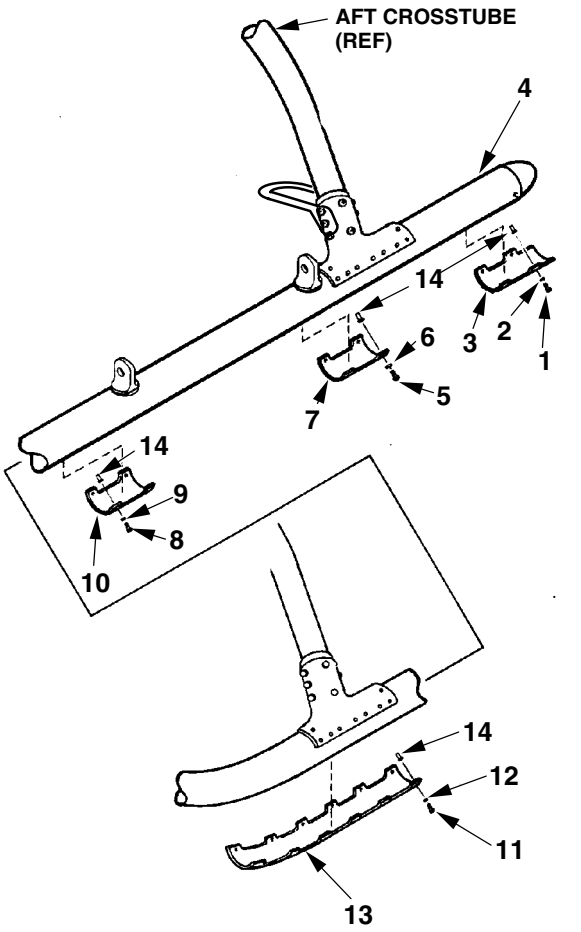
INSTALL SKID SHOES

7. Install skid shoe (3) on skid tube (4) using four washers (2) and screws (1).

8. Install skid shoe (7) on skid tube (4) using four washers (6) and screws (5).

9. Install skid shoe (10) on skid tube (4) using four washers (9) and screws (8).

10. Install skid shoe (10) on skid tube (4) using 12 washers (12) and 12 screws (11).



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INSPECT

FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).

END OF TASK

3-1-16. SKID SHOES AND SKID TUBE RIVNUTS (RAPID DEPLOYMENT) — REMOVAL/ INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

GO TO NEXT PAGE

3-1-16. SKID SHOES AND SKID TUBE RIVNUTS (RAPID DEPLOYMENT) — REMOVAL/ INSTALLATION (CONT)

REMOVE SKID SHOES

1. Remove 12 screws (1) and 12 washers (2) attaching skid shoe (3) to skid tube (4).

2. Remove four screws (5) and four washers (6) attaching skid shoe (7) to skid tube (4).

3. Remove four screws (8) and four washers (9) attaching skid shoe (10) to skid tube (4).

4. Remove four screws (11) and four washers (12) attaching skid shoe (13) to skid tube (4).

REMOVE RIVNUT

NOTE

Only unserviceable rivnuts shall be drilled out and replaced.

5. Drill out rivnuts (14) (TM 1-1500-204-23).

INSTALL RIVNUT

6. Install rivnuts (14) (TM 1-1500-204-23).

INSTALL SKID SHOES

7. Install skid shoe (3) on skid tube (4) using 12 washers (2) and 12 screws (1).

8. Install skid shoe (7) on skid tube (4) using four washers (6) and four screws (5).

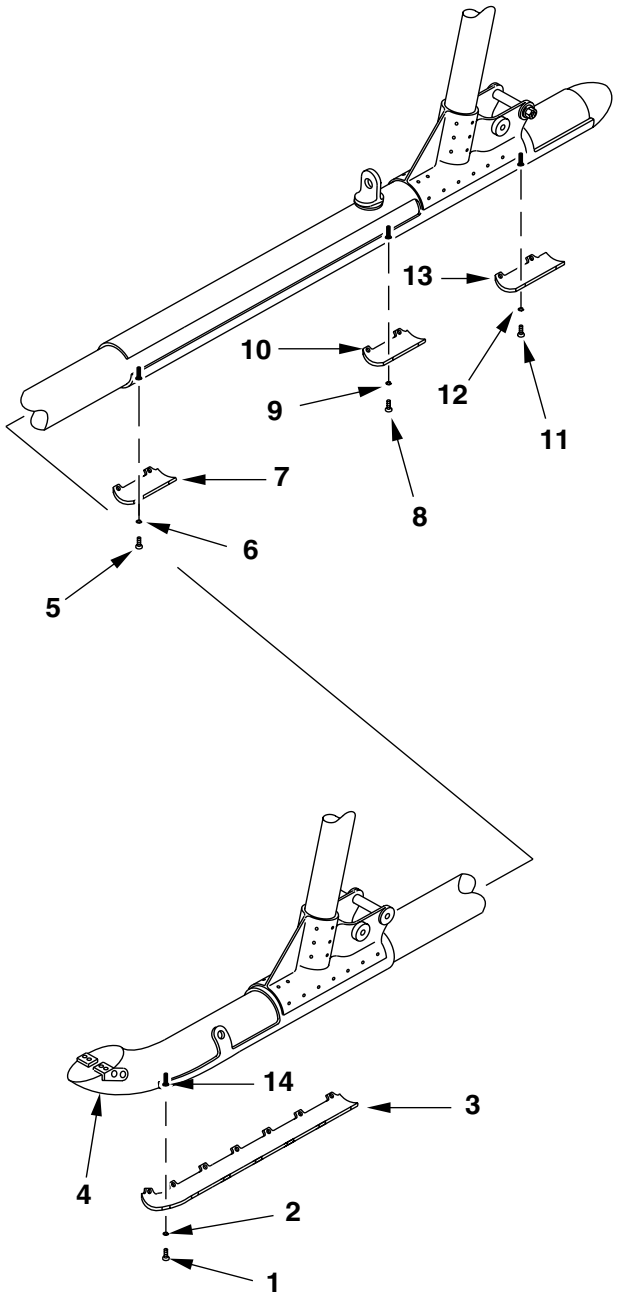
9. Install skid shoe (10) on skid tube (4) using four washers (9) and four screws (8).

10. Install skid shoe (13) on skid tube (4) using four washers (12) and four screws (11).

INSPECT

FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).



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END OF TASK

3-1-17. SKID SHOES AND SKID TUBE RIVNUT — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Rubber Gloves (D111)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 1-1520-266-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

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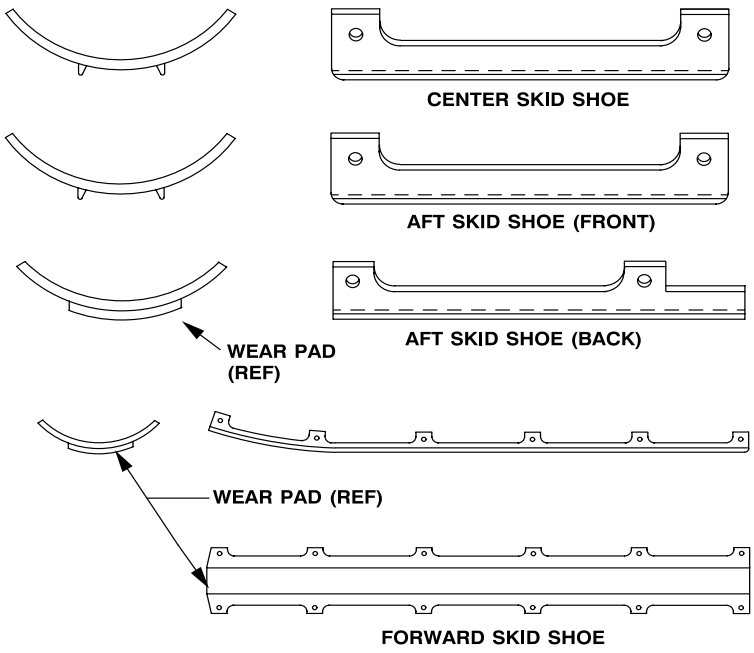

Skid Shoes

CLEAN

Drycleaning Solvent

1. Clean skid shoe surface with drycleaning solvent (D199).

2. Dry skid shoe with a wiping rag (D164).

INSPECT

NOTE

For all inspection procedures, see figure Skid Shoes.

3. Inspect skid shoes for worn beads on lower shoe surface or cracks at skid shoe attachment points. If cracks at attachment points are observed, or skid shoe weld beads or wear pads are worn to beyond serviceable limits, replace skid shoes. If crack is suspected perform eddy current inspection (TM 1-1520-266-23).

4. Inspect skid tube rivnut for damage. No damage allowed.

REPAIR

5. Replace damaged rivnut (Task 3-1-15).

INSPECT

END OF TASK

3-1-18. ALTERNATE SKID SHOE — CONVERSION TO

This task covers: Conversion from original skid shoes to alternate skid shoes (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Torque Wrench (B237)
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Rubber Gloves (D111)
Wiping Rag (D164)
Adhesive (D36)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

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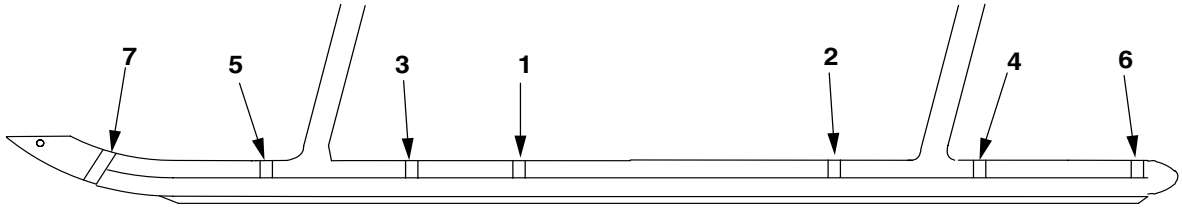

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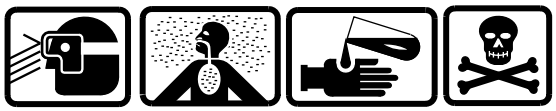
Alternate Skid Shoe — Clamp Torque Sequence

INSTALLATION

1. Raise helicopter until skid tubes are **6 to 10 inches** off ground.

2. Remove original skid shoes (Task 3-1-15 or Task 3-1-16).



Adhesive

3. Fill screw holes with adhesive (D36) to prevent water or debris from entering skid tube.

NOTE

Clamps and clamp nuts shall be facing inboard.

4. Clamp alternate skid shoe to skid tube. Tighten clamp nuts fingertight.

5. Lower helicopter to ground (Task 1-6-8).

6. Torque clamp nuts to **60 INCH-POUNDS** using sequence shown in figure Alternate Skid Shoe — Clamp Torque Sequence.

INSPECT

7. Make appropriate logbook entries and weight and balance computations.

CLEAN

Drycleaning Solvent

8. Clean skid shoe surface with drycleaning solvent (D199).

9. Dry skid shoe with wiping rag (D164).

INSPECT

10. Inspect alternate skid shoe for worn runner surfaces and cracks at skid shoe attachment points. Replace skid shoe if runner surfaces are worn to point of unserviceability or attachment points have cracks.

END OF TASK

3-1-18.1. ALTERNATE SKID SHOE — REMOVAL/INSTALLATION/CLEANING/INSPECTION

This task covers: Removal, Installation, Cleaning, and Inspection (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Torque Wrench (B237)
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Rubber Gloves (D111)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

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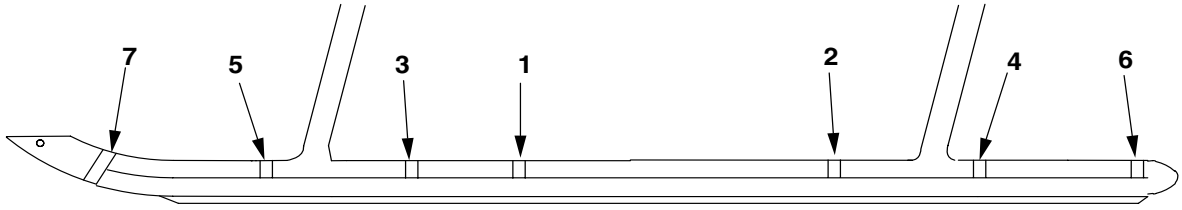
3-1-18.1. ALTERNATE SKID SHOE — REMOVAL/INSTALLATION/CLEANING/INSPECTION (CONT)



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Alternate Skid Shoe — Clamp Torque Sequence

REMOVAL

1. Raise helicopter until skid tubes are **6 to 10 inches** off ground.

2. Loosen clamps and remove alternate skid shoe.

INSTALLATION

NOTE

Clamps and clamp nuts shall be facing inboard.

3. Clamp alternate skid shoe to skid tube. Tighten clamp nuts fingertight.

4. Lower helicopter to ground (Task 1-6-8).

5. Torque clamp nuts to **60 INCH-POUNDS** using sequence shown in figure Alternate Skid Shoe — Clamp Torque Sequence.

INSPECT

CLEAN

Drycleaning Solvent

6. Clean skid shoe surface with drycleaning solvent (D199).

7. Dry skid shoe with wiping rag (D164).

GO TO NEXT PAGE

3-1-18.1. ALTERNATE SKID SHOE — REMOVAL/INSTALLATION/CLEANING/INSPECTION (CONT)

INSPECT

NOTE

Repair of all saw cut weld cracks found at the forward end of skid shoes may be delayed until next 100-hour inspection.

8. Inspect alternate skid shoe for worn runner surfaces and cracks at skid shoe attachment points. Replace skid shoe if runner surfaces are worn to point of unserviceability or attachment points have cracks. Cracks in hard surface and skid shoe material are allowed as long as hard surface and skid shoe remain intact.

NOTE

Helicopter is not flyable if the most forward or most aft clamp is broken.

9. Inspect for broken or loose clamps.

END OF TASK

3-1-19. SKID SHOES AND SKID TUBE RIVNUTS (RAPID DEPLOYMENT) (AVIM) — CLEANING/ INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airmobile Welding Shop Set (B146)
Goggles (B55)
Respirator (B116)
Spray Paint Gun (B61)

Material:
Ammonium Nitrate (D143)
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Weld Tube (D225)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

CLEAN

Drycleaning Solvent

1. Clean skid shoe surface with drycleaning solvent (D199).

2. Dry skid shoe with a wiping rag (D164).

INSPECT

3. Inspect skid shoes for worn beads and worn pads on lower shoe surface. If wear pads are worn beyond limits shown, replace skid shoes.

4. Inspect all skid shoe attachment points for cracks. Transverse cracks in beads or pads are not cause for rejection. If cracks are observed at skid shoe attachment points or skid shoe weld beads are worn beyond repair limits, replace skid shoes. See figure Rapid Deployment Skid Shoes — Damage Limits.

5. Inspect skid tube rivnuts for damage. No damage allowed.

6. Remove skid shoe from skid tube (Task 3-1-16).

REPAIR

CAUTION

To prevent damage to the aluminum skid tube, prior to any welding repair, skid shoe shall be removed from skid tube.

NOTE

For all repair procedures, see figure Rapid Deployment Skid Shoes — Repair Criteria.

7. Bead weld skid shoe as follows:

GO TO NEXT PAGE

3-1-19. SKID SHOES AND SKID TUBE RIVNUTS (RAPID DEPLOYMENT) (AVIM) — CLEANING/ INSPECTION/REPAIR (CONT)

WARNING

To prevent injury to personnel, mixed acid solution shall not be allowed to contact metal, as it may release flammable hydrogen gas. When mixing solutions, acid shall be added to water, not water to acid. Solution is very corrosive. No contact shall be had with it. Contact with liquid can cause burns. Inhalation of mist can cause irritation. If any solution contacts skin or eyes, affected area should be flushed immediately and thoroughly with water for a minimum of 15 minutes. Solution-saturated clothing should be removed immediately. In all cases immediate medical attention should be obtained. When handling concentrated or diluted solution in air-exhausted tank, approved gloves and goggles shall be worn. When handling concentrated or diluted solution in open, unexhausted tank, approved respirator, gloves, and goggles shall be worn.

a. Mix a solution of 16 ounces of ammonium nitrate (D143) per gallon of water.

b. Maintain solution at a temperature of 120 °F.

CAUTION

To prevent failure of repair and corrosion, skid shoes shall be repaired and primed immediately after cadmium is stripped from skid shoe prior to making bead weld repairs.

c. Immerse skid shoe in solution until all cadmium plating has been removed.

d. Rinse skid shoe in clean water and air dry.

e. Weld two full length beads **0.06 to 0.10 inch** high along skid shoe using acetylene and **0.125 inch** hard-facing weld tube (D225) (TM 1-1500-204-23).

Heat

f. Hot reform skid shoe as required to fit contour of skid tube.

g. Clean up weld deposits using a stiff wire brush.

h. Apply two coats of epoxy primer coating (D98) followed by two coats of paint (D150) (TM 55-1500-345-23).

INSPECT

8. Repair elongated hole on mount tab as follows:

a. Fabricate a rectangular doubler of required size from **0.063 inch** normalized 4130 steel, MIL-S-18729 (TM 1-1500-204-23).

WARNING

To prevent injury to personnel, mixed acid solution shall not be allowed to contact metal, as it may release flammable hydrogen gas. When mixing solutions, acid shall be added to water, not water to acid. Solution is very corrosive. No contact shall be had with it. Contact with liquid can cause burns. Inhalation of mist can cause irritation. If any solution contacts skin or eyes, affected area should be flushed immediately and thoroughly with water for a minimum of 15 minutes. Solution-saturated clothing should be removed immediately. In all cases immediate medical attention should be obtained. When handling concentrated or diluted solution in air-exhausted tank, approved gloves and goggles shall be worn. When handling concentrated or diluted solution in open, unexhausted tank, approved respirator, gloves, and goggles shall be worn.

b. Mix a solution of 16 ounces of ammonium nitrate (D143) per gallon of water.

GO TO NEXT PAGE

c. Maintain solution at a temperature of 120 °F.

d. Immerse skid shoe in solution until all cadmium plating has been removed.

e. Rinse skid shoe in clean water and air dry.

f. Secure doubler to skid shoe tab by welding (arc or gas method) around entire periphery of doubler.

Sanding Operations

g. Grind weld smooth on side adjacent to skid tube and in location for retaining screw head.

h. Clean up weld deposits with stiff wire brush.

i. Apply two coats of epoxy primer coating (D98) followed by two coats of paint (D150) (TM 55-1500-345-23).

INSPECT

9. Replace skid shoe tab as follows:

a. Cut off damaged tab parallel to skid tube.

WARNING

To prevent injury to personnel, mixed acid solution shall not be allowed to contact metal, as it may release flammable hydrogen gas. When mixing solutions, acid shall be added to water, not water to acid. Solution is very corrosive. No contact shall be had with it. Contact with liquid can cause burns. Inhalation of mist can cause irritation. If any solution contacts skin or eyes, affected area should be flushed immediately and thoroughly with water for a minimum of 15 minutes. Solution-saturated clothing should be removed immediately. In all cases immediate medical attention should be obtained. When handling concentrated or diluted solution in air-exhausted tank, approved gloves and goggles shall be worn. When handling concentrated or diluted solution in open, unexhausted tank, approved respirator, gloves, and goggles shall be worn.

b. Mix a solution of 16 ounces of ammonium nitrate (D143) per gallon of water.

c. Maintain solution at a temperature of 120 °F.

CAUTION

To prevent failure of repair and corrosion, skid shoes shall be repaired and primed immediately after cadmium is stripped from skid shoe prior to making bead weld repairs.

d. Immerse skid shoe in solution until all cadmium plating has been removed.

e. Rinse skid shoe in clean water and air dry.

f. Fabricate a new tab from **0.063 inch** normalized 4130 steel, MIL-S-18729.

GO TO NEXT PAGE

3-1-19. SKID SHOES AND SKID TUBE RIVNUTS (RAPID DEPLOYMENT) (AVIM) — CLEANING/ INSPECTION/REPAIR (CONT)

g. Butt weld tab along cut line of skid shoe.

Sanding Operations

h. Grind weld smooth on side adjacent to skid tube and in location for retaining screw head.

i. Clean up weld deposits with stiff wire brush.

j. Apply two coats of epoxy primer coating (D98) followed by two coats of paint (D150) (TM 55-1500-345-23).

k. Install skid shoe on skid tube (Task 3-1-16).

INSPECT

10. Replace damaged rivnut (Task 3-1-16).

INSPECT

FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).

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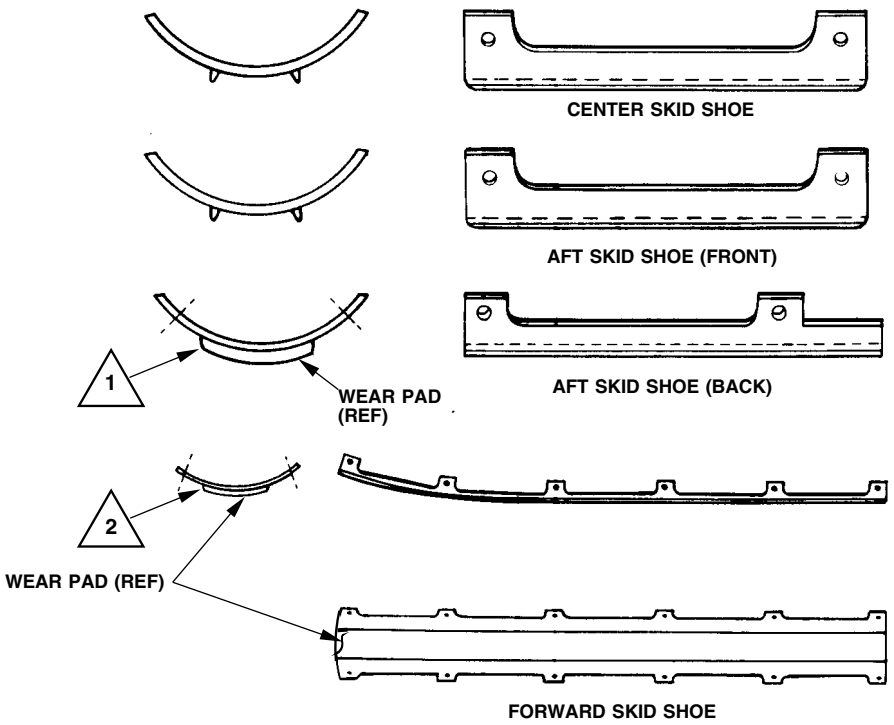
3-1-19. SKID SHOES AND SKID TUBE RIVNUTS (RAPID DEPLOYMENT) (AVIM) — CLEANING/ INSPECTION/REPAIR (CONT)



NOTE:

1. **REPLACE SKID SHOE IF WEAR PAD IS LESS THAN 0.040 INCH THICK.**
2. **REPLACE SKID SHOE IF WEAR PAD IS LESS THAN 0.035 INCH THICK.**

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Rapid Deployment Skid Shoes — Damage Limits

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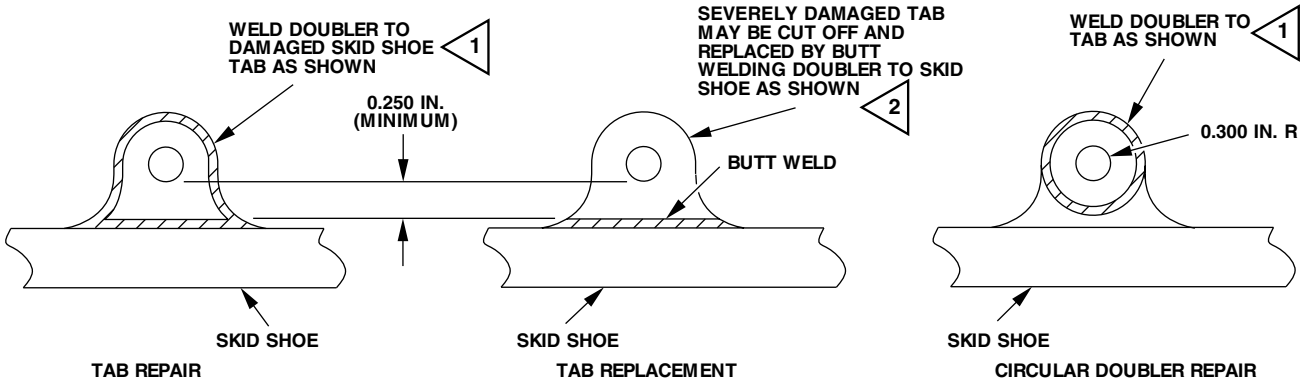
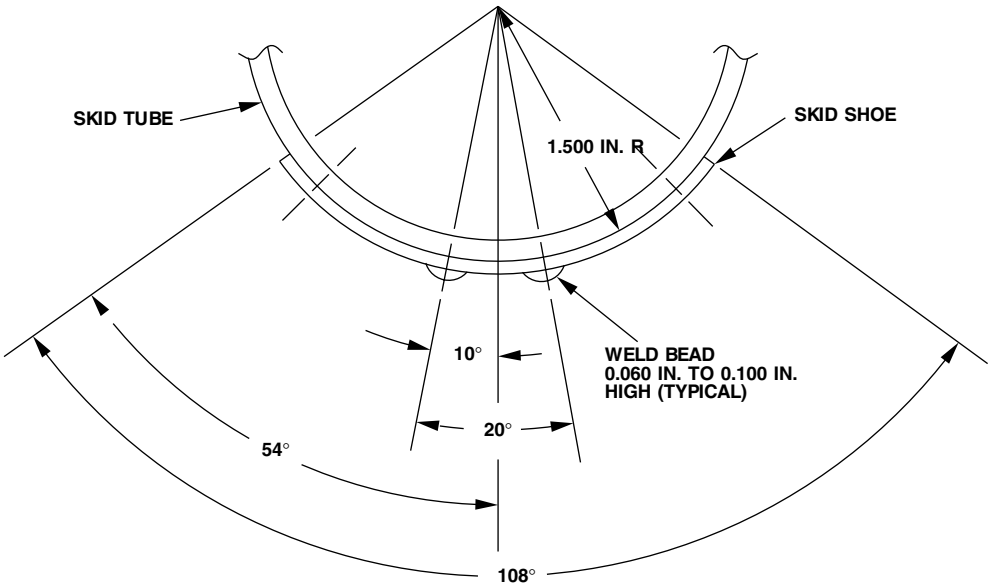
3-1-19. SKID SHOES AND SKID TUBE RIVNUTS (RAPID DEPLOYMENT) (AVIM) — CLEANING/ INSPECTION/REPAIR (CONT)





NOTE:

1. Fabricate doubler of normalized 4130 steel, MIL-S-18729, 0.063 in. thickness and of same configuration as damaged tab.
2. Fabricate doubler of normalized 4130 steel, MIL-S-18729, 0.063 in. thickness and same configuration as removed tab. Grind weld smooth on side adjacent to skid tube.

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Rapid Deployment Skid Shoes — Repair Criteria

END OF TASK

3-1-20. EYEBOLT — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

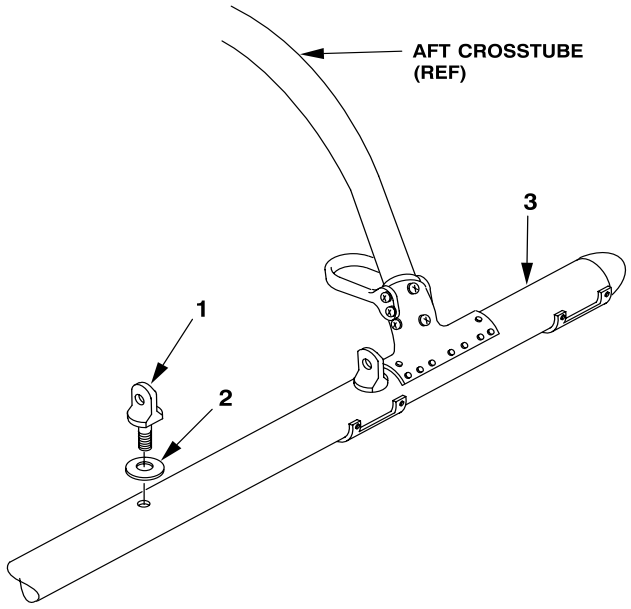
REMOVE

1. Remove eyebolt (1) and washer (2) from skid tube (3).

INSTALL

2. Install washer (2) and eyebolt (1) in skid tube (3).

INSPECT



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J1500

END OF TASK

3-1-21. EYEBOLT (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

REMOVE

1. Remove eyebolt (1) and radius washer (2) from skid tube (3).

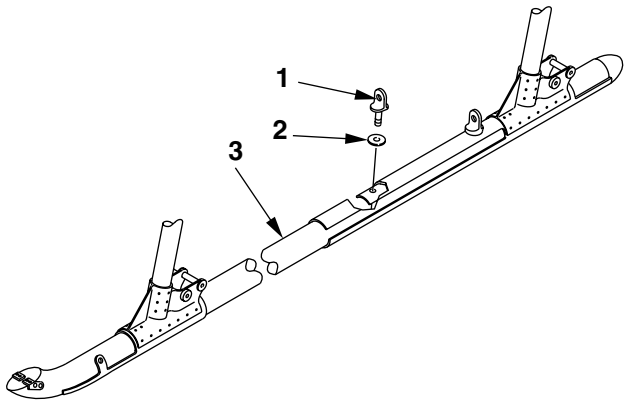
INSTALL

2. Install radius washer (2) and eyebolt (1) in skid tube (3).

NOTE

A maximum of four thin aluminum washers may be used to obtain proper alignment.

INSPECT



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END OF TASK

3-1-22. EYEBOLT — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean eyebolt surface with drycleaning solvent (D199).

2. Dry eyebolt with a wiping rag (D164).

INSPECT

3. Inspect eyebolt to limits shown. If damage is beyond limits, replace eyebolt. See figure Eyebolt — Damage Limits.

REPAIR

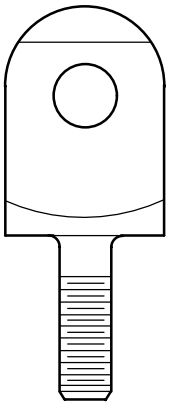
Sanding Operations

4. Polish out reparable damage using 400 grit sandpaper (D175).

5. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150). Refer to TM 55-1500-345-23.

INSPECT

GO TO NEXT PAGE



DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.010 in. before and 0.020 In. after repalr
CORROSION	0.010 in. before and 0.020 In. after repalr
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.
NUMBER OF REPAIRS	Not critical
EDGE CHAMFER TO REMOVE DAMAGE	0.03 In.
BORE DAMAGE	0.002 In. x 1/4 circumference
THREAD DAMAGE	
Depth:	1/3 Of thread
Length:	0.25 In.
Number:	One per segment

406052-40
J0440

Eyebolt — Damage Limits

END OF TASK

3-1-23. EYEBOLT (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Sealing Compound (D184)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean eyebolt surface with wiping rag (D164) dampened with drycleaning solvent (D199).

2. Dry eyebolt with a wiping rag (D164).

INSPECT

3. Inspect eyebolt to limits shown. If damage is beyond limits, replace eyebolt. See figure Rapid Deployment Eyebolt — Damage Limits.

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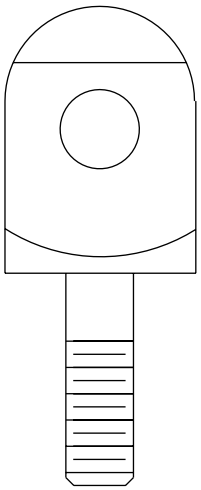

DAMAGE LOCATION SYMBOL

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 In. before repair 0.020 in. after repair
CORROSION:	0.010 In. before repair 0.020 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.125 Sq. in.
MAXIMUM NUMBER OF REPAIRS	Not critical
EDGE CHAMFER	0.03 In. x 45°
BORE	0.002 In. x 1/4 circumference
THREAD DAMAGE	
Depth	1/3 Of thread
Length	0.25 In.
Number	One per segment

NOTE:

No cracks permitted.

406060-508
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Rapid Deployment Eyebolt — Damage Limits

GO TO NEXT PAGE

3-1-23. EYEBOLT (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)

REPAIR

Sanding Operations

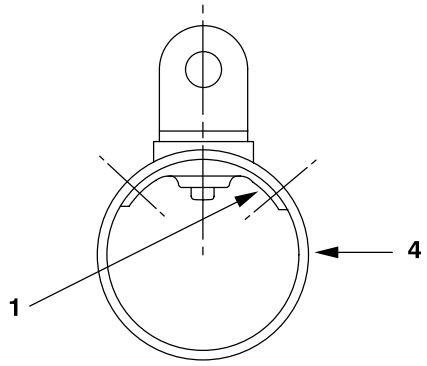
4. Polish out reparable damage using 400 grit sandpaper (D175).

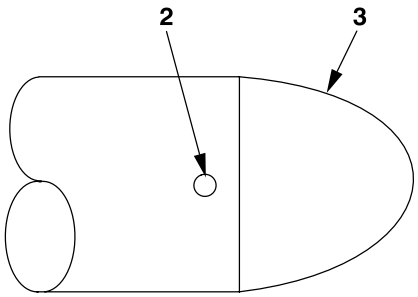
5. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

6. Repair eyebolt insert assembly (1) as follows:

Drilling Operations

a. Drill out rivets (2) securing end plug (3) to skid tube (4).





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b. Work end plug (3) free from skid tube (4). Remove sealing compound from skid tube (4) using a plastic scraper (B123).

c. Remove eyebolt (5) and radius washer (6) from skid tube (4).

NOTE

String will be used as an aid during installation.

d. Attach a length of string to nutplate (7).

Drilling Operations

e. Drill out rivets (8 and 9) securing insert assembly (1). Tap nutplate (7) with a plastic mallet to separate insert assembly (1) from skid tube (4).

f. Remove insert assembly (1) through aft end of skid tube (4) using a **4-foot** hook with a hook on one end or a pair of mechanical fingers.

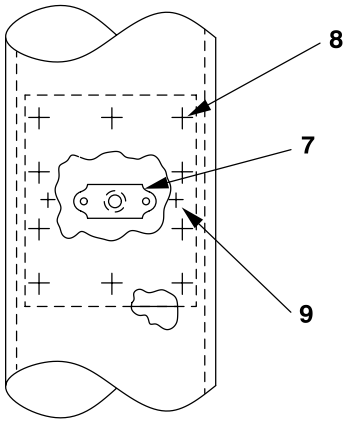
g. Remove string from nutplate (7).

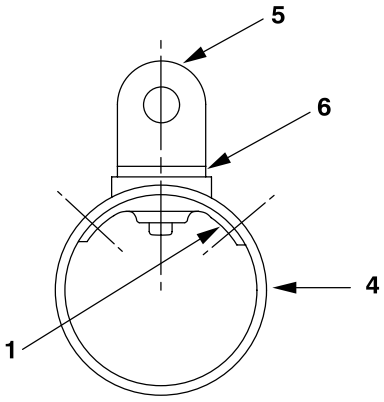
h. Remove sealing compound from insert assembly (1) using a plastic scraper (B123).

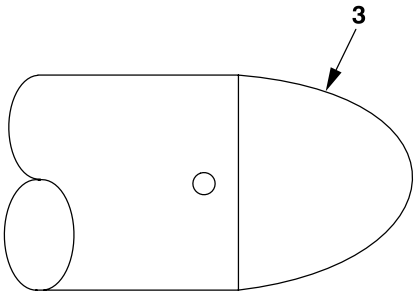
i. Replace nutplate (7) on insert assembly (1) (TM 1-1500-204-23).

Sealing Compound

j. Apply an even coating of sealing compound (D184) to surface of insert assembly (1) that will mate with skid tube (4).







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k. Attach string to nutplate (7) and pull insert assembly (1) into position in skid tube (4).

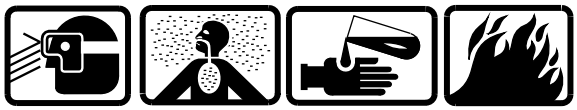
l. Loosely install eyebolt (5). Remove string from nutplate (7). Pull insert assembly (1) into position to align rivet holes.

m. Secure insert assembly (1) with rivets (8 and 9) (TM 1-1500-204-23).

n. Remove eyebolt (5).

o. Install radius washer (6) and eyebolt (5) in skid tube (4).

p. Align holes in eyebolts (5)



Sealing Compound

NOTE

A maximum of four thin aluminum washers may be used to obtain proper alignment.

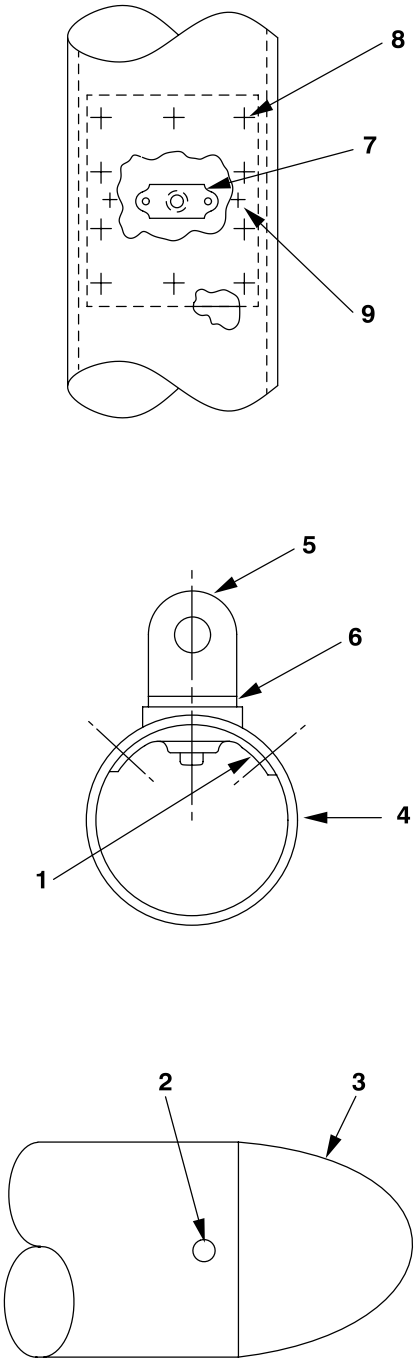
q. Apply coating of sealing compound (D184) on skid tube (4) mating surface of end plug (3).

r. Press end plug (3) into skid tube (4) and secure using rivets (2) (TM 1-1500-204-23).

Sealing Compound

s. Fillet seal around end of skid tube (4) using sealing compound (D184). Remove excess sealing compound with plastic scraper (B123).

INSPECT



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J1996

END OF TASK

3-1-24. FORWARD CROSSTUBE — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)

Material:
Sealing Compound (D184)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

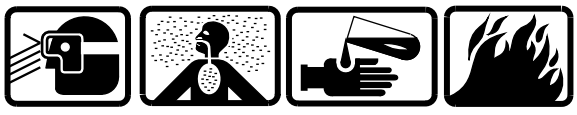
REMOVE

1. Remove nine screws (1) at saddles (2) of skid tubes (3) on each end of forward crosstube (4).

2. Trim sealant from top edge of saddle (2) and crosstube (4) using a plastic scraper (B123).

3. Pull ends of crosstube (4) from sockets of saddles (2) on skid tubes (3).

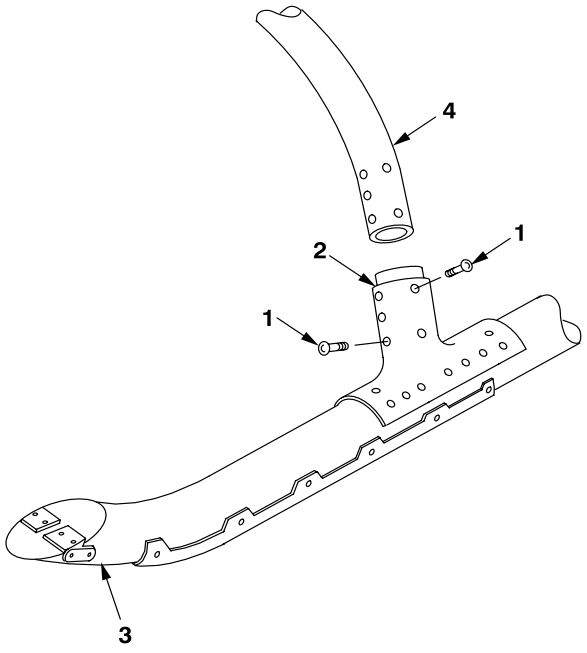
INSTALL



Sealing Compound

4. Coat mating surfaces of crosstube (4) with sealing compound (D184).

5. Insert ends of replacement crosstube (4) into sockets of saddles (2) on skid tubes (3).



406052-28
J0440

6. Install nine screws (1) to secure skid tubes (3) to each end of crosstube (4).

7. Apply bead of sealing compound (D184) around top of saddles (2).

INSPECT

END OF TASK

3-1-25. FORWARD CROSSTUBE (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)
Torque Wrench (B239)

Material:
Sealant (D179)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)

GO TO NEXT PAGE

3-1-25. FORWARD CROSSTUBE (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove 12 bolts (1) and 12 washers (2) from knuckle assembly (3) on each end of forward crosstube (4).

2. Pull ends of crosstube (4) from sockets of knuckle assemblies (3).

3. Remove sealant with plastic scraper (B123).

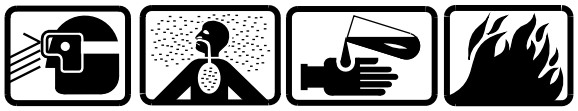
INSTALL

Sealing Compound

4. Seal faying surfaces of crosstube (4) and knuckle assemblies (3) with sealant (D179).

5. Insert ends of replacement crosstube (4) into sockets of knuckle assemblies (3).

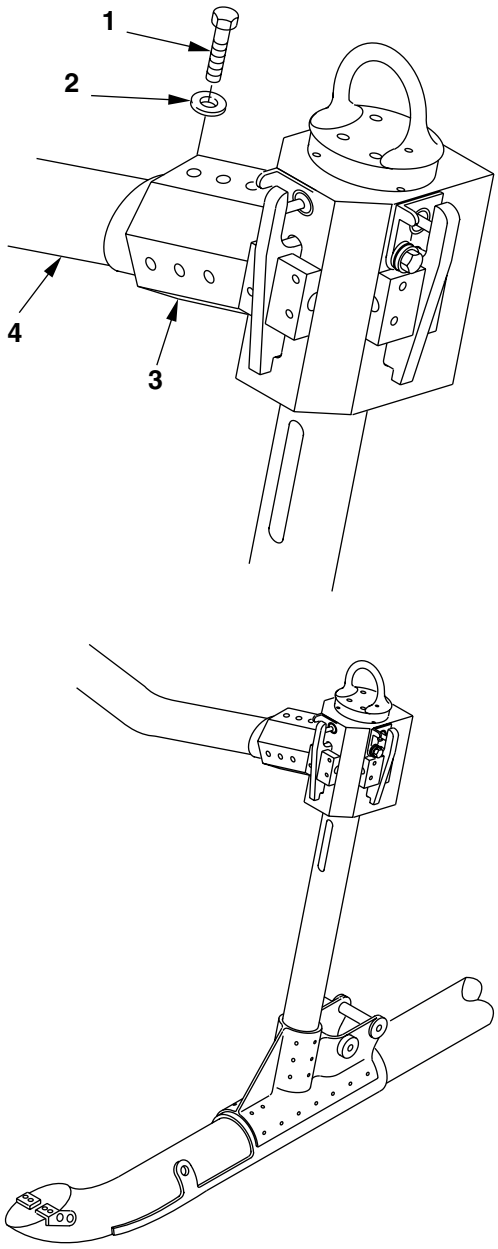
6. Install 12 washers (2) and 12 bolts (1) to secure each end of crosstube (4) to knuckle assemblies (3). Torque bolts (1) **120 TO 160 INCH-POUNDS**.



Sealing Compound

7. Seal end of knuckle assembly (3) to crosstube (4) with sealant (D179).

INSPECT



406052-75
H3806

END OF TASK

3-1-26. FORWARD CROSSTUBE — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Acid Swabbing Brush (D51)
Adhesive (D14)
Aliphatic Naphtha (D141)
Chemical Conversion Coating (Alodine 1201) (D57)
Drycleaning Solvent (D199)
Dynasolve 165 (D95)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Scouring Pads (D147)
Sealing Compound (D184)
Soap Cleaning Compound (D192)
Tack Rag (D209)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

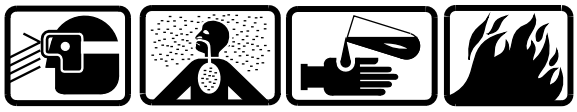
References:
TM 55-1500-345-23
TM 1-1520-266-23

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety.

CLEAN



Drycleaning Solvent

1. Clean forward crosstube surface with drycleaning solvent (D199).

2. Dry forward crosstube surface with a wiping rag (D164).

INSPECT

3. Inspect crosstube for scratches, nicks, and dents. If damage is beyond limits, replace crosstube. See figure Forward Crosstube — Damage Limits. If crack in crosstube is suspected perform ultrasound inspection (TM 1-1520-266-23).

NOTE

Scratches and nicks of less than **0.005 inch** depth and corrosion less than **0.002 inch** depth may be considered negligible in all surface areas of the forward crosstube provided the damage is blended out.

a. Circumferential scratches, corrosion, and any other damage exceeding negligible damage limits shall be polished out to the limits indicated provided damage may be blended out smooth within **0.60 inch** circumferential length.

b. Longitudinal scratches, nicks, and any other damage extending longitudinally that exceeds negligible damage limits shall be polished out provided damage may be blended smoothly within **1.50 inches** of the tube length and minimum distance between repairs in **6.00 inches**.

c. Dent limits are the same as those specified for nicks. No sharp dents are permitted.

GO TO NEXT PAGE

d. Corrosion damage limits are one-half of limits specified for nicks and scratches.

REPAIR

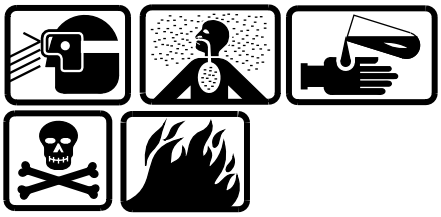
NOTE

When overlapping damage is repaired, most critical maximum limits for entire repair area shall be used.

Sanding Operations

4. Polish out reparable damage using 400 grit sandpaper (D175).

a. Corrosion shall be cleaned up to twice the visible corrosion depth and the blended out area shall not exceed the limits of paragraph 3.



Chemical Conversion Materials

b. On all bare aluminum, brush or spray an application of Alodine 1201 (D57).

5. Apply coat of epoxy primer coating (D98) followed by a coat of paint (D150) to repair area. Refer to TM 55-1500-345-23.

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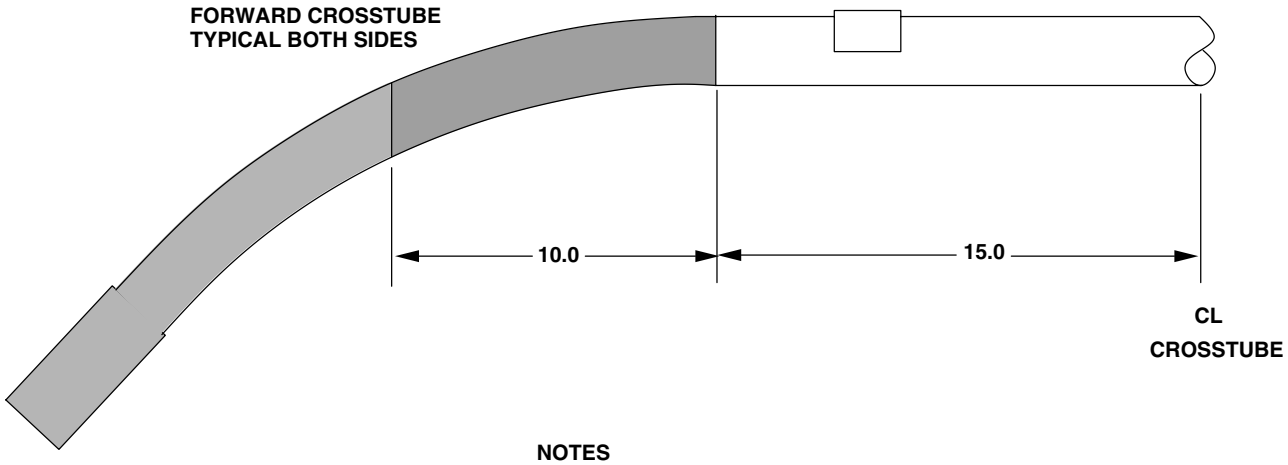


NOTES
1. All dimensions are in inches.
2. External surfaces shall be free from circumferential grind marks.

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH		
NICKS AND SCRATCHES	0.008	0.012	0.014
CORROSION	0.004	0.006	0.007

406052-42
J1812

Forward Crosstube — Damage Limits

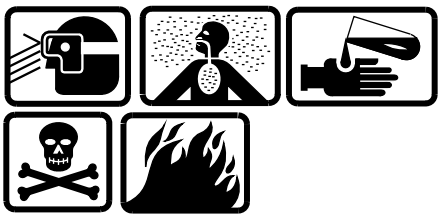
GO TO NEXT PAGE

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART

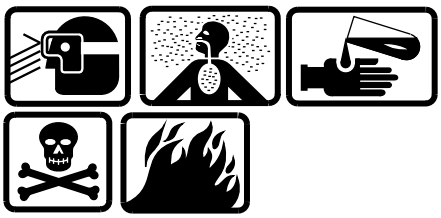
The external surface condition of the forward crosstube is critical to flight safety.

6. Replace damaged rub strip (for weight gear switch) on forward crosstube as follows:



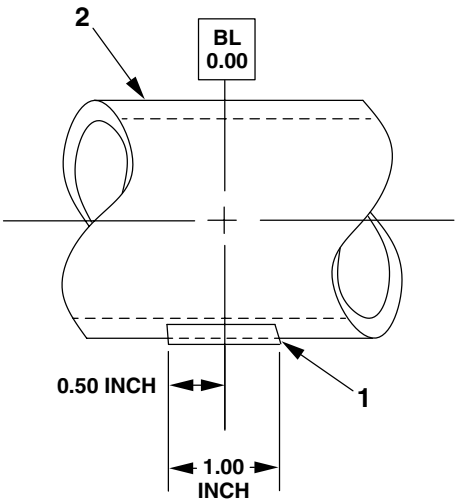
Dynasolve 165

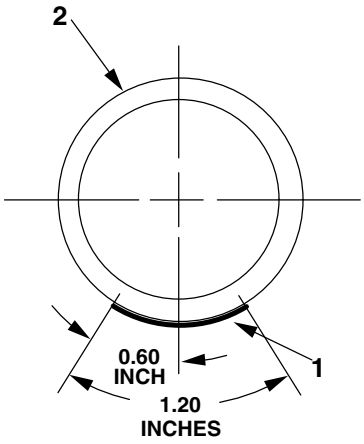
a. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) around edge of rub strip (1) to dissolve adhesive. Remove rub strip from crosstube (2).



Naphtha/Naphthalene, TT-N-97

b. Clean surface with aliphatic naphtha (D141) using wiping rags (D164).





CROSS SECTION OF FORWARD CROSSTUBE

406052-50
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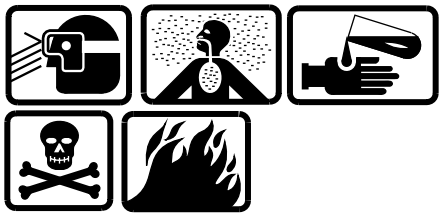
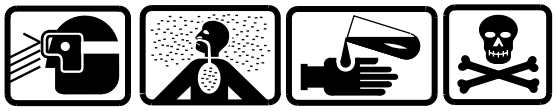
Cleaning Compound

c. Clean with soap cleaning compound (D192), mixed with 4 ounces per gallon of water and scouring pads (D147).



Chemical Conversion Materials

d. Brush Alodine 1201 (D57) on surface with acid swabbing brush (D51). Wipe with tack rag (D209).



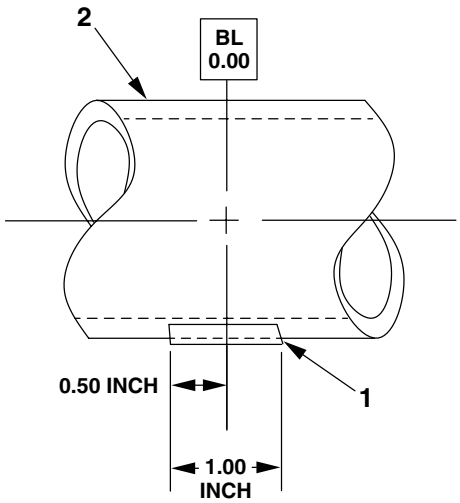
Adhesive

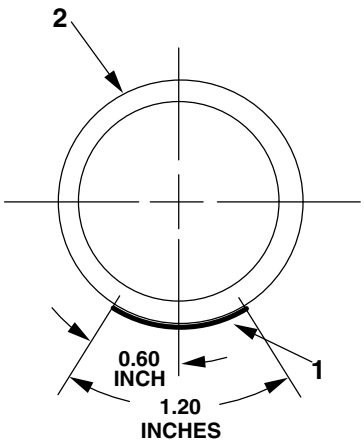
e. Apply adhesive (D14) to rub strip bonding surface using acid swabbing brush (D51).

f. Apply rub strip (1) to forward crosstube (2) at location shown.

Sealing Compound

g. Apply a bead of sealing compound (D184) around rub strip.





CROSS SECTION OF FORWARD CROSSTUBE

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J0440

INSPECT

END OF TASK

3-1-27. FORWARD CROSSTUBE (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Chemical Conversion Coating (Alodine 1201) (D57)
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

GO TO NEXT PAGE

3-1-27. FORWARD CROSSTUBE (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Clean forward crosstube surface with drycleaning solvent (D199).

2. Dry forward crosstube surface with a wiping rag (D164).

INSPECT

3. Inspect crosstube for scratches, nicks, cracks, corrosion, and dents. If damage is beyond limits, replace crosstube. See figure Rapid Deployment Forward Crosstube — Damage Limits.

4. Minimum distance between longitudinal nick or scratch repairs is **2.00 inches**. Circumferential scratches must not exceed a 45 degree arc. No cracks or sharp dents are permitted.

REPAIR

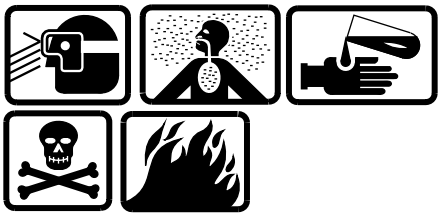
CAUTION

To prevent failure of repair or failure of crosstube, when overlapping damage is repaired most critical maximum limits for entire repair area shall be used.

Sanding Operations

5. Polish out reparable damage using 400 grit sandpaper (D175).

a. Corrosion shall be cleaned up to twice the visible corrosion depth and blendout area shall not exceed limits shown.



Chemical Conversion Materials

b. On all bare aluminum, brush or spray an application of Alodine 1201 (D57).

6. Apply a coat of epoxy primer coating (D98) followed by coat of paint (D150) to repair area (TM 55-1500-345-23).

INSPECT

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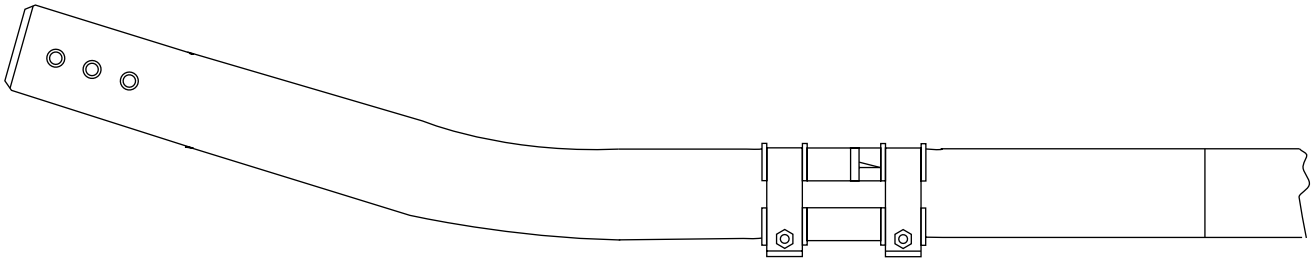
3-1-27. FORWARD CROSSTUBE (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)



FORWARD CROSSTUBE

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL ☐
NICKS, SCRATCHES AND CORROSION DEPTH LIMITS	0.003 in. (1) Before repair 0.006 in. After repair
MAXIMUM REPAIR LENGTH ALONG CIRCUMFERENCE OF TUBE	0.150 in.
MAXIMUM REPAIR LENGTH ALONG LONGITUDINAL SURFACE OF CROSSTUBE	0.50 In.

NOTE:

(1) Limits are without reshot peening

2. No cracks permitted

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Rapid Deployment Forward Crosstube — Damage Limits

END OF TASK

3-1-28. FORWARD CROSSTUBE (NONSTANDARD) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Acid Swabbing Brush (D51)
Adhesive (D14)
Aliphatic Naphtha (D141)
Chemical Conversion Coating (Alodine 1201) (D57)
Drycleaning Solvent (D199)
Dynasolve 165 (D95)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Scouring Pads (D147)
Sealing Compound (D184)
Soap Cleaning Compound (D192)
Tack Rag (D209)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward crosstube is critical to flight safety.

CLEAN

Drycleaning Solvent

1. Clean forward crosstube surface with drycleaning solvent (D199).

2. Dry forward crosstube surface with a wiping rag (D164).

INSPECT

CAUTION

To prevent failure of crosstube, repair limits which are a lifetime accumulation at any location shall not be exceeded.

3. Inspect crosstube for scratches, nicks, and dents. If damage is beyond limits, replace crosstube. See figure Forward Crosstube — Damage Limits.

NOTE

Scratches and nicks of less than **0.004 inch** depth and corrosion less than **0.002 inch** depth may be considered negligible in all surface areas of the forward crosstube, provided the damage is blended out.

a. Circumferential scratches, dents, nicks, and any other damage exceeding negligible damage limits shall be polished out, not to exceed the limits indicated provided damage may be blended out smooth within **0.60 inch** circumferential length.

b. Longitudinal scratches, nicks, and any other damage extending longitudinally that exceeds negligible damage limits shall be

GO TO NEXT PAGE

polished out, provided damage may be blended out smoothly within **2 inches** of the tube length, and minimum distance between repairs is **3 inches**.

c. Corrosion damage limits are one-half of limits specified for nicks and scratches.

REPAIR

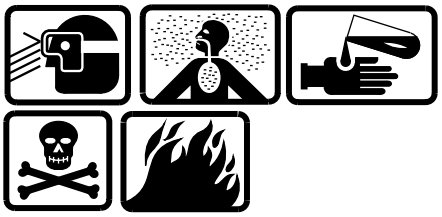
CAUTION

To prevent failure of crosstube, repair limits shall not be exceeded. When overlapping damage is repaired, most critical maximum limits for entire repair area shall be used.

Sanding Operations

4. Polish out reparable damage using 400 grit sandpaper (D175). No circumferential grinding is allowed.

a. Corrosion shall be cleaned up to twice the visible corrosion depth and the blendout area shall not exceed the limits of paragraph 3.

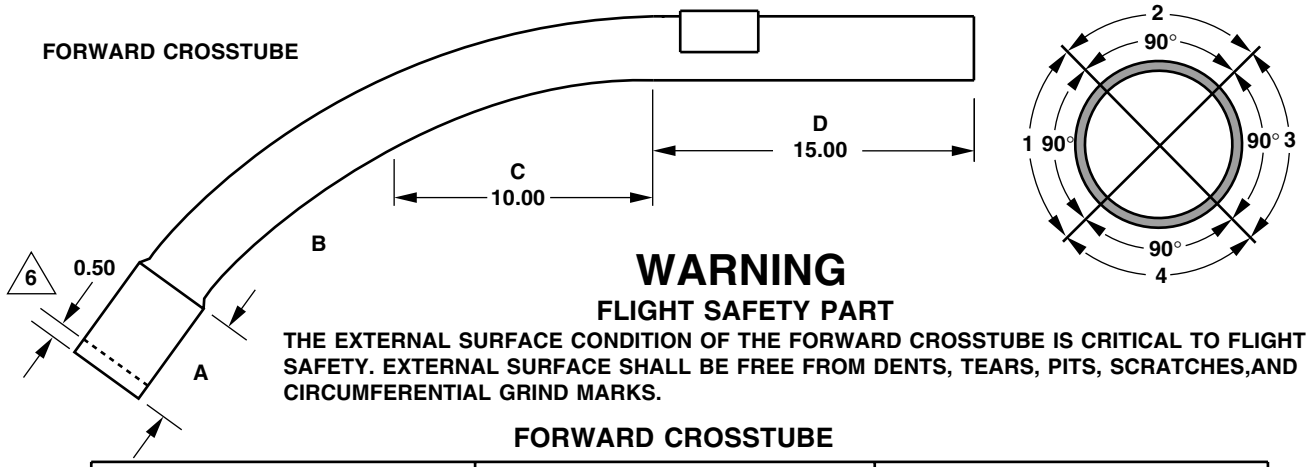


Chemical Conversion Materials

b. On all bare aluminum, brush or spray an application of Alodine 1201 (D57).

5. Apply coat of epoxy primer coating (D98) followed by a coat of paint (D150) to repair area (TM 55-1500-345-23).

GO TO NEXT PAGE



WARNING

FLIGHT SAFETY PART

THE EXTERNAL SURFACE CONDITION OF THE FORWARD CROSSTUBE IS CRITICAL TO FLIGHT SAFETY. EXTERNAL SURFACE SHALL BE FREE FROM DENTS, TEARS, PITS, SCRATCHES,AND CIRCUMFERENTIAL GRIND MARKS.

FORWARD CROSSTUBE

AREA	REFERENCE THICKNESS	ALLOWABLE DEPTH OF REPAIR
A △6	0.188	0.019 △6
B1	0.188	0.005
B2	0.188	0.015
B3	0.188	0.005
B4	0.188	0.015
C1	0.188	0.015
C2	0.188	0.005
C3	0.188	0.015
C4	0.188	0.005
D1	0.188	0.015
D2	0.188	0.005
D3	0.188	0.015
D4	0.188	0.005

APPLICATION: P/N 206-052-103-109/117

NOTES

1. **All dimensions are in inches.**
2. **Repairs limited to one repair per "quadrant", two at any cross section.**
3. **Log location and depth of all repairs for each crosstube.**
4. **Repair limits are lifetime accumulation at any location.**
5. **Repair in area A not to impinge on more than one fastener hole.**

△6 **Allowable depth of repair is 0.050 inch for bottom 0.50 inch of area A as indicated except within 0.315 radius of center of any fastener hole. Otherwise, limits for area A are as shown in table.**

406052-116
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Forward Crosstube — Damage Limits

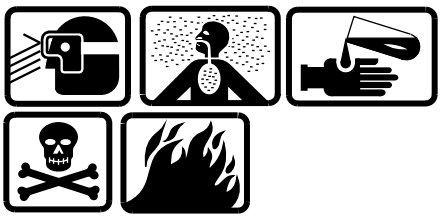
GO TO NEXT PAGE

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

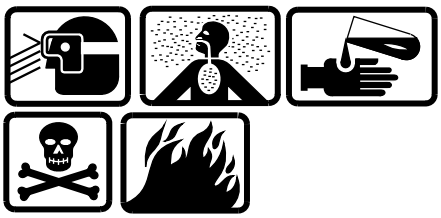
The external surface condition of the forward crosstube is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

6. Replace damaged rub strip (for weight on gear switch) on forward crosstube as follows:



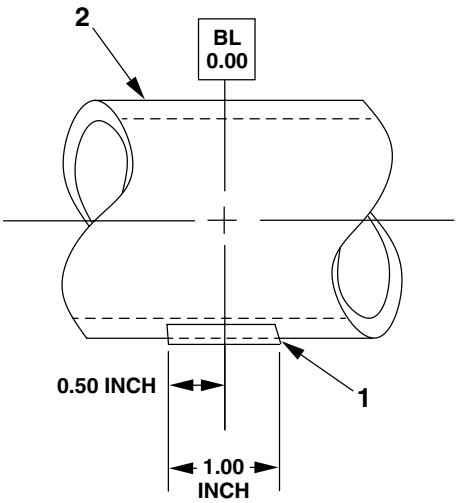
Dynasolve 165

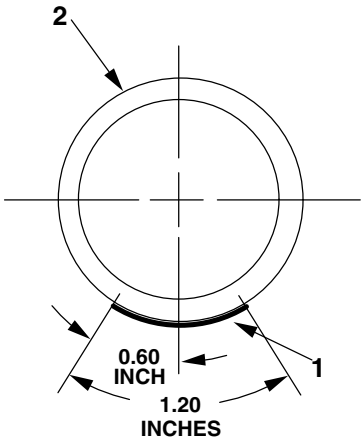
a. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) around edge of rub strip (1) to dissolve adhesive. Remove rub strip from crosstube (2).



Naphtha/Naphthalene, TT-N-97

b. Clean surface with aliphatic naphtha (D141) using wiping rags (D164).





CROSS SECTION OF FORWARD CROSSTUBE

406052-50
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GO TO NEXT PAGE

Cleaning Compound

c. Clean with soap cleaning compound (D192) and scouring pads (D147). Mix cleaning compound (D192) using 4 ounces per gallon of water.

Chemical Conversion Materials

d. Brush Alodine 1201 (D57) on surface with acid swabbing brush (D51). Wipe with tack rag (D209).

Adhesive

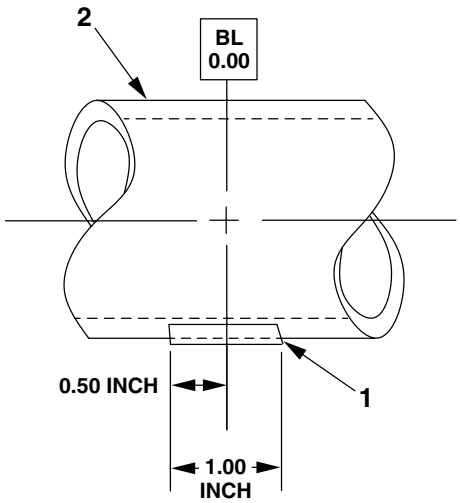
e. Apply adhesive (D14) to rub strip bonding surface using acid swabbing brush (D51).

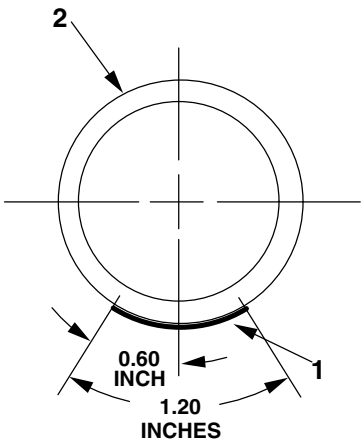
f. Apply rub strip (1) to forward crosstube (2) at location shown.

Sealing Compound

g. Apply a bead of sealing compound (D184) around rub strip.

INSPECT





CROSS SECTION OF FORWARD CROSSTUBE

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END OF TASK

3-1-29. FORWARD CROSSTUBE COMPONENTS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Protractor (B109)

Material:
Abrasive Mats (D1)
Acid Swabbing Brush (D51)
Adhesive (D11)
Aliphatic Naphtha (D141)
Chemical Conversion Coating (Alodine 1201) (D57)
Dynasolve 165 (D95)
Epoxy Primer Coating (D98)
Rubber Gloves (D111)
Scouring Pads (D147)
Sealing Compound (D184)
Soap Cleaning Compound (D192)
Tack Rag (D209)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

GO TO NEXT PAGE

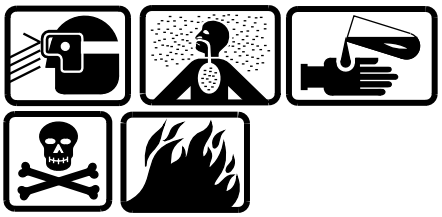
3-1-29. FORWARD CROSSTUBE COMPONENTS — REMOVAL/INSTALLATION (CONT)

REMOVE CLAMPS

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

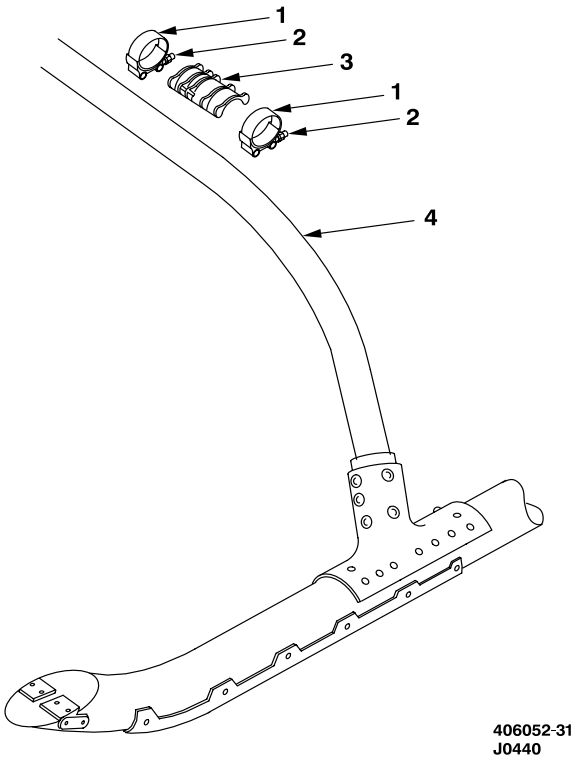
The external surface condition of the forward crosstube is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.



Dynasolve 165

1. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) to two clamps (1).

2. Loosen two adjustment nuts (2) and remove two clamps (1).



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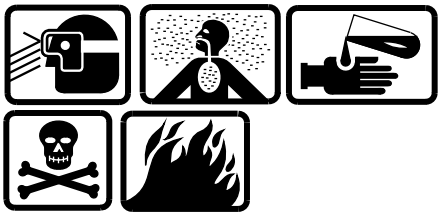
REMOVE SUPPORT



Dynasolve 165

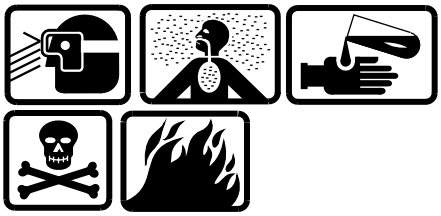
3. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) around edge of crosstube support (3) to dissolve epoxy sealant. Remove crosstube support (3) from crosstube (4).

GO TO NEXT PAGE

3-1-29. FORWARD CROSSTUBE COMPONENTS — REMOVAL/INSTALLATION (CONT)

INSTALL SUPPORT

4. Clean area of forward crosstube (4) where crosstube support (3) mounts as follows:

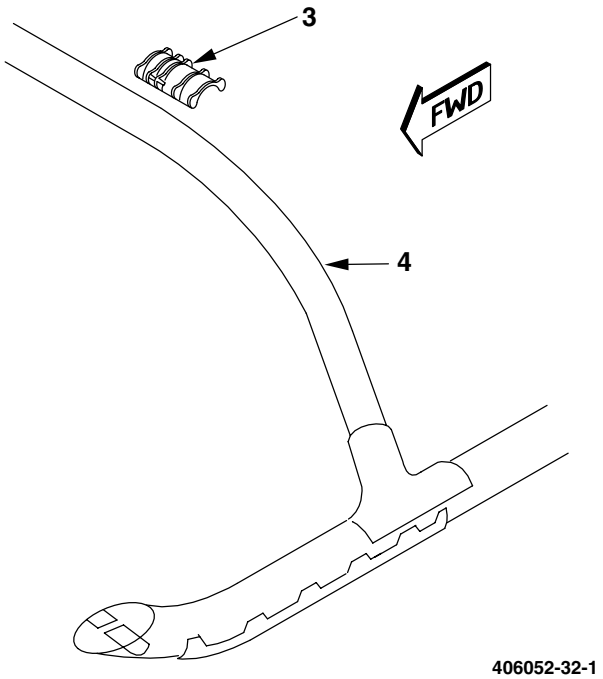


Naphtha/Naphthalene, TT-N-97

a. Clean the surface with aliphatic naphtha (D141) using wiping rag (D164).

Cleaning Compound

b. Clean with soap cleaning compound (D192), mixed with 4 ounces per gallon in water, and abrasive mats (D1) or scouring pads (D147).



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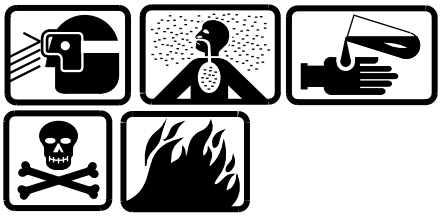
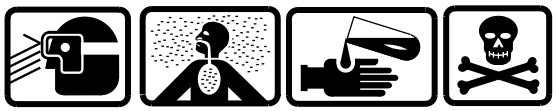


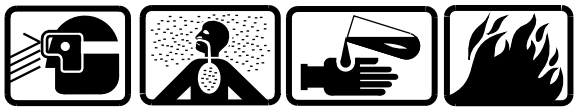
Chemical Conversion Materials

c. Brush Alodine 1201 (D57) on surface with acid swabbing brush (D51). Wipe with tack rag (D209). Refer to TM 55-1500-345-23.



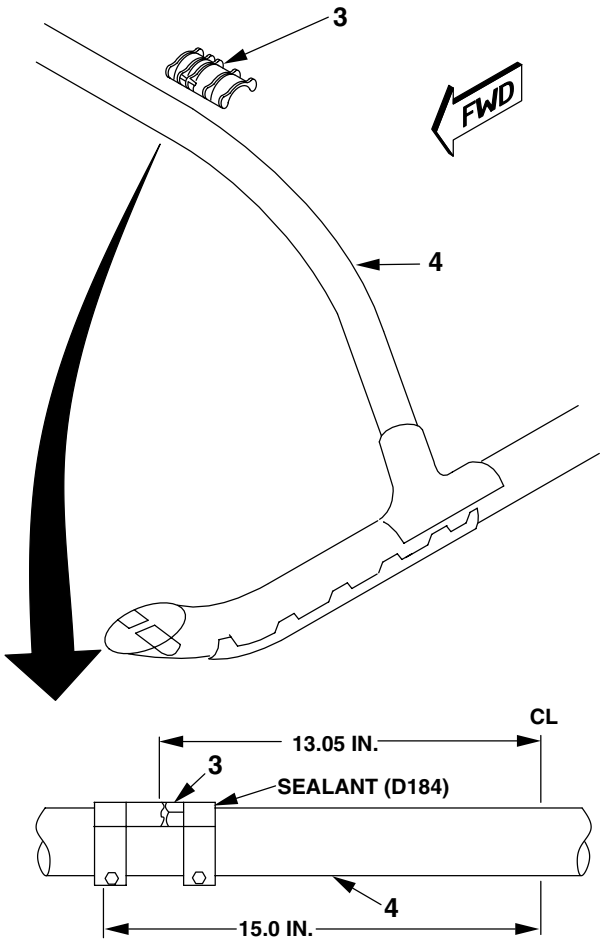
Adhesive

5. Apply adhesive (D11) to support mounting area of forward crosstube (4). Use acid swabbing brush (D51).



Sealing Compound

6. Install crosstube support (3) in position on forward crosstube (4) as shown. Apply a bead of sealing compound (D184) around edge of crosstube support (3) with an acid swabbing brush (D51).



VIEW LOOKING FORWARD

406052-32-2
J1996

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3-1-29. FORWARD CROSSTUBE COMPONENTS — REMOVAL/INSTALLATION (CONT)

INSTALL CLAMPS

Adhesive

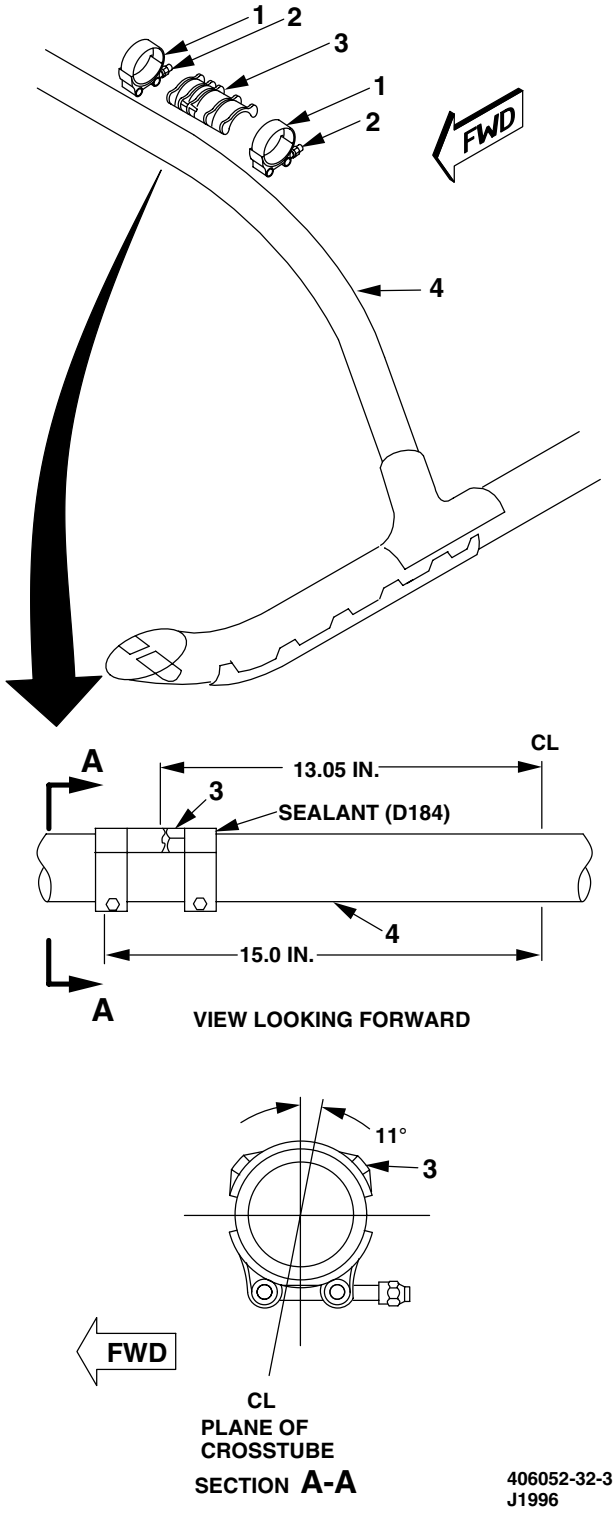
7. Apply adhesive (D11) to mounting area of crosstube support (3) and clamps (1). Use acid swabbing brush (D51).

8. Install two clamps (1) on crosstube support (3) and crosstube (4). Use a protractor (B109) to determine 11 degrees as shown in Section A-A.

9. Tighten adjustment nuts (2) within 30 minutes of adhesive application. Retighten adjustment nuts (2) as required after adhesive has cured (24 hours minimum).

10. Apply spray coat of epoxy primer coating (D98) to cleaned surface adjacent to crosstube support (3). Refer to TM 55-1500-345-23.

INSPECT



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3-1-29. FORWARD CROSSTUBE COMPONENTS — REMOVAL/INSTALLATION (CONT)

REMOVE NUTPLATE

11. Remove forward crosstube (Task 3-1-24).

12. Remove nutplate assembly (5) having damaged nutplate (6) by drilling out rivets (7). Refer to TM 1-1500-204-23.

13. Remove nutplate (6) from nutplate assembly (5) by drilling out rivets (8). Refer to TM 1-1500-204-23.

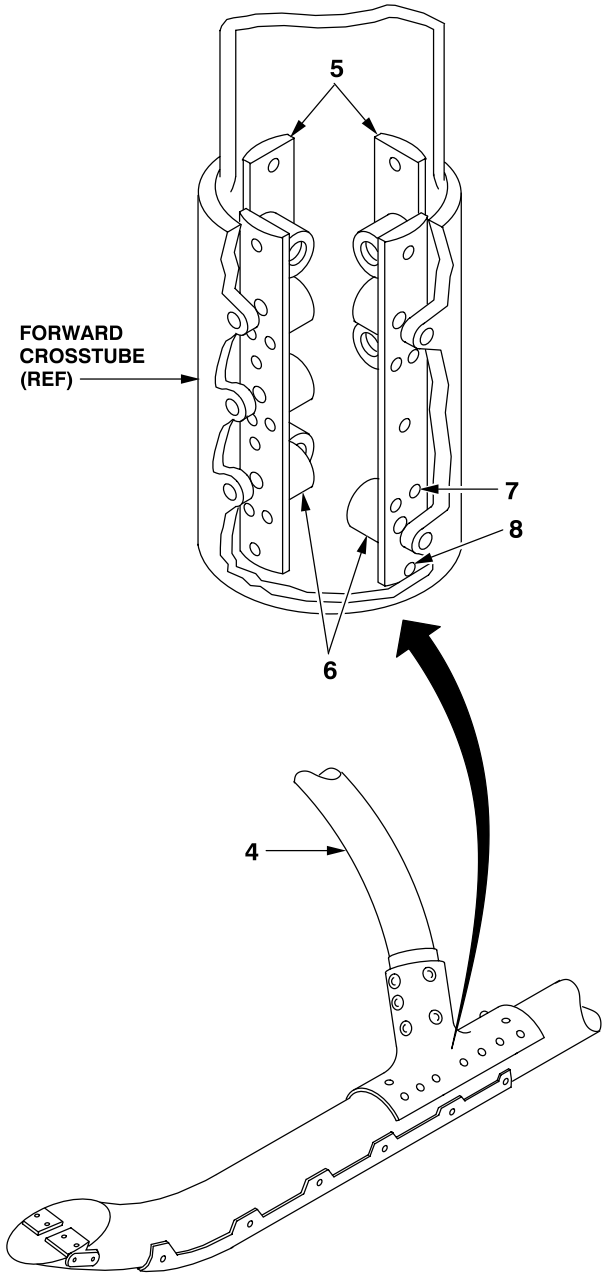
INSTALL NUTPLATE

14. Install nutplate (6) on nutplate assembly (5) using two rivets (7). Refer to TM 1-1500-204-23.

15. Install nutplate assembly (5) inside forward crosstube (4) using rivets (8). Refer to TM 1-1500-204-23.

16. Install forward crosstube (4) (Task 3-1-24).

INSPECT



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END OF TASK

3-1-30. FORWARD CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/ INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Heat Gun (B59)
Protractor (B109)
Rawhide Mallet (B96)
Plastic Scraper (B123)

Material:
Acid Swabbing Brush (D51)
Aliphatic Naphtha (D141)
Epoxy Primer Coating (D98)
Sealing Compound (D184)
Dynasolve 165 (D95)
Soap Cleaning Compound (D192)
Abrasive Mats (D1)
Scouring Pads (D147)
Chemical Conversion Coating (Alodine 1201) (D57)
Tack Rag (D209)
Adhesive (D14)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

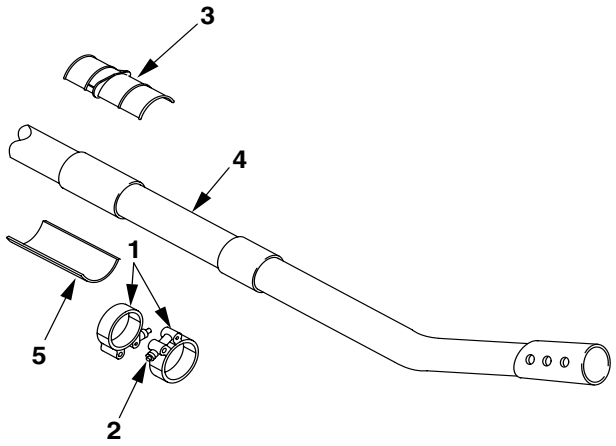
GO TO NEXT PAGE

3-1-30. FORWARD CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/ INSTALLATION (CONT)

REMOVE CLAMPS

1. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) to clamps (1).

2. Loosen two adjustment nuts (2) and remove two clamps (1) from support (3), crosstube (4), and support (5).



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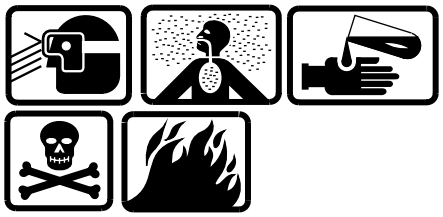
REMOVE SUPPORTS



Dynasolve 165

3. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) around edge of crosstube supports (3 and 5) to dissolve epoxy sealing compound.

4. Heat support (3) evenly for 10 minutes with heat gun (B59). While heat is still applied, use brass drift and rawhide mallet (B96) to gently tap outboard edge of support until support is removed.

5. Repeat procedure to remove support (5).

INSTALL SUPPORTS

6. Clean area of forward crosstube (4) where crosstube supports (3 and 5) mount as follows:

a. Remove adhesive residue from crosstube (4) and supports (3 and 5) using heat gun (B59) and plastic scraper (B123). Clean area with scouring pad (D147).

Naphtha/Naphthalene, TT-N-97

b. Clean surface with aliphatic naphtha (D141) using wiping rag (D164).

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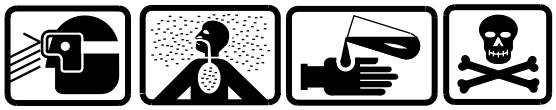
3-1-30. FORWARD CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/ INSTALLATION (CONT)



Cleaning Compound

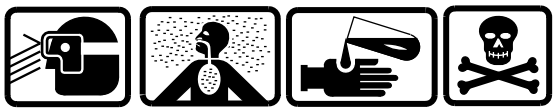
CAUTION

To prevent damage to helicopter, care must be taken that crosstube is not scratched. All scraping motions shall be parallel to crosstube. Damage criteria are contained in task 3-1-27.

c. Clean with soap cleaning compound (D192) mixed 4 ounces per gallon of water, and abrasive mats (D1) or scouring pads (D147).

Chemical Conversion Materials

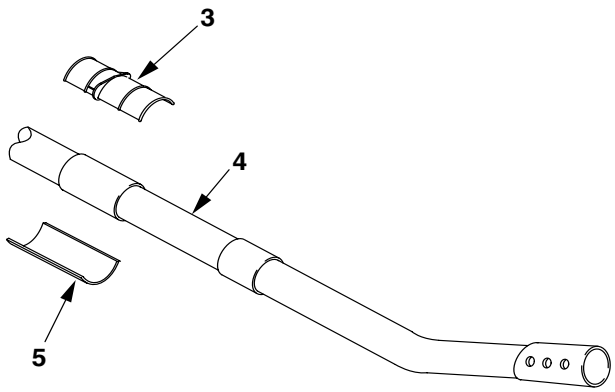
d. Brush Alodine 1201 (D57) on surface with acid swabbing brush (D51). Wipe with tack rag (D209).



Adhesive

7. Apply adhesive (D14) to support mounting area of forward crosstube (4).

8. Install crosstube supports (3 and 5) on forward crosstube (4) as shown.



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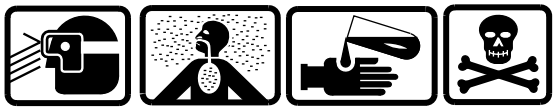
3-1-30. FORWARD CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/ INSTALLATION (CONT)

9. Ensure crosstube upper supports (3) and lower supports (5) face opposite each other, with notch end inboard, when installed. Use protractor (B109) to determine 11 degrees as shown in section B-B.

Sealing Compound

10. Apply a bead of sealing compound (D184) around edge of crosstube supports (3 and 5).

INSTALL CLAMPS



Adhesive

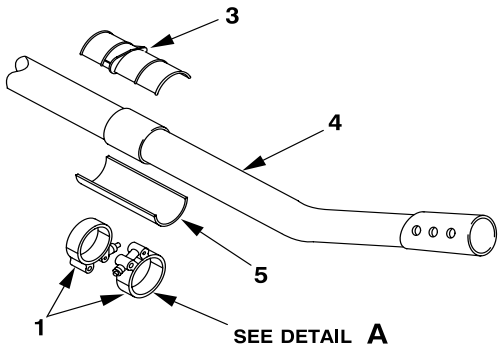
11. Apply adhesive (D14) to clamp mounting area of crosstube supports (3 and 5) and clamps (1).

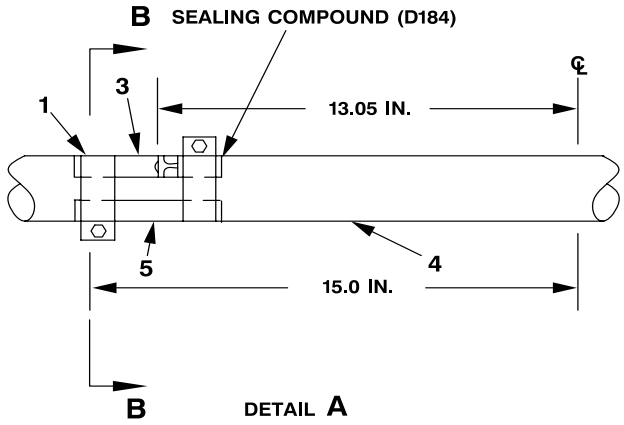
12. Install two clamps (1) on crosstube (4). Use a protractor (B109) to determine 11 degrees as shown in Section B-B.

13. Tighten adjustment nuts (2) within 30 minutes of adhesive application. Retighten adjustment nuts (2) as required after adhesive has cured (24 hours minimum).

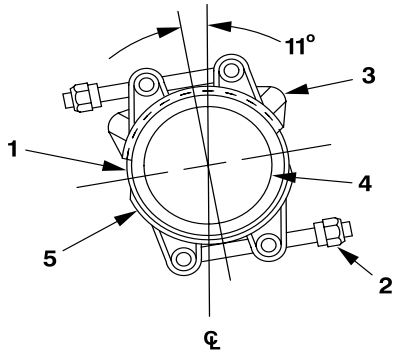
14. Apply spray coat of epoxy primer coating (D98) to cleaned surface adjacent to crosstube supports (3 and 5) (TM 55-1500-345-23).

INSPECT





DETAIL A
VIEW LOOKING FORWARD
(FWD CROSSTUBE SUPPORT)



PLANE OF CROSSTUBE
SECTION B-B

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J1996

GO TO NEXT PAGE

3-1-30. FORWARD CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/ INSTALLATION (CONT)

REMOVE NUTPLATE

15. Remove nutplate assembly (6) by drilling out rivets (7) (TM 1-1500-204-23).

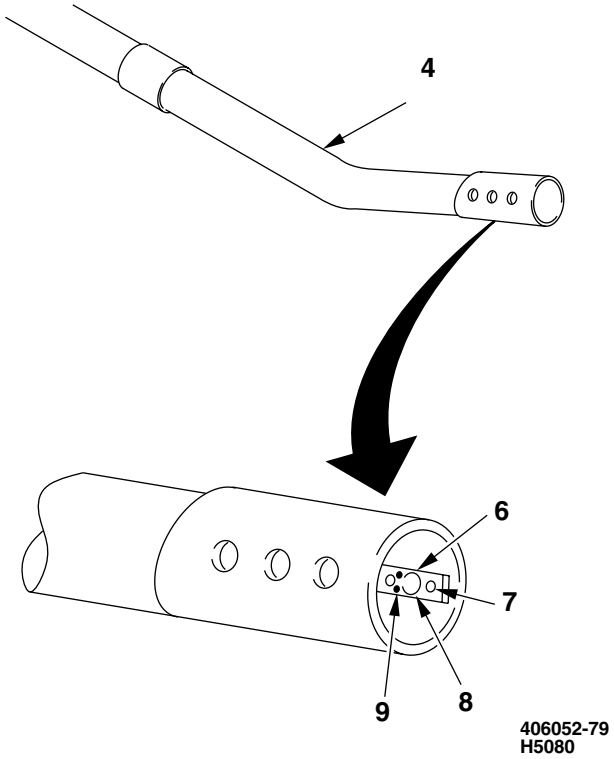
16. Remove nutplate (8) on nutplate assembly (6) by drilling out rivets (9) (TM 1-1500-204-23).

INSTALL NUTPLATE

17. Install nutplate (8) on nutplate assembly (6) using two rivets (9) (TM 1-1500-204-23).

18. Install nutplate assembly (6) inside forward crosstube (4) using rivets (7).

INSPECT



END OF TASK

3-1-31. FORWARD CROSSTUBE COMPONENTS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Acid Swabbing Brush (D51)
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

CLEAN

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward crosstube is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

Drycleaning Solvent

1. Clean crosstube support surface with drycleaning solvent (D199).

2. Dry crosstube support with a wiping rag (D164).

GO TO NEXT PAGE

3-1-31. FORWARD CROSSTUBE COMPONENTS — CLEANING/INSPECTION/REPAIR (CONT)

INSPECT

3. Inspect crosstube support to limits shown. If damage is beyond limits, replace crosstube support. See figure Crosstube Support — Damage Limits.

4. Inspect nutplates for damage. No damage allowed.

REPAIR

Sanding Operations

5. Polish out reparable damage using 400 grit sandpaper (D175).

6. Apply coat of epoxy primer coating (D98) followed by a coat of paint (D150). Refer to TM 55-1500-345-23.

7. Replace damaged nutplates (Task 3-1-29).

INSPECT

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.010 In. before and 0.020 in. after repair
CORROSION	0.010 In. before and 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.50 Sq. in.
NUMBER OF REPAIRS	One per segment
EDGE CHAMFER TO REMOVE DAMAGE	0.03 In.

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J0440

Crosstube Support — Damage Limits

END OF TASK

3-1-32. FORWARD CROSSTUBE SUPPORTS (RAPID DEPLOYMENT) — CLEANING/INSPECTION/ REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean crosstube support surface with drycleaning solvent (D199).

2. Dry crosstube support with a wiping rag (D164).

INSPECT

3. Inspect crosstube support to limits shown. If damage is beyond limits, replace crosstube support. See figure Rapid Deployment Forward Crosstube Supports — Damage Limits.

REPAIR

Sanding Operations

4. Polish out reparable damage using 400 grit sandpaper (D175).

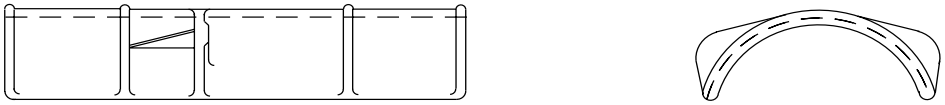
5. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

INSPECT

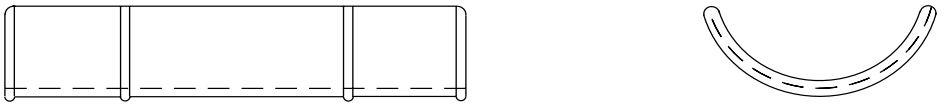
GO TO NEXT PAGE

3-1-32. FORWARD CROSSTUBE SUPPORTS (RAPID DEPLOYMENT) — CLEANING/INSPECTION/ REPAIR (CONT)

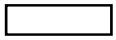
UPPER CROSSTUBE SUPPORT



LOWER CROSSTUBE SUPPORT



DAMAGE LOCATION SYMBOLS



TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 in. before repair 0.020 in. after repair
CORROSION:	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.50 Sq. In.
MAXIMUM NUMBER OF REPAIRS	One per segment
EDGE CHAMFER	0.030 in. x 45°

NOTE:

No cracks permitted.

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Rapid Deployment Forward Crosstube Supports — Damage Limits

END OF TASK

3-1-33. AFT CROSSTUBE — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)
Torque Wrench (B237)

Material:
Sealing Compound (D184)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

REMOVE

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the aft crosstube is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

1. Remove cotter pin (1) from center bolt (2) in aft crosstube support beam (3).

2. Remove nut (4), washer (5), and center bolt (2).

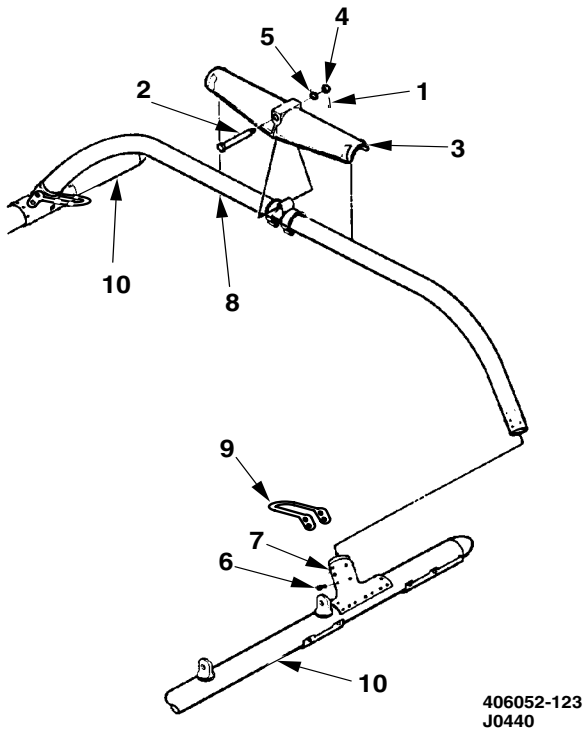
3. Remove aft crosstube support beam (3).

4. Remove nine screws (6) at saddles (7) on each end of aft crosstube (8).

5. Remove aft crosstube support fitting (9).

6. Trim sealant from top edge of saddles (7) and crosstube (8) using a plastic scraper (B123).

7. Pull ends of crosstube from sockets of saddles (7) and separate skid tubes (10) from crosstube (8).



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3-1-33. AFT CROSSTUBE — REMOVAL/INSTALLATION (CONT)

INSTALL

Sealing Compound

8. Coat mating surfaces of crosstube (8) with sealing compound (D184).

9. Insert ends of aft crosstube (8) into sockets of saddles (7) to assemble skid tubes (10) and aft crosstube (8).

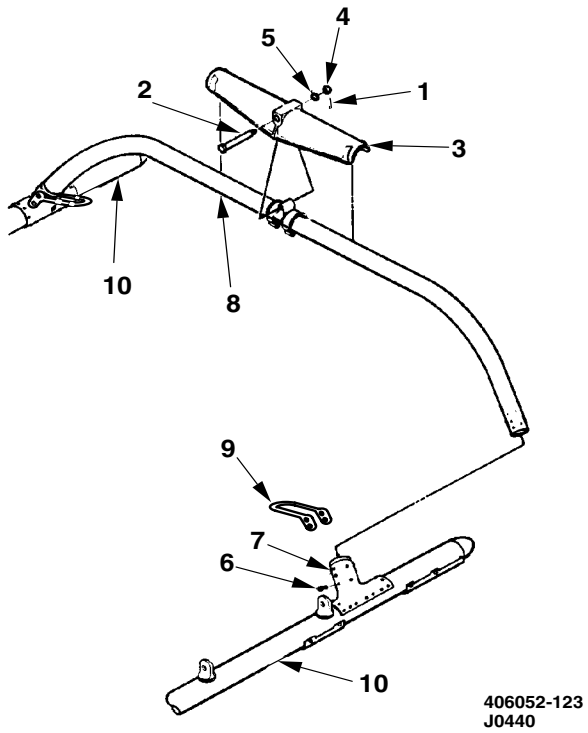
10. Install aft crosstube support fitting (9).

11. Install nine screws (6) at saddles (7) on each end of crosstube (8) to secure saddles (7) to crosstube (8).

Sealing Compound

12. Apply bead of sealing compound (D184) around crosstube (8) at top of saddles (7).

13. Place aft crosstube support beam (3) in position. Secure with bolt (2), washer (5), and nut (4). Torque nuts (4) **60 TO 85 INCH-POUNDS** and install cotter pin (1) through nut (4).



INSPECT

END OF TASK

3-1-34. AFT CROSSTUBE (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)
Torque Wrench (B237)
Torque Wrench (B239)

Material:
Sealant (D179)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
MMS Hoist Ball Removed (Task 3-1-53)

GO TO NEXT PAGE

3-1-34. AFT CROSSTUBE (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove cotter pin (1) from center bolt (2) in aft crosstube support beam (3).
2. Remove nut (4), washer (5), and center bolt (2).
3. Remove aft crosstube support beam (3).
4. Remove 12 bolts (6) and 12 washers (7) from left knuckle assembly (8).
5. Remove 10 bolts (6) and 10 washers (7) from right knuckle assembly (9).
6. Pull ends of crosstube (10) from knuckle assemblies (8 and 9).
7. Remove sealant with plastic scraper (B123).

INSTALL

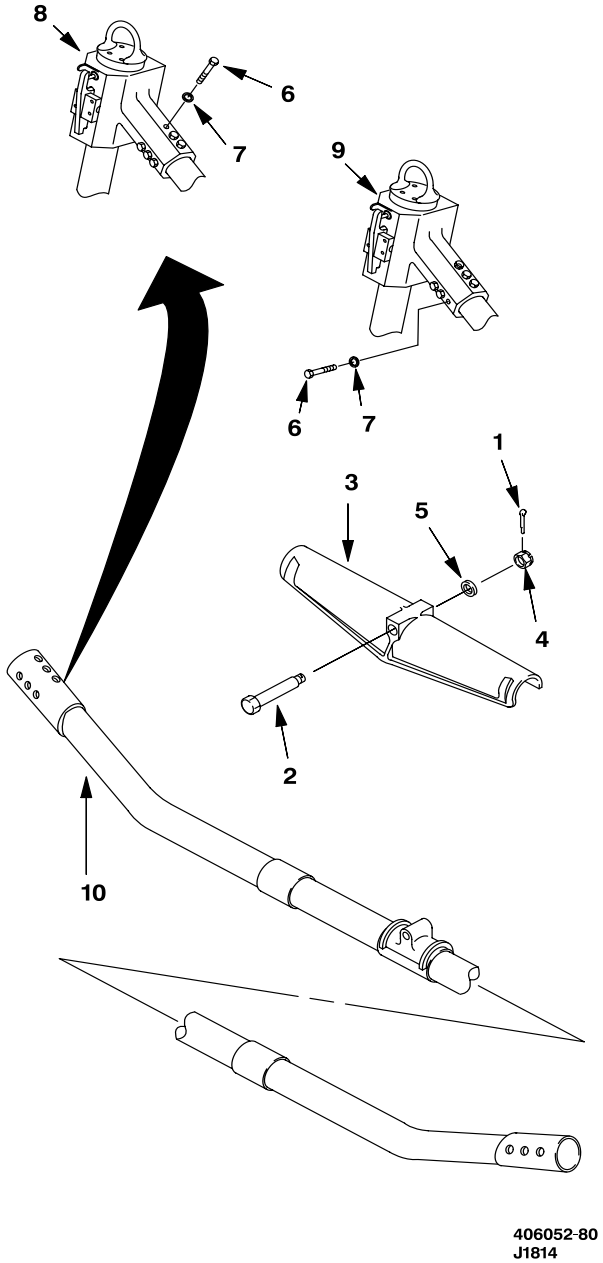
Sealing Compound

8. Apply coat of sealant (D179) to inside surfaces of knuckle assemblies (8 and 9).
9. Insert ends of aft crosstube (10) into knuckle assemblies (8 and 9).
10. Install 12 washers (7) and 12 bolts (6) on left knuckle assembly (8) to secure to crosstube (10).
11. Install 10 washers (7) and 10 bolts (6) on right knuckle assembly (9) to secure to crosstube (10). Torque bolts (6) **100 TO 140 INCH-POUNDS**.

NOTE

Bolt shall be installed with head facing forward.

12. Place aft crosstube support beam (3) in position. Secure with bolt (2), washer (5), and nut (4). Torque nut (4) **60 TO 85 INCH-POUNDS** and secure with cotter pin (1).



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INSPECT

FOLLOW-ON MAINTENANCE

Install MMS hoist ball (Task 3-1-53).

END OF TASK

3-1-35. AFT CROSSTUBE — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rag (D164)
Chemical Conversion Coating (Alodine 1201) (D57)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 1-1520-266-23

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the aft crosstube is critical to flight safety.

CLEAN

Drycleaning Solvent

1. Clean aft crosstube surface with drycleaning solvent (D199).

2. Dry aft crosstube surface with a wiping rag (D164).

INSPECT

CAUTION

To prevent breakage of crosstube, repair limits shall not be exceeded. Repair limits are a lifetime accumulation at any location.

3. Inspect crosstube for scratches, nicks, and dents. If damage is beyond limits, replace crosstube. See figure Aft Crosstube — Damage Limits. If crack in crosstube is suspected perform ultrasound inspection (TM 1-1520-266-23).

NOTE

Scratches and nicks of less than **0.004 inch** depth and corrosion less than **0.002 inch** depth may be considered negligible in all surface areas of the aft crosstube, provided the damage is blended out.

a. Circumferential scratches, dents, nicks, and any other damage exceeding negligible damage limits shall be polished out, not to exceed the limits indicated, and be blended out smooth within **0.60 inch** circumferential length.

b. Longitudinal scratches, nicks, and any other damage extending longitudinally that exceeds negligible damage limits shall be polished out, provided damage may be blended out smoothly within **2.00 inches** of the tube length and minimum distance between repairs is **3.00 inches**.

c. Corrosion damage limits are one-half of repair limits specified for scratches.

GO TO NEXT PAGE

REPAIR

Sanding Operations

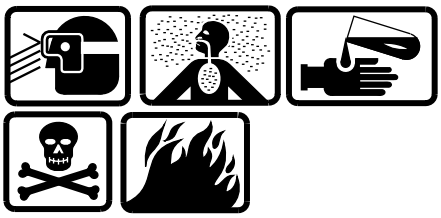
CAUTION

To prevent breakage of crosstube, repair limits shall not be exceeded. When overlapping damage is repaired, most critical maximum limits for entire repair area shall be used.

Sanding Operations

4. Polish out reparable damage using 400 grit sandpaper (D175). No circumferential grinding is allowed.

a. Corrosion shall be cleaned up to twice the visible corrosion depth and the blendout area shall not exceed the limits of paragraph 3.



Chemical Conversion Materials

b. On all bare aluminum, brush or spray an application of Alodine 1201 (D57).

5. Apply coat of epoxy primer coating (D98) followed by a coat of paint (D150) to repair area (TM 55-1500-345-23).

INSPECT

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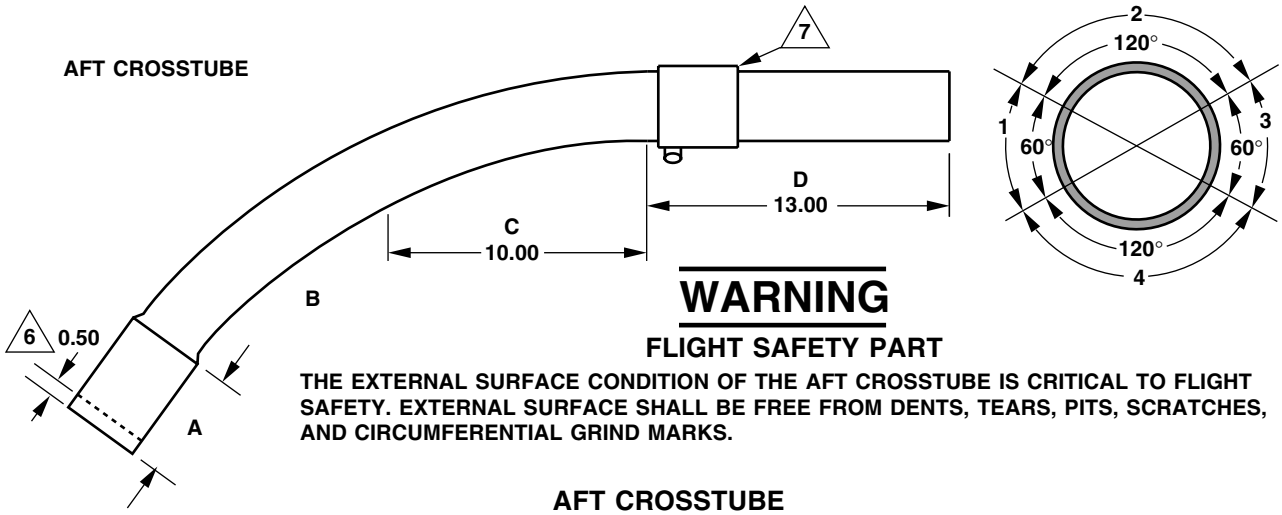

WARNING

FLIGHT SAFETY PART

THE EXTERNAL SURFACE CONDITION OF THE AFT CROSSTUBE IS CRITICAL TO FLIGHT SAFETY. EXTERNAL SURFACE SHALL BE FREE FROM DENTS, TEARS, PITS, SCRATCHES, AND CIRCUMFERENTIAL GRIND MARKS.

AFT CROSSTUBE

AREA	REFERENCE THICKNESS	ALLOWABLE DEPTH OF REPAIR
A 6	0.250	0.025 6
B1	0.110	0.011
B2	0.110	0.011
B3	0.110	0.011
B4	0.110	0.011
C1	0.187	0.015
C2	0.187	0.010
C3	0.187	0.015
C4	0.187	0.010
D1	0.268	0.015
D2	0.268	0.013
D3	0.268	0.015
D4	0.268	0.013

NOTES

1. All dimensions are in inches.
2. Repairs limited to one repair per "quadrant", two at any cross section.
3. Log location and depth of all repairs for each crosstube.
4. Repair limits are lifetime accumulation at any location.
5. Repair in area A not to impinge on more than one fastener hole.

6 Allowable depth of repair is 0.050 inch for bottom 0.50 inch of area A as indicated except within 0.315 radius of center of any fastener hole. Otherwise, limits for area A are as shown in table.

7 Allowable depth of repair for clamps is 0.010 inch for all "quadrants".

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Aft Crosstube — Damage Limits

END OF TASK

3-1-36. CROSSTUBE CLAMPS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Protractor (B109)

Material:
Acid Swabbing Brush (D51)
Adhesive (D11)
Aliphatic Naphtha (D141)
Dynasolve 165 (D95)
Wiping Rag (D164)
Tack Rag (D209)
Cleaning Compound (D192)
Abrasive Mats (D1)
Scouring Pads (D147)
Chemical Conversion Coating (Alodine 1201) (D57)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Helicopter Repairer

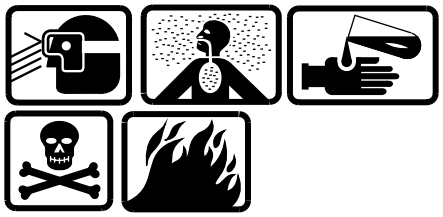
Equipment Condition:
Aft Crosstube Support Beam and Components Removed (Task 3-1-43)

GO TO NEXT PAGE

3-1-36. CROSSTUBE CLAMPS — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Loosen nut (1) on clamp (2).

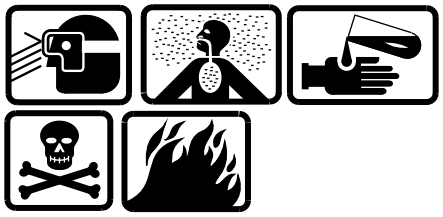


Dynasolve 165

2. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) to dissolve adhesive (D11) bonding clamp (2) to crosstube (3).

3. Remove damaged clamp (2) from crosstube (3).

INSTALL



Naphtha/Naphthalene, TT-N-97

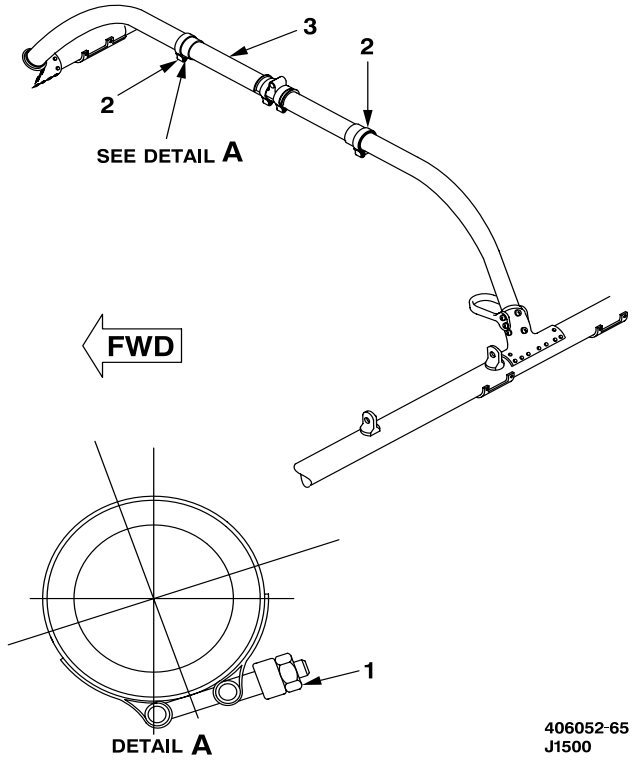
4. Remove old adhesive from mating surface on crosstube (3) using aliphatic naphtha (D141) and wiping rags (D164)

Cleaning Compound

5. Clean area with cleaning compound (D192), mixed one part to four parts water, and abrasive mats (D1) or scouring pads (D147).

6. Rinse thoroughly with clean water.

7. Dry with clean wiping rag (D164).



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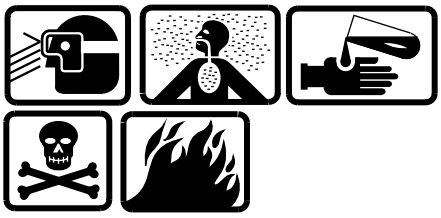


Chemical Conversion Materials

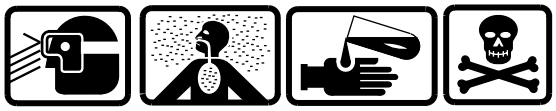
8. Apply Alodine 1201 (D57) to cleaned surface of crosstube (3) with acid swabbing brush (D51).

9. Rinse thoroughly with clean water.

10. Dry with wiping rag (D164).

11. Use protractor (B109) to determine 19° tilt position for clamps (2).

12. Measure **11.90 inches** from center of crosstube support to locate outboard edge of clamps (2).



Adhesive

13. Apply adhesive (D11) to mating surfaces on crosstube (3) and new clamp (2) using acid swabbing brush (D51).

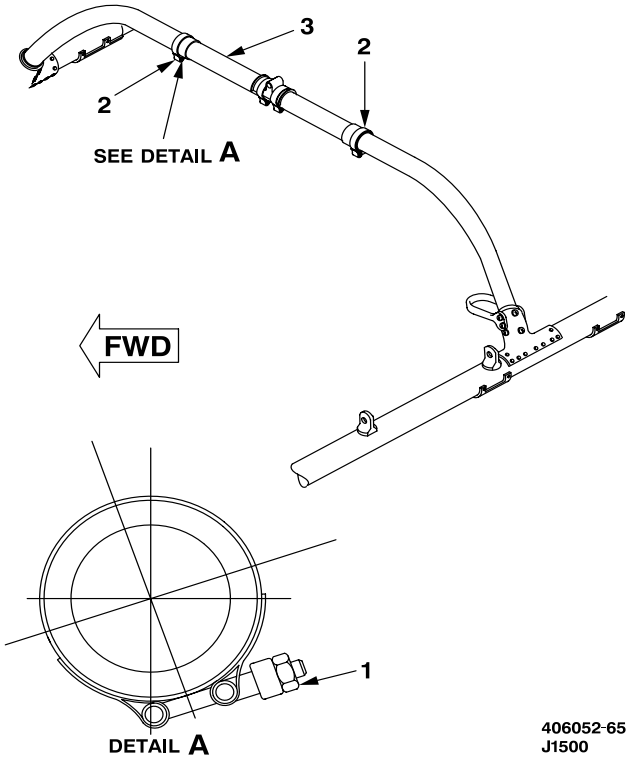
NOTE

Nineteen degree tilt position of clamps (2) shall be maintained while tightening nuts (1). Clamps should be aligned with crosstube support clamps (4).

14. Place new clamp (2) in position on crosstube (3) and tighten nuts (1).

15. Retighten nuts (1) as required after adhesive (D11) has fully cured (24 hour minimum).

INSPECT



END OF TASK

3-1-37. AFT CROSSTUBE (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Chemical Conversion Coating (Alodine 1201) (D57)
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

GO TO NEXT PAGE

3-1-37. AFT CROSSTUBE (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Clean aft crosstube surface with drycleaning solvent (D199).

2. Dry aft crosstube surface with a wiping rag (D164).

INSPECT

3. Inspect crosstube for scratches, nicks, cracks, corrosion, and dents. If damage is beyond limits, replace crosstube. See figure Rapid Deployment Aft Crosstube — Damage Limits.

4. Minimum distance between longitudinal nick or scratch repairs is **2.00 inches**. Circumferential scratches must not exceed a 45 degree arc. No cracks or sharp dents are permitted.

REPAIR

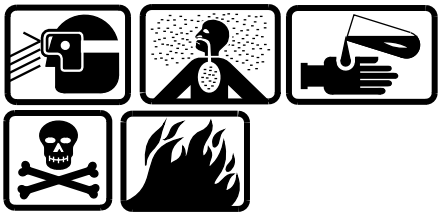
CAUTION

To prevent failure of repair, when overlapping damage is repaired, most critical maximum limits for entire repair area shall be used.

Sanding Operations

5. Polish out reparable damage using 400 grit sandpaper (D175).

a. Corrosion shall be cleaned up to twice the visible corrosion depth and the blendout area shall not exceed the limits of steps 3 and 4.



Chemical Conversion Materials

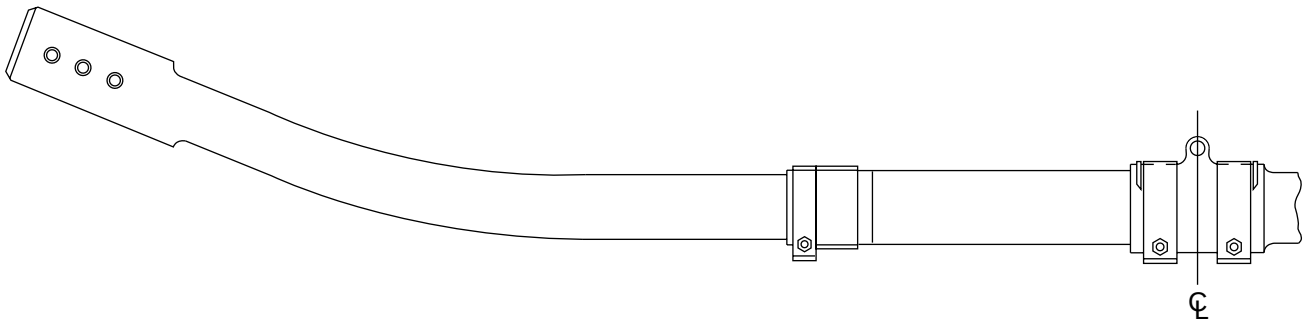
b. On all bare aluminum, brush or spray an application of Alodine 1201 (D57).

6. Apply coat of epoxy primer coating (D98) followed by coat of paint (D150) to repair area (TM 55-1500-345-23).

INSPECT

GO TO NEXT PAGE

3-1-37. AFT CROSSTUBE (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)



AFT CROSSTUBE

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
NICKS, SCRATCHES AND CORROSION DEPTH LIMITS	0.003 In. △1 before repair 0.006 In. max after repair
MAXIMUM REPAIR LENGTH ALONG CIRCUMFERENCE OF TUBE	0.150 In.
MAXIMUM REPAIR LENGTH LONGITUDINAL ON TUBE	0.050 In.

NOTE:

△1 Limits are without re-shot peening

2. No cracks permitted

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Rapid Deployment Aft Crosstube — Damage Limits

END OF TASK

3-1-38. AFT CROSSTUBE (NONSTANDARD) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rag (D164)
Chemical Conversion Coating (Alodine 1201) (D57)
Acid Swabbing Brush (D51)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the aft crosstube is critical to flight safety.

CLEAN

Drycleaning Solvent

1. Clean aft crosstube surface with drycleaning solvent (D199).

2. Dry aft crosstube surface with a wiping rag (D164).

INSPECT

CAUTION

To prevent failure of repair and breakage of crosstube, repair limits shall not be exceeded. Repair limits are a lifetime accumulation at any location.

3. Inspect crosstube for scratches, nicks, and dents. If damage is beyond limits, replace crosstube. See figure Aft Crosstube — Damage Limits.

NOTE

Scratches and nicks of less than **0.005 inch** depth and corrosion less than **0.002 inch** depth may be considered negligible in all surface areas of the aft crosstube provided the damage is blended out.

a. Circumferential scratches, dents, nicks, and any other damage exceeding negligible damage limits shall be polished out, not to exceed the limits indicated provided damage may be blended out smooth within **0.60 inch** circumferential length.

b. Longitudinal scratches, nicks, and any other damage extending longitudinally that exceeds negligible damage limits shall be polished out provided damage may be blended on smoothly within **1.50 inches** of the tube length and minimum distance between repairs in **6.00 inches**.

c. Corrosion damage limits are one-half of repair limits specified for scratches.

GO TO NEXT PAGE

REPAIR

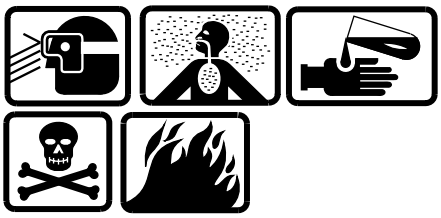
CAUTION

To prevent breakage of crosstube, repair limits shall not be exceeded. When overlapping damage is repaired, use most critical maximum limits for entire repair area.

Sanding Operations

4. Polish out reparable damage using 400 grit sandpaper (D175). No circumferential grinding is allowed.

a. Corrosion shall be cleaned up to twice the visible corrosion depth and the blendout area shall not exceed the limits of paragraph 3.



Chemical Conversion Materials

b. On all bare aluminum, brush, or spray an application of Alodine 1201 (D57).

5. Apply a coat of epoxy primer coating (D98) followed by a coat of paint (D150) to repair area (TM 55-1500-345-23).

INSPECT

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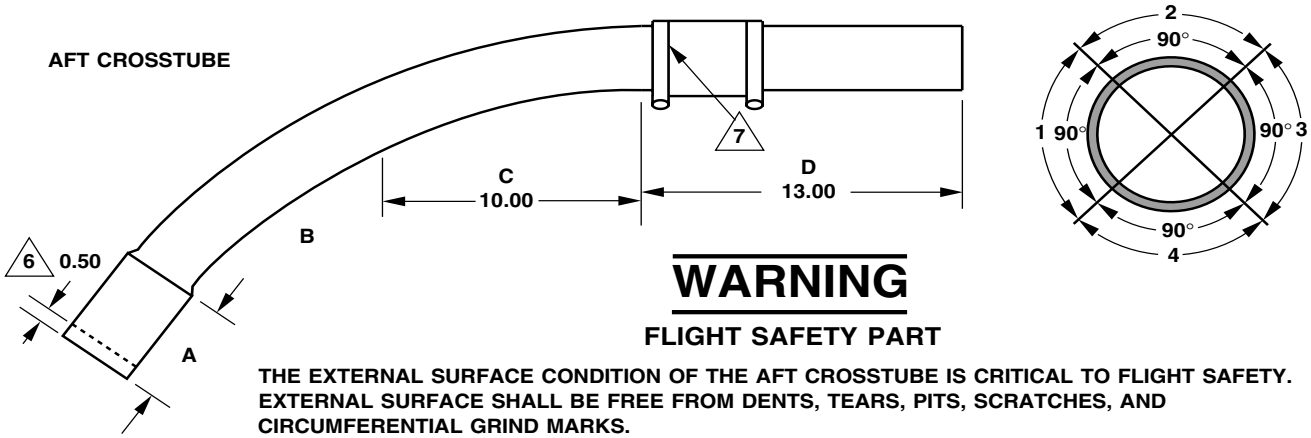

WARNING

FLIGHT SAFETY PART

THE EXTERNAL SURFACE CONDITION OF THE AFT CROSSTUBE IS CRITICAL TO FLIGHT SAFETY. EXTERNAL SURFACE SHALL BE FREE FROM DENTS, TEARS, PITS, SCRATCHES, AND CIRCUMFERENTIAL GRIND MARKS.

AFT CROSSTUBE

AREA	REFERENCE THICKNESS	ALLOWABLE DEPTH OF REPAIR
A 6	0.250	0.025 6
B1	0.200	0.005
B2	0.200	0.015
B3	0.200	0.005
B4	0.200	0.015
C1	0.200	0.015
C2	0.200	0.005
C3	0.200	0.015
C4	0.200	0.005
D1	0.272	0.015
D2	0.272	0.005
D3	0.272	0.015
D4	0.272	0.005

NOTES

1. **All dimensions are in inches.**
2. **Repairs limited to one repair per "quadrant", two at any cross section.**
3. **Log location and depth of all repairs for each crosstube.**
4. **Repair limits are lifetime accumulation at any location.**
5. **Repair in area A not to impinge on more than one fastener hole.**

6 **Allowable depth of repair is 0.050 inch for bottom 0.50 inch of area A as indicated except within 0.315 radius of center of any fastener hole. Otherwise, limits for area A are as shown in table.**

7 **Allowable depth of repair for clamps is 0.010 inch for all "quadrants".**

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Aft Crosstube — Damage Limits

END OF TASK

3-1-39. AFT CROSSTUBE COMPONENTS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Protractor (B109)
Torque Wrench (B237)

Material:
Abrasive Mats (D1)
Acid Swabbing Brush (D51)
Adhesive (D11)
Aliphatic Naphtha (D141)
Chemical Conversion Coating (Alodine 1201) (D57)
Dynasolve 165 (D95)
Rubber Gloves (D111)
Scouring Pads (D147)
Sealing Compound (D184)
Soap Cleaning Compound (D192)
Tack Rag (D209)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer (2)

References:
TM 1-1500-204-23

Equipment Condition:
Aft Crosstube Support Beam Removed (Task 3-1-43)

GO TO NEXT PAGE

3-1-39. AFT CROSSTUBE COMPONENTS — REMOVAL/INSTALLATION (CONT)

REMOVE CLAMPS

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

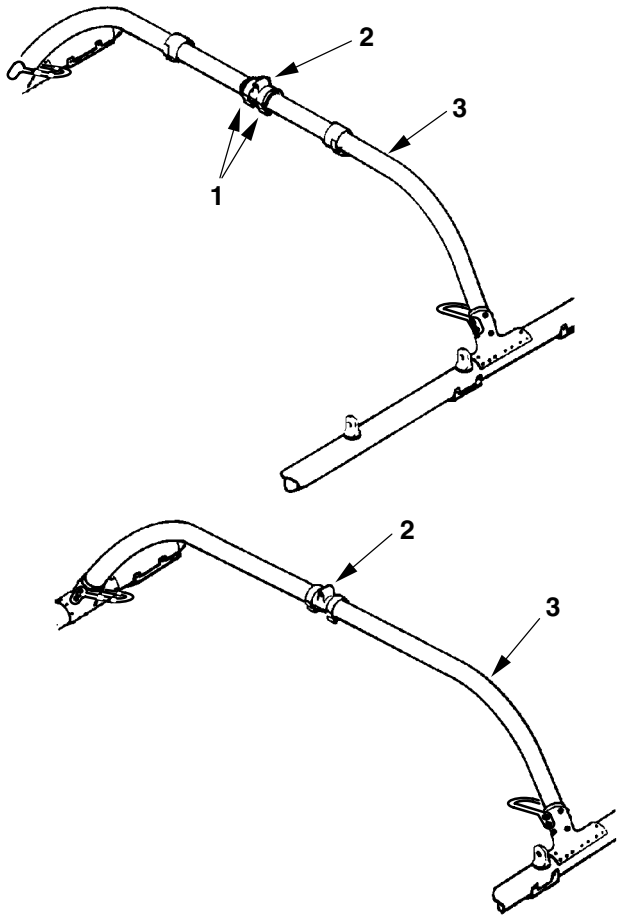
The external surface condition of the forward crosstube is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

Dynasolve 165

1. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) to two clamps (1). Remove two clamps (1).

REMOVE SUPPORT

2. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) around edge of crosstube support (2) to dissolve epoxy sealant. Remove crosstube support (2) to dissolve epoxy sealant. Remove crosstube support (2) from aft crosstube (3).



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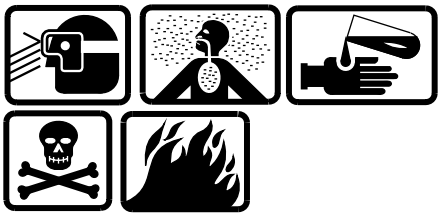
3-1-39. AFT CROSSTUBE COMPONENTS — REMOVAL/INSTALLATION (CONT)

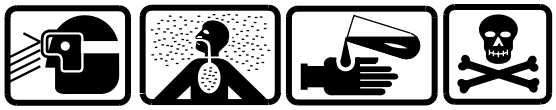
INSTALL SUPPORT

3. Clean area of aft crosstube (3) where crosstube support (2) and clamps (1) mount, as follows:



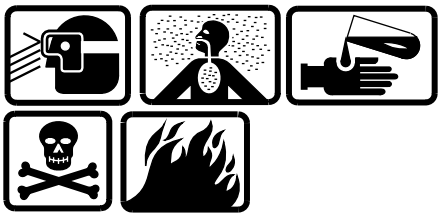
Naphtha/Naphthalene, TT-N-97

a. Clean the surface with aliphatic naphtha (D141) using wiping rag (D164).



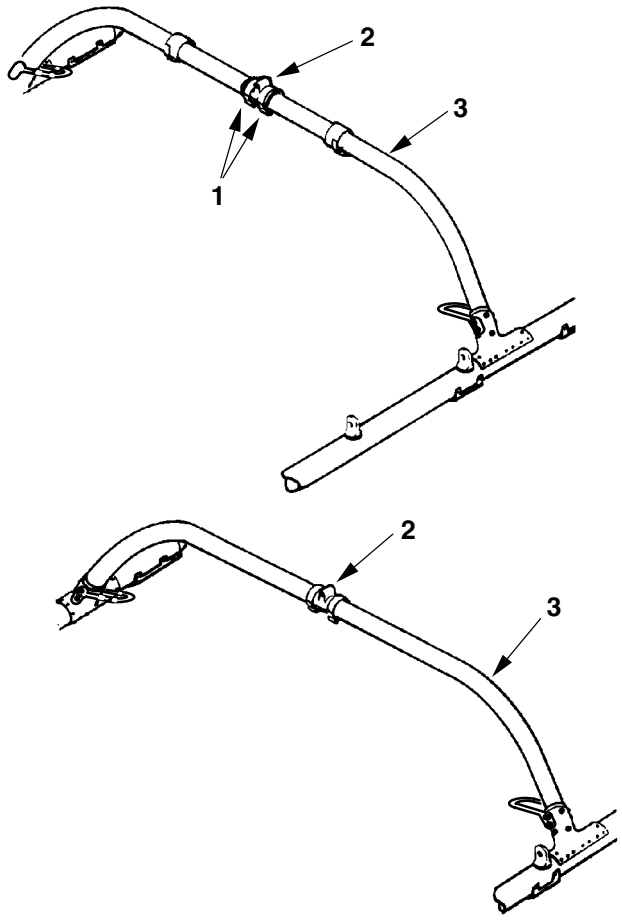
Cleaning Compound

b. Clean with soap cleaning compound (D192), mixed with 4 ounces per gallon in water, and abrasive mats (D1) or scouring pads (D147).



Chemical Conversion Materials

c. Brush Alodine (D57) on surface with acid swabbing brush (D51). Wipe with tack rag (D209).



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Adhesive

4. Apply adhesive (D11) to support mounting area (2). Use acid swabbing brush (D51).

5. Use a protractor (B109) to determine 19 degrees and install crosstube support (2) in position shown in Section A-A.

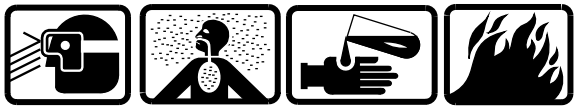
INSTALL CLAMPS

Adhesive

6. Apply adhesive (D11) to mounting area of crosstube support (2) and clamps (1). Use acid swabbing brush (D51).

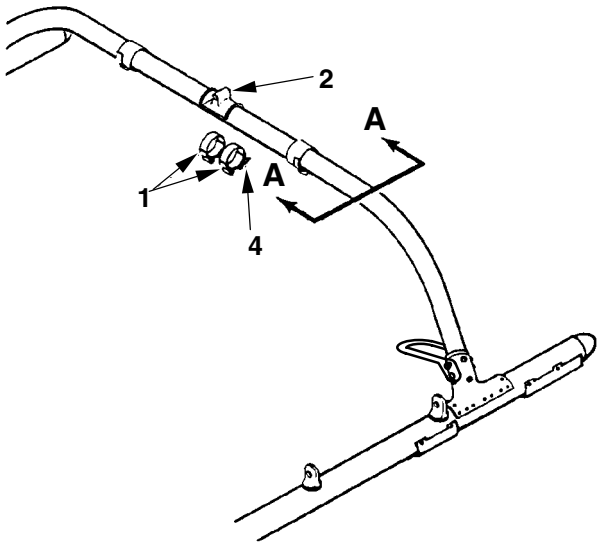
7. Install two clamps (1) on crosstube support (2).

8. Torque adjustment nuts (4) **50 INCH-POUNDS** within 30 minutes of adhesive application. Retorque clamps (1) **50 INCH-POUNDS** as required after adhesive has cured (24 hours minimum).

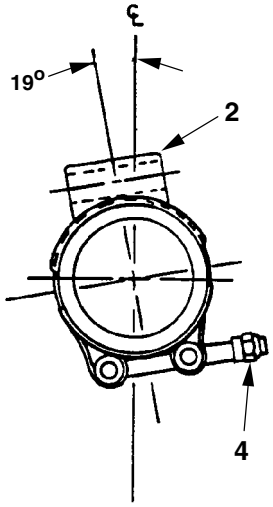


Sealing Compound

9. Apply bead of sealing compound (D184) around mating edge of support (2).



CROSSTUBE



SECTION A-A

NOTE: Crosstube centerline will be tilted 19 degrees aft when installed in landing gear

INSPECT

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3-1-39. AFT CROSSTUBE COMPONENTS — REMOVAL/INSTALLATION (CONT)

REMOVE NUTPLATE

10. Remove aft crosstube (Task 3-1-33).

11. Remove nutplate assembly (5) having damaged nutplate (6) by drilling out rivets (7). Refer to TM 1-1500-204-23.

12. Remove damaged nutplate (6) from nutplate assembly (5) by drilling out rivets (8). Refer to TM 1-1500-204-23.

INSTALL NUTPLATE

13. Install nutplate (6) on nutplate assembly (5) using two rivets (7). Refer to TM 1-1500-204-23.

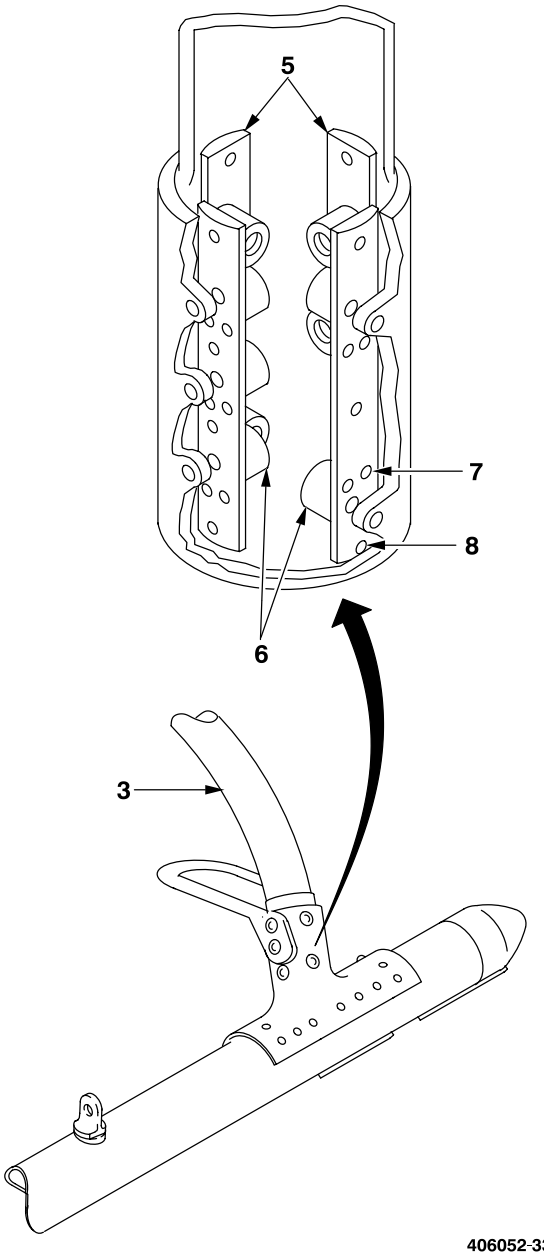
14. Install nutplate assembly (5) inside aft crosstube assembly (3) with rivets (8). Refer to TM 1-1500-204-23.

15. Install aft crosstube (Task 3-1-33).

INSPECT

FOLLOW-ON MAINTENANCE

Install aft crosstube support beam (Task 3-1-43).



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END OF TASK

3-1-40. AFT CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Protractor (B109)
Torque Wrench (B237)

Material:
Acid Swabbing Brush (D51)
Dynasolve 165 (D95)
Aliphatic Naphtha (D141)
Wiping Rags (D164)
Soap Cleaning Compound (D192)
Abrasive Mats (D1)
Scouring Pads (D147)
Chemical Conversion Coating (Alodine 1201) (D57)
Tack Rag (D209)
Adhesive (D14)
Sealing Compound (D184)
Rubber Gloves (D111)
Epoxy Primer Coating (D98)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer (2)
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23
TM 55-1500-345-23

Equipment Condition:
Aft Crosstube Support Beam Removed (Task 3-1-44)

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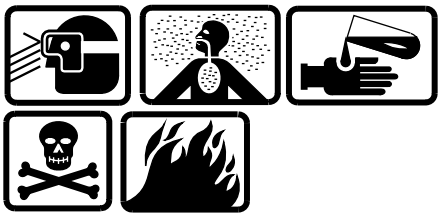
3-1-40. AFT CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

REMOVE CLAMPS



Dynasolve 165

1. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) to two clamps (1). Remove two clamps (1).

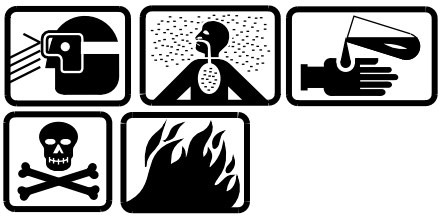
2. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) to two T-bolt clamps (2) to dissolve epoxy sealing compound. Remove two T-bolt clamps (2).

REMOVE SUPPORTS

3. Apply Dynasolve 165 (D95) with an acid swabbing brush (D51) around edge of crosstube supports (3 and 4) to dissolve epoxy sealing compound. Remove crosstube supports (3 and 4) from aft crosstube (5).

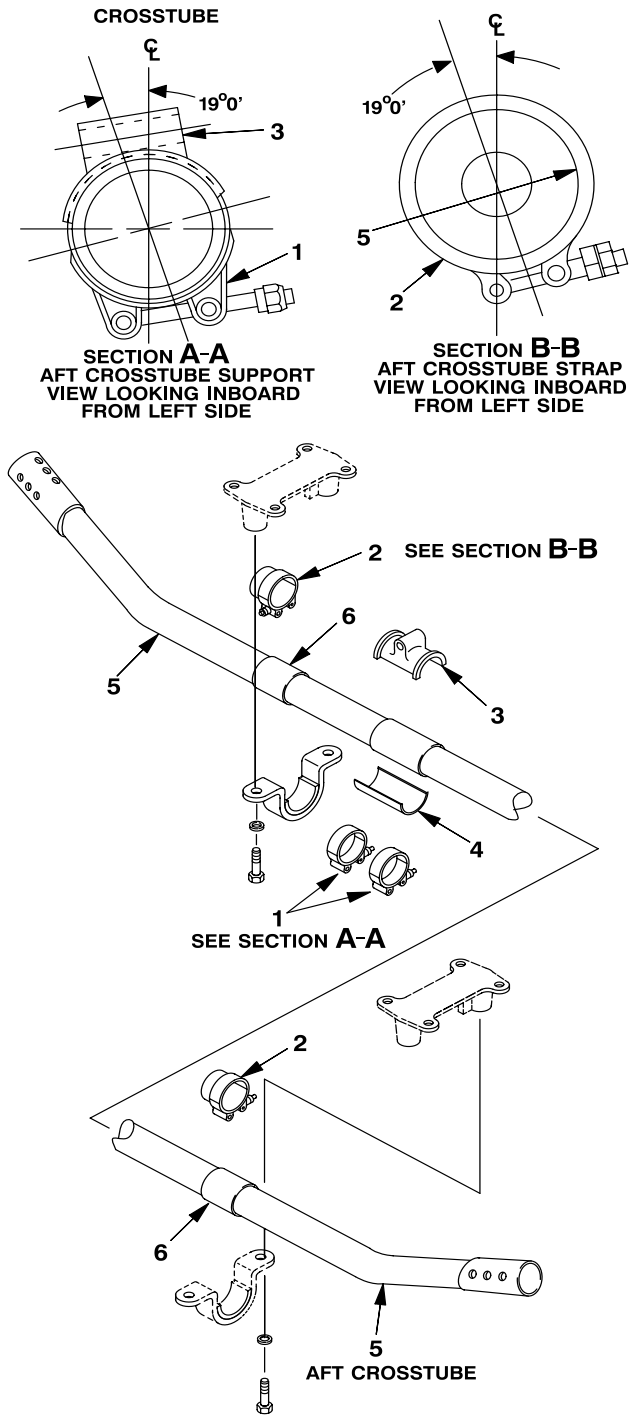
INSTALL SUPPORTS AND T-BOLT CLAMPS

4. Clean area of aft crosstube (6) where crosstube supports (3 and 4) and T-bolt clamps (2) mount as follows:



Naphtha/Naphthalene, TT-N-97

a. Clean surface with aliphatic naphtha (D141) using wiping rag (D164).



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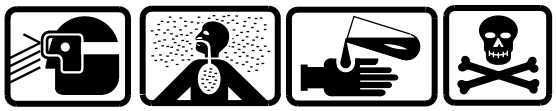
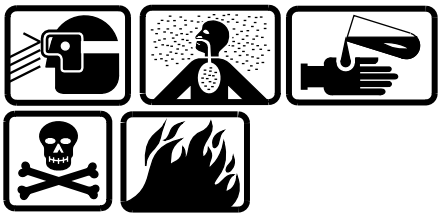
3-1-40. AFT CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)



Cleaning Compound

b. Clean with soap cleaning compound (D192), mixed 4 ounces per gallon in water, and abrasive mats (D1) or scouring pads (D147).



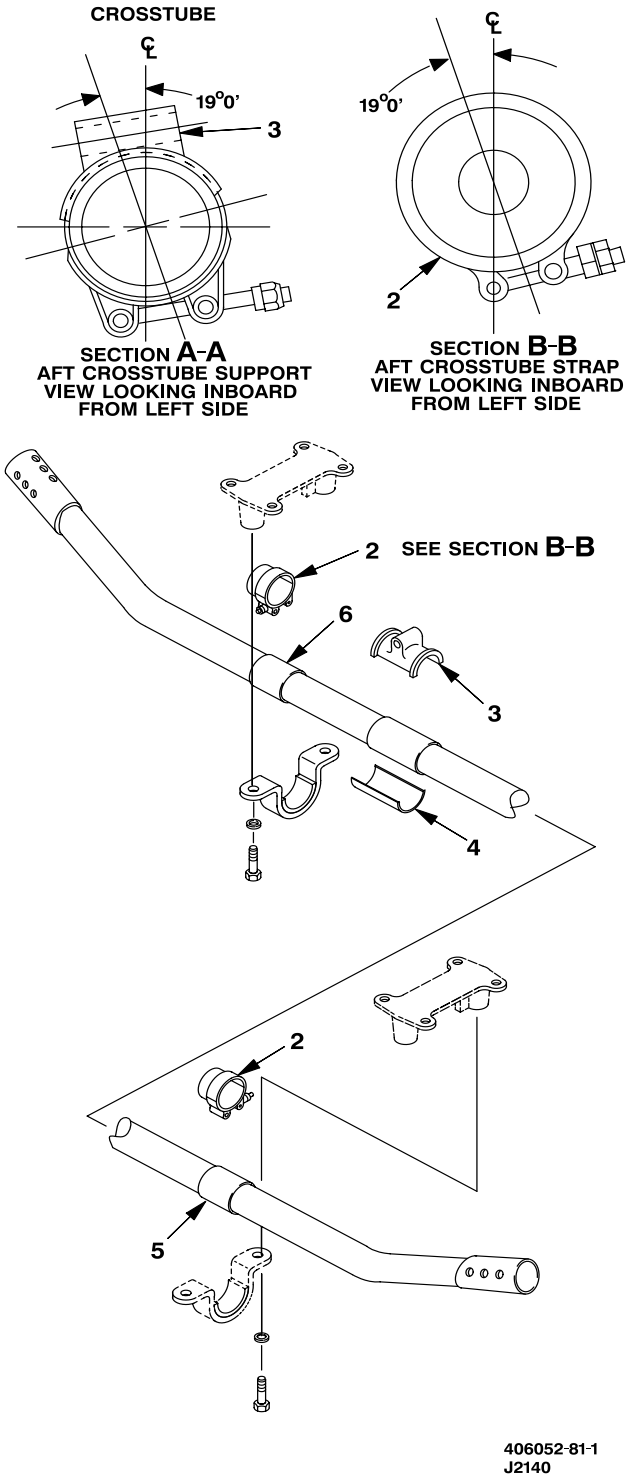
Chemical Conversion Materials

c. Brush Alodine 1201 (D57) on surface with acid swabbing brush (D51). Wipe with tack rag (D209).

Adhesive

5. Apply adhesive (D14) to support mounting area of crosstube support (3 and 4) and mounting area (6) where T-bolt clamps (2) mount.

6. Use a protractor (B109) to determine 19 degrees and install crosstube supports (3 and 4) and T-bolt clamps (2) in position shown in Sections A-A and B-B.



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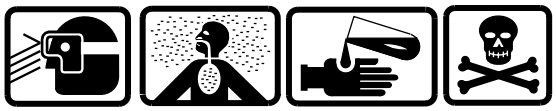
3-1-40. AFT CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

INSTALL CLAMPS



Adhesive

7. Apply adhesive (D14) in mounting area (6) of crosstube supports (3 and 4) and clamps (1) on aft crosstube (5).

8. Install two clamps (1) on crosstube supports (3 and 4) at angle shown in section A-A.

9. Tighten adjustment nuts (7) within 30 minutes of adhesive application. Retighten clamps (1) as required after adhesive has cured (24 hours minimum).

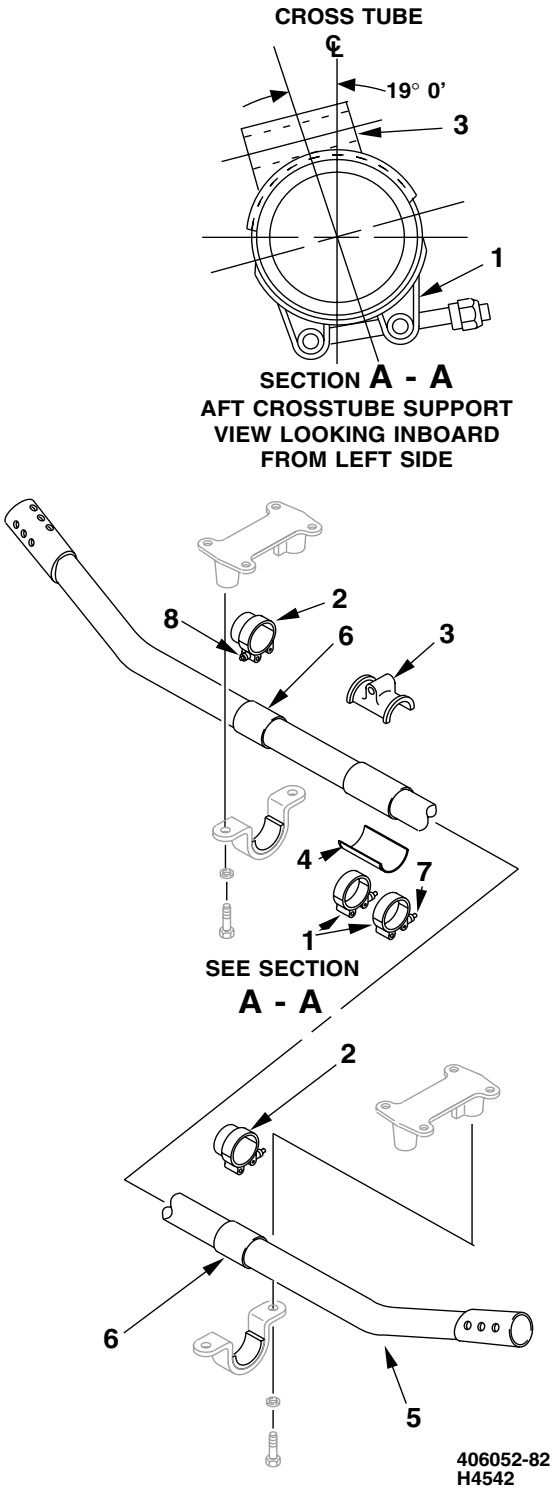
Sealing Compound

10. Apply bead of sealing compound (D184) around mating edge of supports (3 and 4) and T-bolt clamps (2).

11. Torque adjustment nuts (8) **50 INCH-POUNDS** within 30 minutes of sealing compound application. Retorque T-bolt clamps (2) **50 INCH-POUNDS** as required after sealing compound has cured (24 hours minimum).

12. Apply spray coat of epoxy primer coating (D98) to cleaned surface adjacent to crosstube supports (3 and 4) and mounting area (6) (TM 55-1500-345-23).

INSPECT



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3-1-40. AFT CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

REMOVE NUTPLATE

13. Remove nutplate assembly (9) by drilling out rivets (10) (TM 1-1500-204-23).

14. Remove nutplate (11) from nutplate assembly (9) by drilling out rivets (12).

INSTALL NUTPLATE

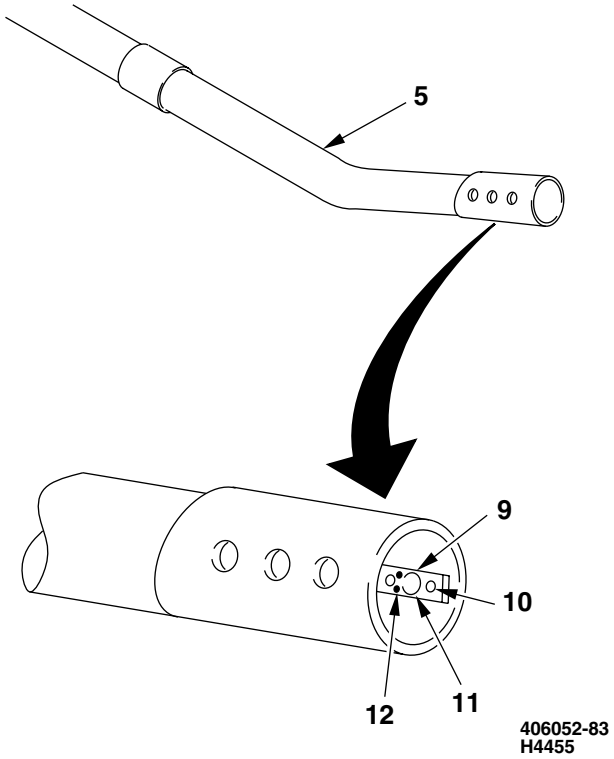
15. Install nutplate (11) on nutplate assembly (9) using two rivets (12) (TM 1-1500-204-23).

16. Install nutplate assembly (9) inside aft crosstube assembly (5) with rivets (10).

INSPECT

FOLLOW-ON MAINTENANCE

Install aft crosstube support beam (Task 3-1-44).



END OF TASK

3-1-41. AFT CROSSTUBE COMPONENTS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Acid Swabbing Brush (D51)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

Equipment Condition:
Aft Crosstube Support Beam Removed (Task 3-1-43)
Aft Crosstube Components Removed (Task 3-1-39)

CLEAN

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward crosstube is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

Drycleaning Solvent

1. Clean crosstube support surface with drycleaning solvent (D199).

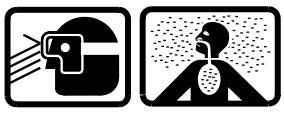
2. Dry crosstube support with a wiping rag (D164).

INSPECT

3. Inspect aft crosstube support to limits shown. If damage is beyond limits, replace aft crosstube support. See figure Crosstube Support — Damage Limits.

4. Inspect nutplates for damage. No damage allowed.

REPAIR



Sanding Operations

5. Polish out reparable damage using 400 grit sandpaper (D175).

6. Apply coat of epoxy primer (D98) followed by a coat of paint (D150) to repair area. Refer to TM 55-1500-345-23.

7. Replace damaged nutplates (Task 3-1-39).

INSPECT

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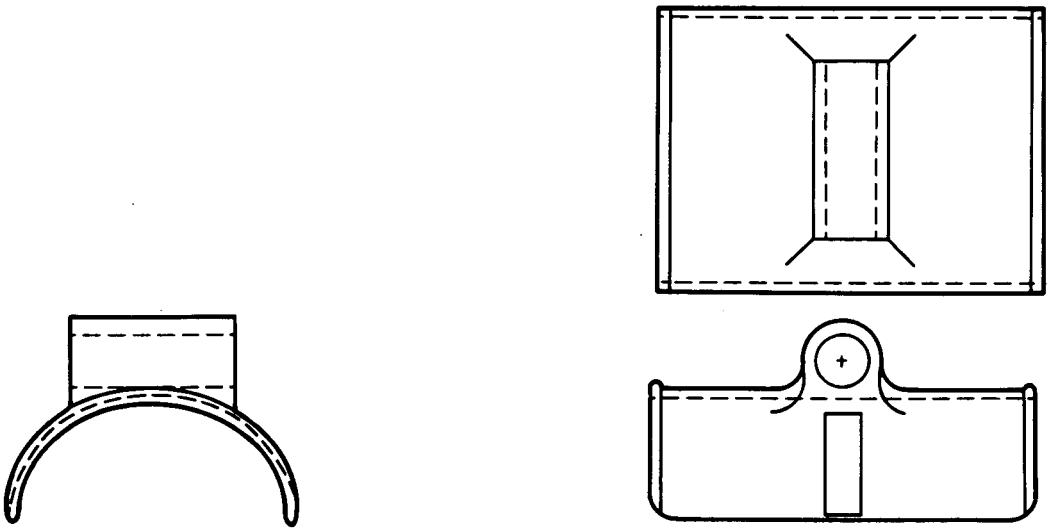

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.010 In. before and 0.020 in. after repair
CORROSION	0.010 In. before and 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.25 Sq. in.
NUMBER OF REPAIRS	Not critical
EDGE CHAMFER TO REMOVE DAMAGE	0.03 In.
BORE DAMAGE	0.002 In. x 1/4 circumference

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Crosstube Support — Damage Limits

END OF TASK

3-1-42. AFT CROSSTUBE SUPPORTS (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean upper and lower crosstube supports surface with drycleaning solvent (D199).

2. Dry upper and lower crosstube supports with a wiping rag (D164).

INSPECT

3. Inspect aft upper and lower crosstube supports to limits shown. If damage is beyond limits, replace aft upper or lower crosstube support. See figures Aft Upper Crosstube Support — Damage Limits and Aft Lower Crosstube Support — Damage Limits.

REPAIR

Sanding Operations

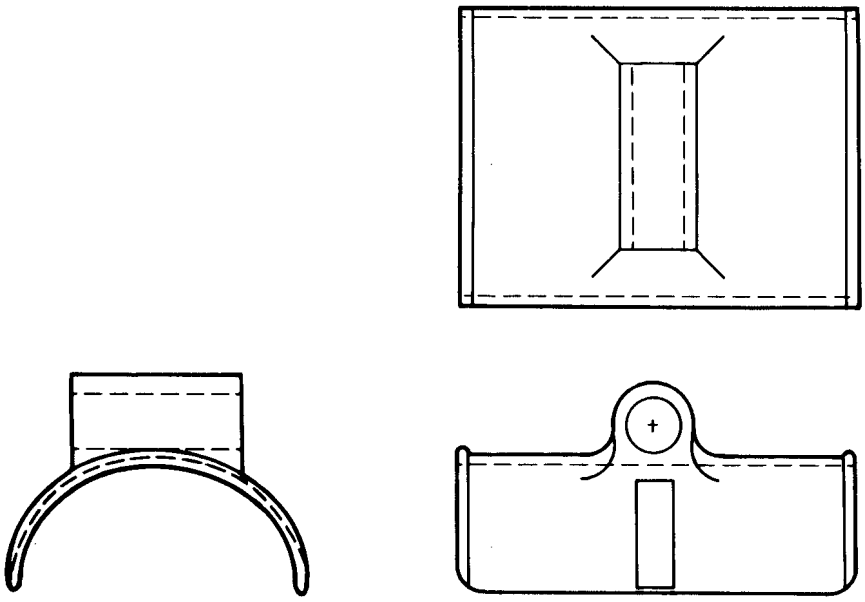
4. Polish out reparable damage using 400 grit sandpaper (D175).

5. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

INSPECT

GO TO NEXT PAGE

3-1-42. AFT CROSSTUBE SUPPORTS (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)



AFT UPPER CROSSTUBE SUPPORT

DAMAGE LOCATION SYMBOL

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 in. before repair 0.020 in. after repair
CORROSION:	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.50 sq. in.
MAXIMUM NUMBER OF REPAIRS	Three
EDGE CHAMFER	0.030 in. x 45 ^{o}
BORE DAMAGE	0.002 in. x 1/4 circumference

NOTE :

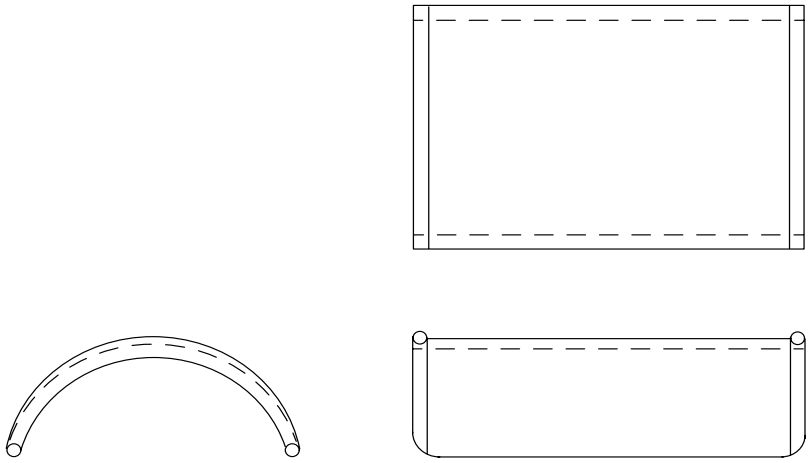
No cracks permitted

406060-515
H4369

Aft Upper Crosstube Support — Damage Limits

GO TO NEXT PAGE

3-1-42. AFT CROSSTUBE SUPPORTS (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)



AFT LOWER CROSSTUBE SUPPORT

	DAMAGE LOCATION SYMBOL
TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL	0.010 before repair 0.020 after repaIr
CORROSION	0.010 before repair 0.020 after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.25 sq. In.
NUMBER OF REPAIRS	Not crltlcal
EDGE CHAMFER	0.030 in. X 45°
BORE DAMAGE	0.002 in. X 1/4 circumference

NOTE:

No cracks permitted.

406060-593
J1449

Aft Lower Crosstube Support — Damage Limits

END OF TASK

3-1-43. AFT CROSSTUBE SUPPORT BEAM AND COMPONENTS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Torque Wrench (B237)

Material:
Sealing Compound (D184)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer (2)

References:
TM 1-1500-204-23

GO TO NEXT PAGE

3-1-43. AFT CROSSTUBE SUPPORT BEAM AND COMPONENTS — REMOVAL/INSTALLATION (CONT)

REMOVE SUPPORT BEAM

WARNING

FLIGHT SAFETY CRITICAL AIRCRAFT PART (FSCAP)

The external surface condition of the forward crosstube is critical to flight safety. FSCAPs shall be inspected per applicable inspection task.

1. Remove cotter pin (1) from center bolt (2) in support beam (3).

2. Remove nut (4) from centerbolt (2).

3. Remove washer (5), bolt (2) and support beam (3).

REMOVE BEARING CAP

4. Remove bearing caps (6) by drilling out two rivets (7) from each end of support beam (3). Refer to TM 1-1500-204-23.

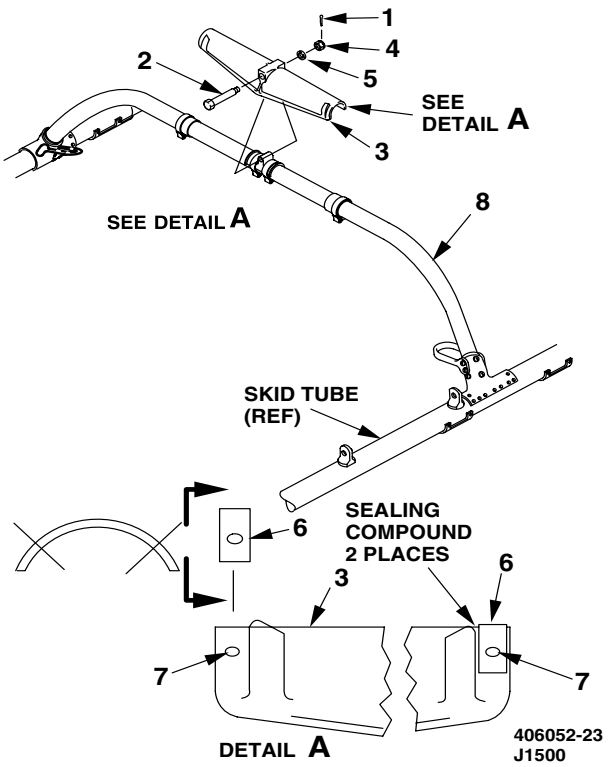
INSTALL BEARING CAP

5. Position bearing cap (6) on support beam (3) and match drill two holes as indicated.

6. Install bearing caps (6) using two rivets (7) at each end.

7. Flush both sides of rivets (7). Refer to TM 1-1500-204-23.

Sealing Compound



8. Apply bead of sealing compound (D184) along edges of bearing caps (6).

INSTALL SUPPORT BEAM

9. Place support beam (3) in position on aft crosstube (8).

10. Install center bolt (2), washer (5), and nut (4). Torque nut (4) **60 TO 85 INCH-POUNDS** and secure with cotter pin (1).

INSPECT

END OF TASK

3-1-44. AFT CROSSTUBE SUPPORT BEAM AND COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Torque Wrench (B237)

Material:
Sealing Compound (D184)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer

References:
TM 1-1500-204-23

GO TO NEXT PAGE

3-1-44. AFT CROSSTUBE SUPPORT BEAM AND COMPONENTS (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

REMOVE SUPPORT BEAM

1. Remove cotter pin (1) from center bolt (2) in support beam (3).

2. Remove nut (4) from center bolt (2).

3. Remove washer (5), center bolt (2), and support beam (3) from aft crosstube (8).

REMOVE BEARING CAP

4. Remove bearing caps (6) by drilling out two rivets (7) from each end of support beam (3) (TM 1-1500-204-23).

INSTALL BEARING CAP

5. Position bearing cap (6) on support beam (3) and match drill two holes as indicated.

6. Install bearing caps (6) using two flush mounting rivets (7) at each end (TM 1-1500-204-23).

7. Ensure rivets (7) installed in four places on support beam (3) are flush with surface per (TM 1-1500-204-23).

Sealing Compound

8. Apply bead of sealing compound (D184) along edges of bearing caps (6).

INSTALL SUPPORT BEAM

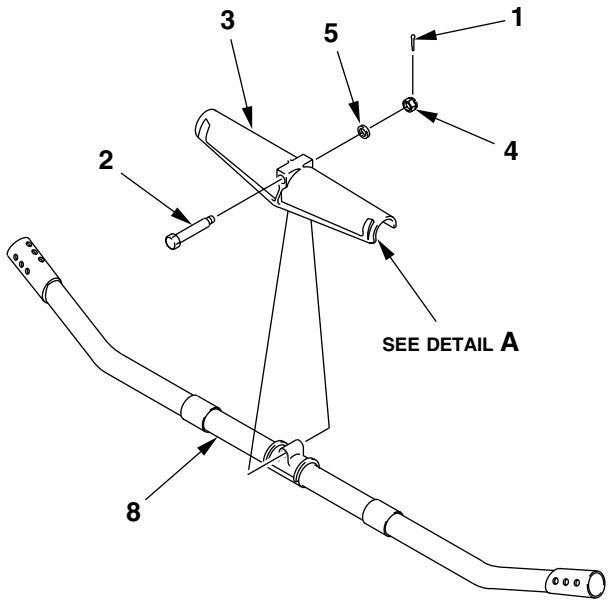
9. Place support beam (3) in position on aft crosstube (8).

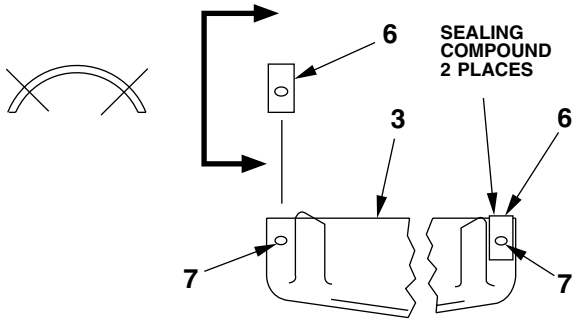
NOTE

Bolts shall be installed with head facing forward.

10. Install center bolt (2), washer (5), and nut (4). Torque nut (4) **60 TO 85 INCH-POUNDS** and secure with cotter pin (1).

INSPECT





DETAIL A

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H3806

END OF TASK

3-1-45. AFT CROSSTUBE SUPPORT BEAM COMPONENTS — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Epoxy Primer Coating (D98)
Drycleaning Solvent (D199)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rag (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean support beam surface with drycleaning solvent (D199).

2. Dry support beam with a wiping rag (D164).

INSPECT

3. Inspect support beam to limits shown. If damage is beyond limits, replace support beam (Task 3-1-43). See figure Aft Crosstube Support Beam Components — Damage Limits.

4. Inspect support beam bearing caps to limits shown. If damage is beyond limits, replace bearing caps (Task 3-1-43).

5. Inspect support beam bushings to limits shown. If damage is beyond limits, replace bushings (Task 3-1-47).

REPAIR

Sanding Operations

6. Polish out reparable damage using 400 grit sandpaper (D175).

7. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150). Refer to TM 55-1500-345-23.

INSPECT

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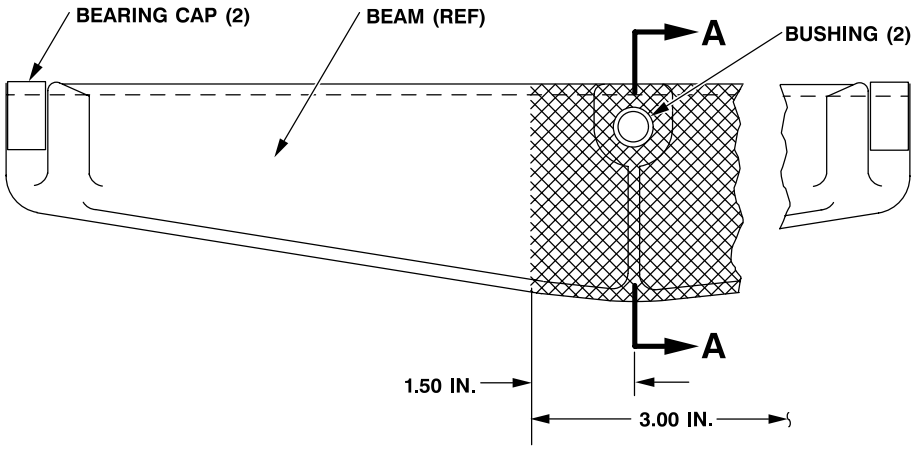
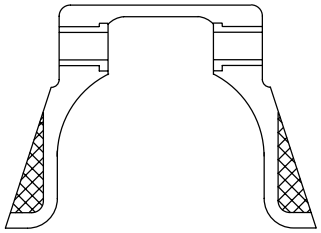
3-1-45. AFT CROSSTUBE SUPPORT BEAM COMPONENTS — CLEANING/INSPECTION/REPAIR (CONT)





SECTION **A-A**

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL	0.010 In. before and 0.020 in. after repair	0.010 In. before and 0.020 in. after repair
CORROSION	0.010 in. before and 0.020 in. after repair	0.010 in. before and 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.25 Sq. in.	0.50 Sq. in.
NUMBER OF REPAIRS	2	Not critical
BORE DAMAGE	0.002 in. x 1/4 circumference	

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J0440

Aft Crosstube Support Beam Components — Damage Limits

END OF TASK

3-1-46. AFT CROSSTUBE SUPPORT BEAM AND COMPONENTS (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)
Sealing Compound (D184)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer (2)

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean support beam surface with drycleaning solvent (D199).

2. Dry support beam with a wiping rag (D164).

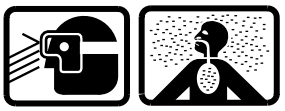
INSPECT

3. Inspect support beam to limits shown. If damage is beyond limits, replace support beam (Task 3-1-44). See figure Aft Crosstube Support Beam Assembly — Damage Limits.

4. Inspect support beam bearing caps to limits shown. If damage is beyond limits, replace bearing caps (Task 3-1-44).

5. Inspect support beam bushings to limits shown. If damage is beyond limits, replace bushings (Task 3-1-47).

REPAIR



Sanding Operations

6. Polish out reparable damage using 400 grit sandpaper (D175).

7. Apply coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

INSPECT

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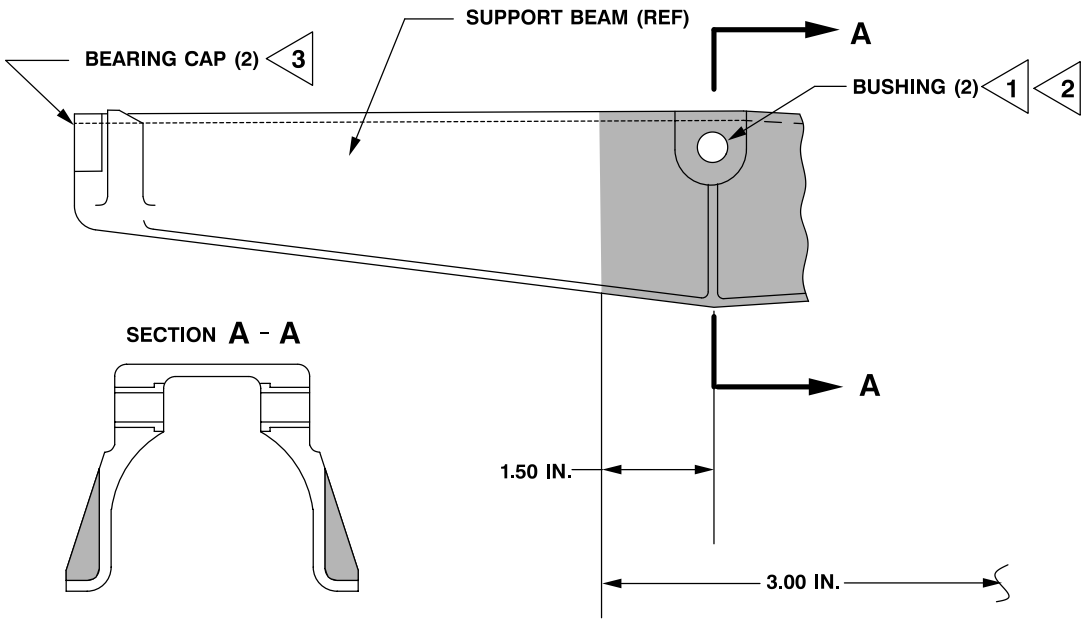
3-1-46. AFT CROSSTUBE SUPPORT BEAM AND COMPONENTS (RAPID DEPLOYMENT) — CLEANING/INSPECTION/REPAIR (CONT)



AFT CROSSTUBE SUPPORT BEAM ASSEMBLY

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL:	0.010 in. before repair 0.020 in. after repair	0.010 in. before repair 0.020 in. after repair
CORROSION:	0.010 In. before repaIr 0.020 in. after repair	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.25 sq. in.	0.50 sq. in.
MAXIMUM NUMBER OF REPAIRS	2	Not critical
BORE DAMAGE	0.002 in. x 1/4 circumference	

NOTE:

1. Install bushing with wet epoxy primer coating.
2. Omit primer in holes.
3. Apply a bead of sealing compound (D184) around periphery of bearing cap.
4. No cracks permitted.

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J2140

Aft Crosstube Support Beam Assembly — Damage Limits

END OF TASK

3-1-47. AFT CROSSTUBE SUPPORT BEAM BUSHING (AVIM) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airmobile Machine Shop Shop Set (B140)

Material:
Epoxy Primer Coating (D98)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23
TM 1-1500-204-23

GO TO NEXT PAGE

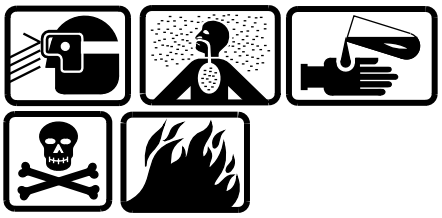
3-1-47. AFT CROSSTUBE SUPPORT BEAM BUSHING (AVIM) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Place support beam (1) on arbor press and remove two bushings (2).

INSPECT

INSTALL



Epoxy Primer Coating

2. Apply coat of epoxy primer coating (D98) to bushings (2) (TM 55-1500-345-23).

3. Place support beam (1) on arbor press and position bushing (2) over hole in beam (1).

4. Use suitable metal block and drift pin to press bushing (2) in place.

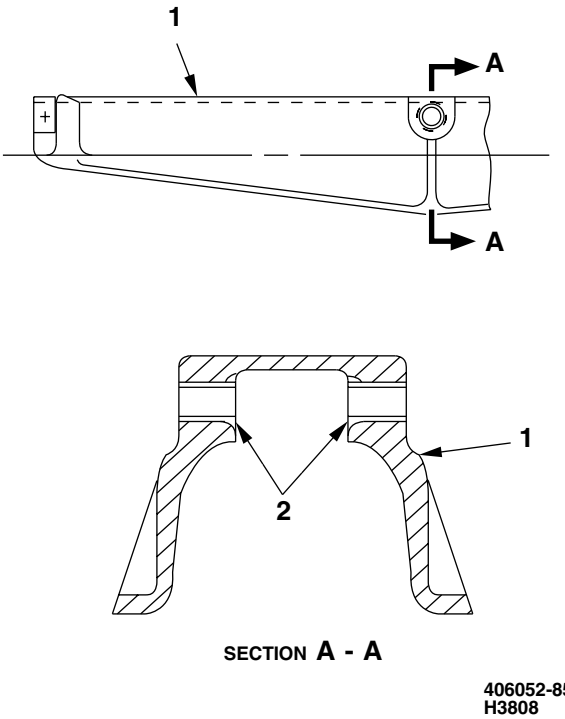
5. Turn beam over (installed bushing side down).

6. Place support beam (1) on arbor press and position bushing (2) over hole in beam (1).

7. Use suitable metal block and drift pin to press bushing (2) in place.

8. Line ream bushings (2) with **0.437 inch** reamer.

INSPECT



END OF TASK

3-1-48. TOW FITTINGS — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Sealing Compound (D184)
Zinc Chromate Primer (D99)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

REMOVE

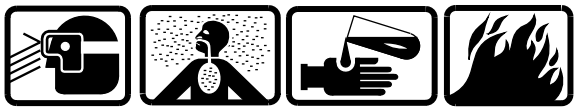
1. Remove screw (1), steel washer (2), aluminum washer (3), and tow fitting (4) from skid tube (5).

INSTALL

Zinc Chromate Primer

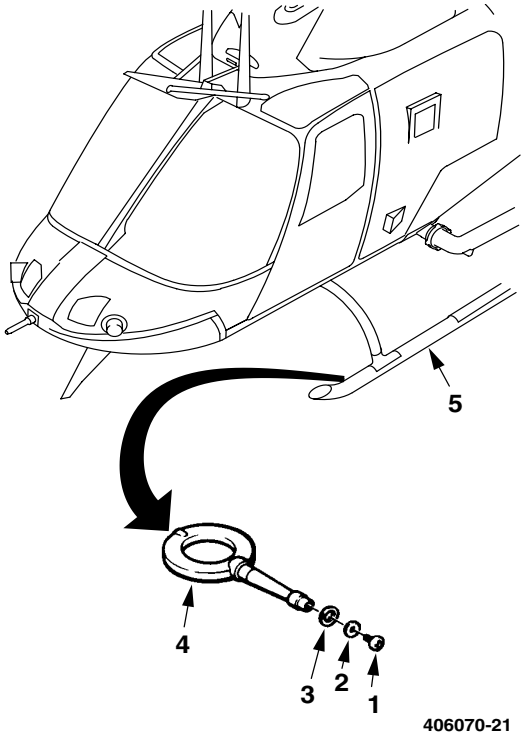
2. Install tow fitting (4) in skid tube (5). Install with wet zinc chromate primer (D99).

3. Secure tow fitting (4) with aluminum washer (3), steel washer (2), and screw (1).



Sealing Compound

4. Apply a bead of sealing compound (D184) around tow fitting (4) at juncture with skid tube (5).



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J0440

END OF TASK

3-1-49. TOW FITTINGS (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Sealing Compound (D184)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

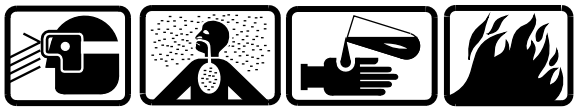
REMOVE

1. Remove screw (1), washers (2), and tow fitting (3) from landing gear (4) (four places).

INSTALL

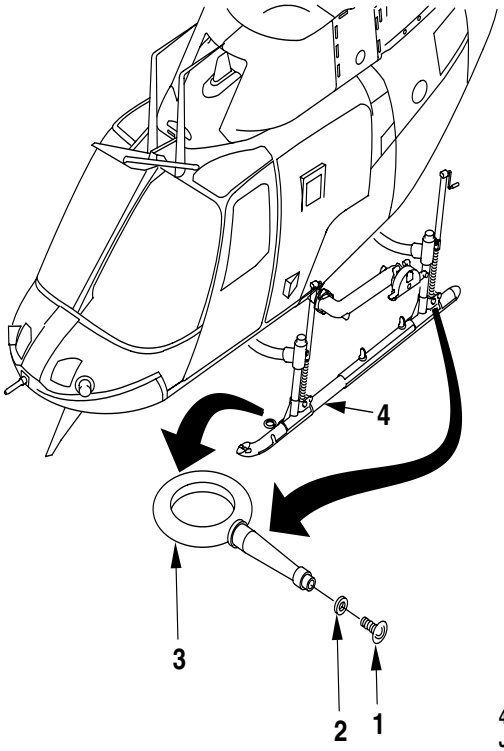
2. Install tow fitting (3) in mount holes in landing gear (4) (four places).

3. Secure tow fitting (3) with maximum of four washers (2) and screw (1) (four places).



Sealing Compound

4. Apply a bead of sealing compound (D184) around tow fitting (3) at juncture with landing gear.



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J1500

END OF TASK

3-1-50. TOW FITTINGS (TYPICAL) — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Wiping Rags (D164)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer

References:
TM 1-1520-266-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

CLEAN

Drycleaning Solvent

1. Clean tow fittings (1) with drycleaning solvent (D199) and wiping rags (D164).

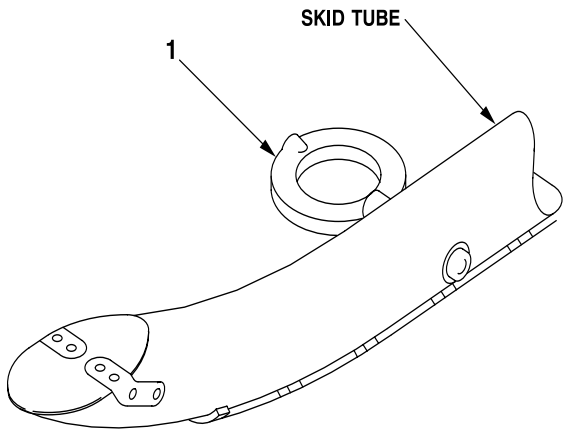
2. Dry with clean wiping rags (D164).

INSPECT

3. Inspect for loose, bent, broken, cracked, or scratched tow fittings. If crack in tow fitting is suspected perform magnetic particle inspection and eddy current inspection (TM 1-1520-266-23).

REPAIR

4. Replace unserviceable tow fittings (Task 3-1-48).



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J2673

END OF TASK

3-1-51. LEG AND KNUCKLE ASSEMBLY (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Airframe Repairer Tool Kit (B176)
Plastic Scraper (B123)
Torque Wrench (B239)

Material:
Sealant (D179)
Sealing Compound (D184)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 1-1500-204-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)
MMS Hoist Ball Removed (Task 3-1-53)

GO TO NEXT PAGE

3-1-51. LEG AND KNUCKLE ASSEMBLY (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove sealant with plastic scraper (B123).

Drilling Operations

2. Remove rivets (1) that secure saddle (2) to landing gear skid tube (3) (TM 1-1500-204-23).

3. Remove 12 bolts (4) and 12 washers (5) that secure knuckle assembly (6) to crosstube (7).

4. Slide knuckle assembly (6) with leg (8) and saddle (2) off crosstube (7).

INSTALL

Sealing Compound

5. Seal faying surfaces of crosstube (7) and knuckle assembly (6) with sealant (D179).

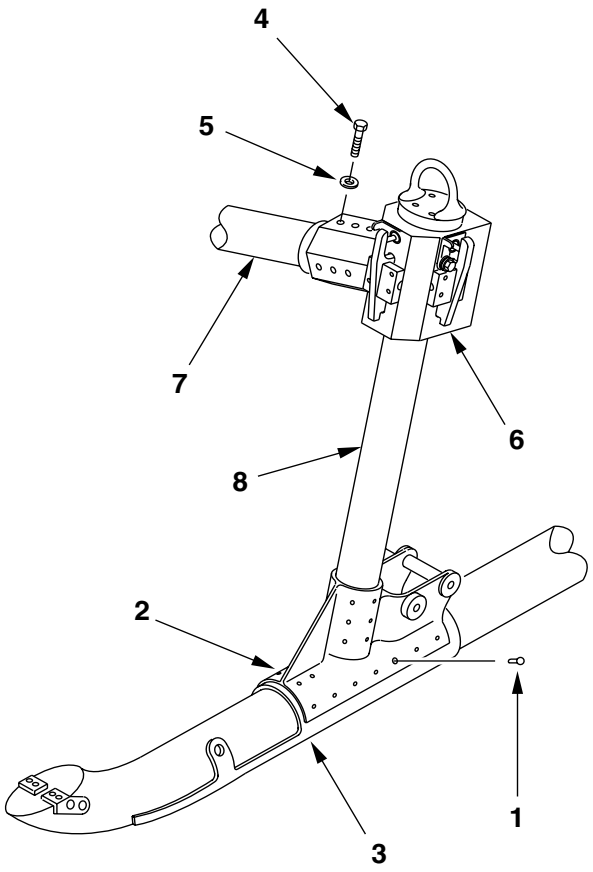
6. Slide knuckle assembly (6) with leg (8) and saddle (2) onto crosstube (7).

7. Install 12 bolts (4) with 12 washers (5) to secure knuckle assembly (6) to crosstube (7). Torque bolts (4) **100 TO 140 INCH-POUNDS**.

Sealing Compound

8. Coat mating surfaces of saddle (2) and skid tube (3) with sealing compound (D184).

9. Install rivets (1) to secure saddle (2) to landing gear skid tube (3) (TM 1-1500-204-23).



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H3808

INSPECT

FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).

Install MMS hoist ball (Task 3-1-53).

END OF TASK

3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)
Abrasive Pad (D1)
Lubricant (D135)
Alcoholic Phosphoric Acid Solution (D37)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

GO TO NEXT PAGE

3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)

CLEAN

Drycleaning Solvent

1. Clean leg, saddle, and knuckle assembly surfaces with drycleaning solvent (D199).

2. Dry leg, saddle, and knuckle assemblies with a wiping rag (D164).

INSPECT

3. Inspect leg, saddle, and knuckle assemblies for loose, damaged, or missing attachment bolts, pins, or rivets; distorted, broken, or cracked welds. See appropriate figure.

4. Inspect leg, saddle, knuckle assemblies block, latch, bearings, hook, caps, retainers, and fittings to limits shown. If damage is beyond limits, replace leg/knuckle assembly (Task 3-1-51). See appropriate figure.

REPAIR

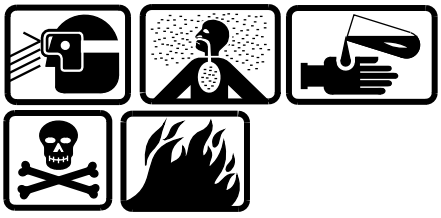
Sanding Operations

5. Remove any rust from leg with abrasive pad (D1).

6. Polish out reparable damage using 400 grit sandpaper (D175).

Corrosion Removing and Metal Conditioning Compound

7. Apply alcoholic phosphoric acid solution (D37) to repaired areas of leg only.



Lubricant

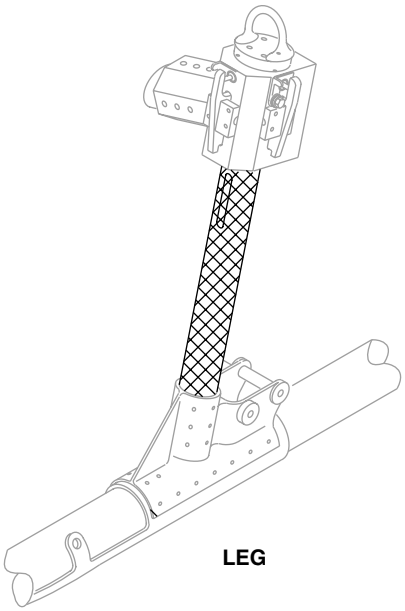
8. Apply lubricant (D135) to repaired areas of leg only.

9. Apply coat of epoxy primer coating (D98) to repaired areas of saddle and knuckle assemblies followed by coat of paint (D150) (TM 55-1500-345-23).

INSPECT

GO TO NEXT PAGE

3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



LEG

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL  MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.020 In. before repair 0.030 in. after repair
CORROSION:	0.020 in. before repair 0.030 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	1.0 sq. in.

NOTE:

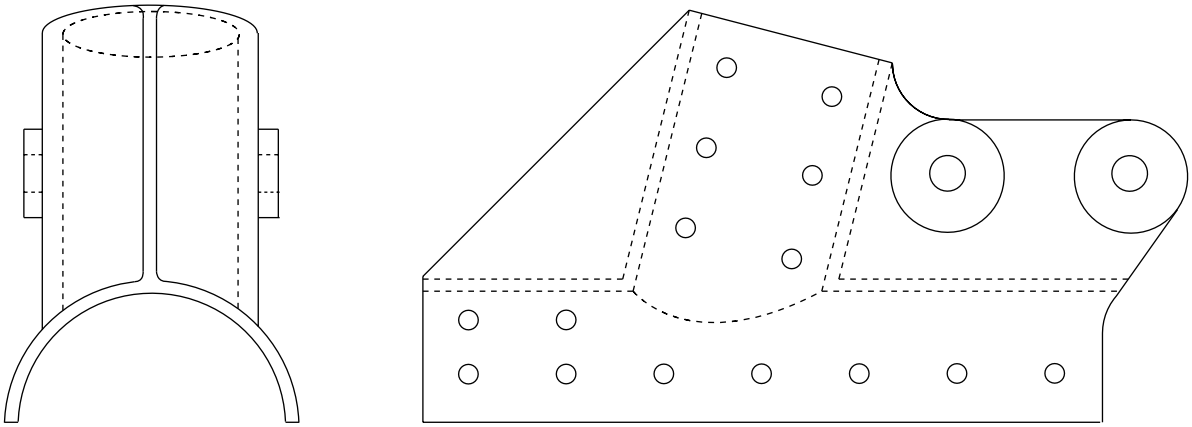
No cracks permitted.

406052-92
H4370

Rapid Deployment Leg — Damage Limits

GO TO NEXT PAGE

3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



SADDLE

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 In. before repair 0.020 in. after repair
CORROSION:	0.010 In. before repair 0.020 in after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.25 Sq. in.
MAXIMUM NUMBER OF REPAIRS	Not critical
EDGE CHAMFER	0.030 In. x 45°
BORE DAMAGE	0.002 In. x 1/4 circumference

NOTE:

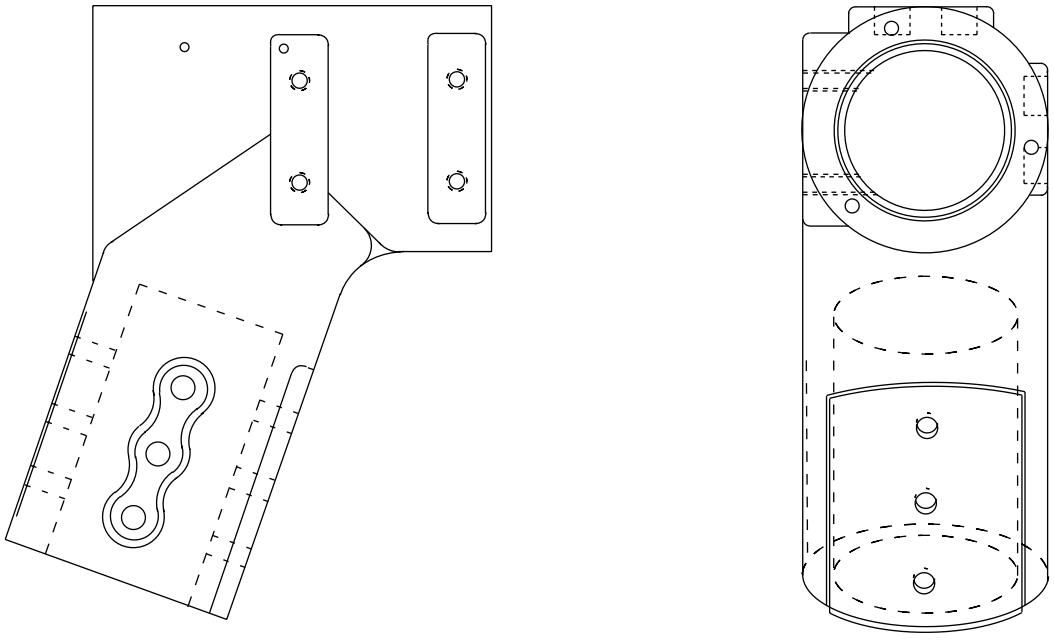
No cracks permitted.

406052-93
H4674

Rapid Deployment Saddle — Damage Limits

GO TO NEXT PAGE

3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



KNUCKLE ASSEMBLY

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.006 in. max (1)
CORROSION:	0.003 in. before repair 0.006 in. after repair max (1)
MAXIMUM LENGTH OF DAMAGE	0.30 in.
MAXIMUM AREA FULL DEPTH REPAIR	0.10 sq. in.
MAXIMUM NUMBER OF REPAIRS	Two per surface
EDGE CHAMFER	0.030 in. x 45°
BORE DAMAGE	0.001 in. x 1/4 circumference

NOTE:

(1) Limits are wthout re-shot peening.

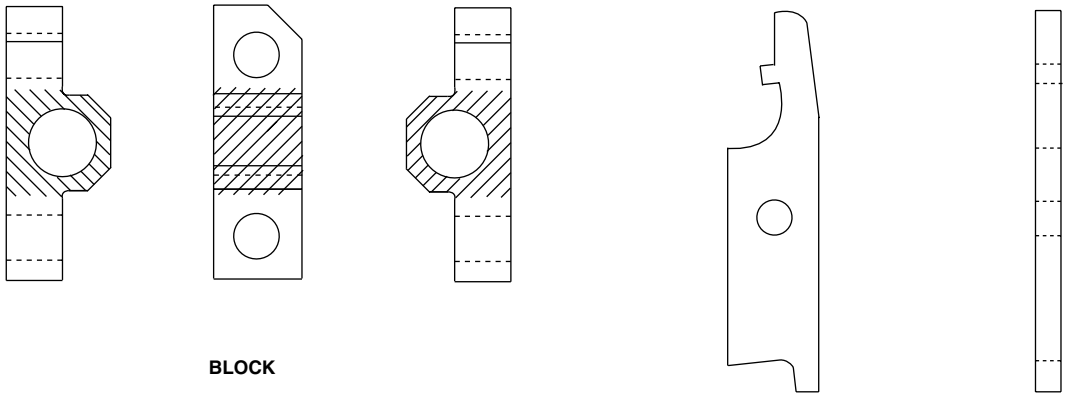
2. No cracks permitted.

406052-95
H4370

Rapid Deployment Knuckle Assembly — Damage Limits

GO TO NEXT PAGE

3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



BLOCK

LATCH

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL:	0.010 in.	0.050 In.
CORROSION:	0.010 In.	0.050 In.
MAXIMUM LENGTH OF DAMAGE	0.030 In.	
MAXIMUM AREA FULL DEPTH REPAIR	0.25 Sq. in.	50% Surface area
MAXIMUM NUMBER OF REPAIRS	One per surface	
EDGE CHAMFER	0.020 In. x 45°	0.030 In. x 45°
LUG BORE	0.002 In. x 1/4 circumference	
MOUNTING BORE	0.005 In. x 1/4 circumference	

NOTE:

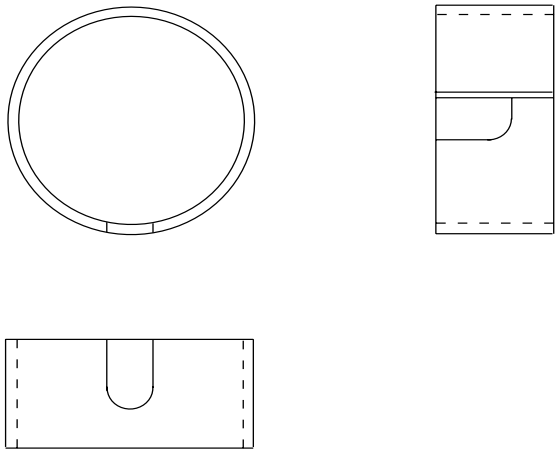
No cracks permitted.

406052-94
H4370

Rapid Deployment Block and Latch — Damage Limits

GO TO NEXT PAGE

3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



BEARING

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 in. before repair 0.020 in. after repair
CORROSION:	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.25 sq. in.
MAXIMUM NUMBER OF REPAIRS	One per surface
EDGE CHAMFER	0.030 in. x 45 ^{o}
BORE DAMAGE	0.002 in. x 1/4 circumference

406052-104
H4370

Rapid Deployment Bearing — Damage Limits

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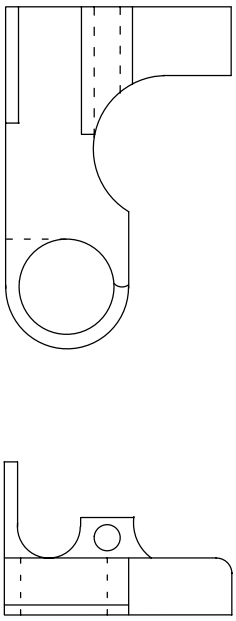
3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



HOOK

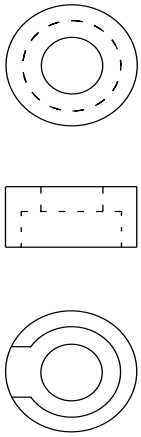
TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 in. before repair 0.020 in. after repair
CORROSION:	0.010 in. before repair 0.020 In. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.25 sq. in.
MAXIMUM NUMBER OF REPAIRS	One per surface
EDGE CHAMFER	0.030 in. x 45°
BORE DAMAGE	0.002 In. x 1/4 clrcumference

406052-105
J2140

Rapid Deployment Hook — Damage Limits

GO TO NEXT PAGE

3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



CAP

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 in. before repair 0.020 in. after repair
CORROSION:	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.25 sq. in.
MAXIMUM NUMBER OF REPAIRS	One per surface
EDGE CHAMFER	0.030 in. x 45 ^{o}
BORE DAMAGE	0.002 in. x 1/4 circumference

406052-106
H4370

Rapid Deployment Cap — Damage Limits

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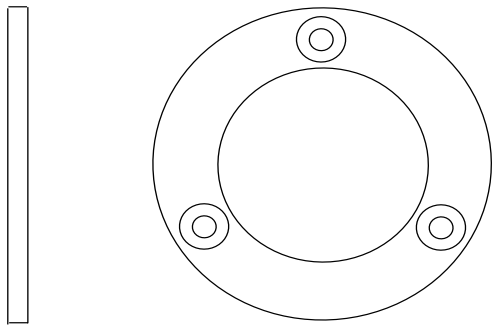
3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



RETAINER

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL ▭ MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 in. before repair 0.020 in. after repair
CORROSION:	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.25 sq. in.
MAXIMUM NUMBER OF REPAIRS	One per surface
EDGE CHAMFER	0.030 in. x 45 ^{o}
BORE DAMAGE	0.002 in. x 1/4 circumference

406052-107
H4370

Rapid Deployment Retainer — Damage Limits

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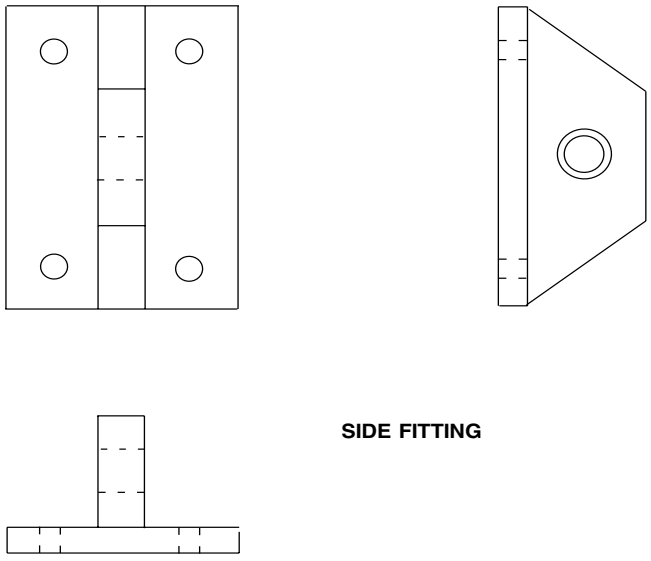
3-1-52. LEG AND KNUCKLE ASSEMBLY COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



SIDE FITTING

TYPE OF DAMAGE	DAMAGE LOCATION SYMBOL MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 in. before repair 0.020 in. after repair
CORROSION:	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.25 sq. in.
MAXIMUM NUMBER OF REPAIRS	One per surface
EDGE CHAMFER	0.030 in. x 45 ^{o}
BORE DAMAGE	0.002 in. x 1/4 circumference

406052-108
H4370

Rapid Deployment Side Fitting — Damage Limits

END OF TASK

3-1-53. MMS PLATFORM BALL AND HOIST BALL (RAPID DEPLOYMENT) — REMOVAL/ INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)

Material:
Sealing Compound (D184)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

REMOVE

1. Remove six screws (1) securing platform ball (2) through skid tube (3) into insert (4).

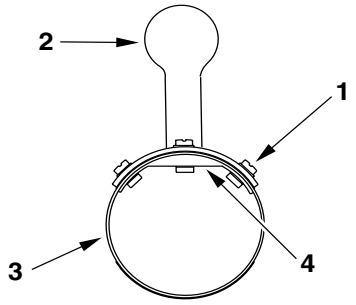
2. Trim sealing compound from faying surfaces of platform ball (2) and skid tube (3) using a plastic scraper (B123).

3. Remove platform ball (2) from skid tube (3).

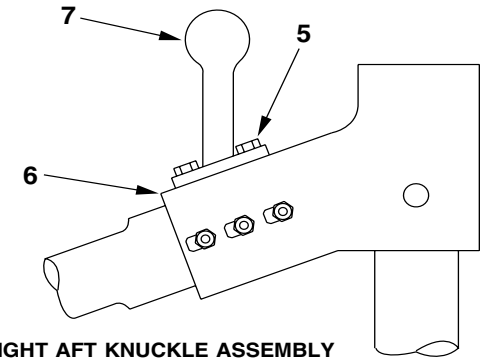
4. Remove two bolts (5) from knuckle assembly (6).

5. Trim sealing compound from faying surfaces of MMS hoist ball (7) and right aft landing gear knuckle assembly (6).

6. Remove MMS hoist ball (7) from right aft landing gear knuckle assembly (6).



RIGHT SKID TUBE



RIGHT AFT KNUCKLE ASSEMBLY

406052-76
H4370

INSTALL


Sealing Compound

7. Coat mating surfaces of platform ball (2) and skid tube (3) with sealing compound (D184).

8. Place platform ball (2) on skid tube (3), align with nutplate holes in insert (4), and install six screws (1).


Sealing Compound

9. Coat mating surfaces of MMS hoist ball (7) and right aft landing gear knuckle assembly (6) with sealing compound (D184).

10. Install MMS hoist ball (7) in right aft landing gear knuckle assembly (6) with two bolts (5).

INSPECT

END OF TASK

3-1-54. MMS PLATFORM BALL AND MMS HOIST BALL (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)
General Mechanic Tool Kit (B178)

Material:
Drycleaning Solvent (D199)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

CLEAN

Drycleaning Solvent

1. Clean MMS platform ball and hoist ball surface with drycleaning solvent (D199).

2. Dry MMS platform ball and hoist ball with wiping rag (D164).

INSPECT

3. Inspect the MMS platform ball and hoist ball for damaged fastener holes and cracks or damaged areas. See figure MMS Hoist Ball/MMS Platform Ball —Damage Limits.

4. Inspect MMS platform ball and hoist ball to limits shown. If damage is beyond limits, replace MMS platform ball or hoist ball (Task 3-1-53).

REPAIR

Sanding Operations

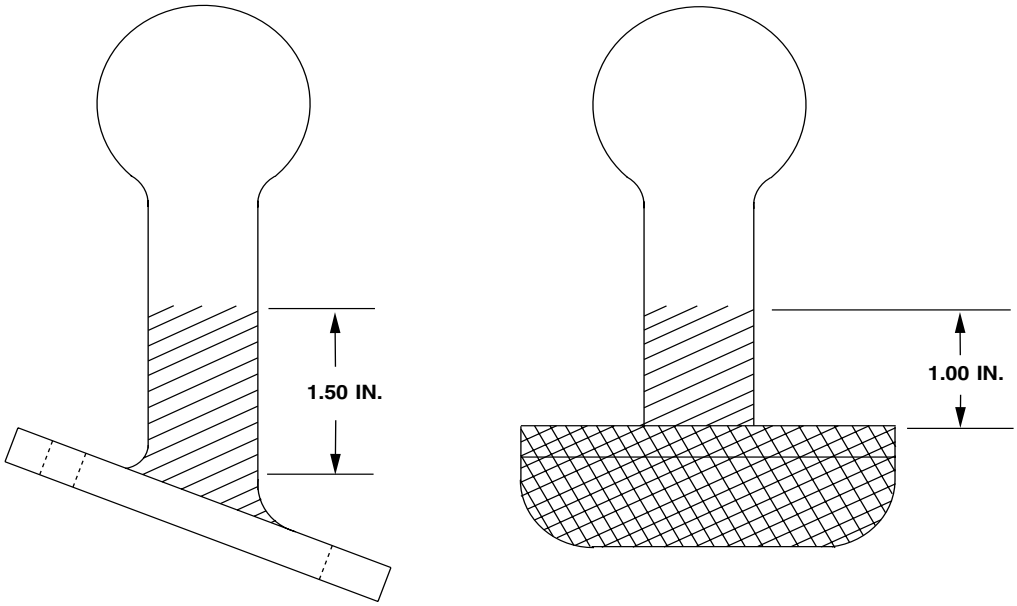
5. Polish out reparable damage using 400 grit sandpaper (D175).

6. Apply a coat of epoxy primer coating (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

INSPECT

GO TO NEXT PAGE

3-1-54. MMS PLATFORM BALL AND MMS HOIST BALL (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)



MMS HOIST BALL

MMS PLATFORM BALL

DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH		
MECHANICAL:	0.030 in.	0.050 in.	0.100 in.
CORROSION:	0.015 in. before repair 0.030 in. after repair	0.025 in. after repair 0.050 in. after repair	0.050 in. before repair 0.100 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.500 sq. in.	1/2 circumference x 0.200 in.	
EDGE CHAMFER	0.040 in. x 45	NA	NA

NOTE:

No cracks permitted.

406052-8
H4370

MMS Hoist Ball/MMS Platform Ball — Damage Limits

END OF TASK

3-1-55. TIEDOWN FITTING (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B237)

Material:
Lockwire (D132)
Anaerobic Sealing Compound (D170)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

Equipment Condition:
Helicopter Safed (Task 1-6-7)

GO TO NEXT PAGE

3-1-55. TIEDOWN FITTING (RAPID DEPLOYMENT) — REMOVAL/INSTALLATION (CONT)

REMOVE

1. Remove lockwire securing bolts (1).

2. Remove four bolts (1) and four washers (2) securing tiedown fitting (3) to leg assembly (4).

3. Remove tiedown fitting (3) from leg assembly (4).

INSTALL

4. Place tiedown fitting (3) on leg assembly (4).

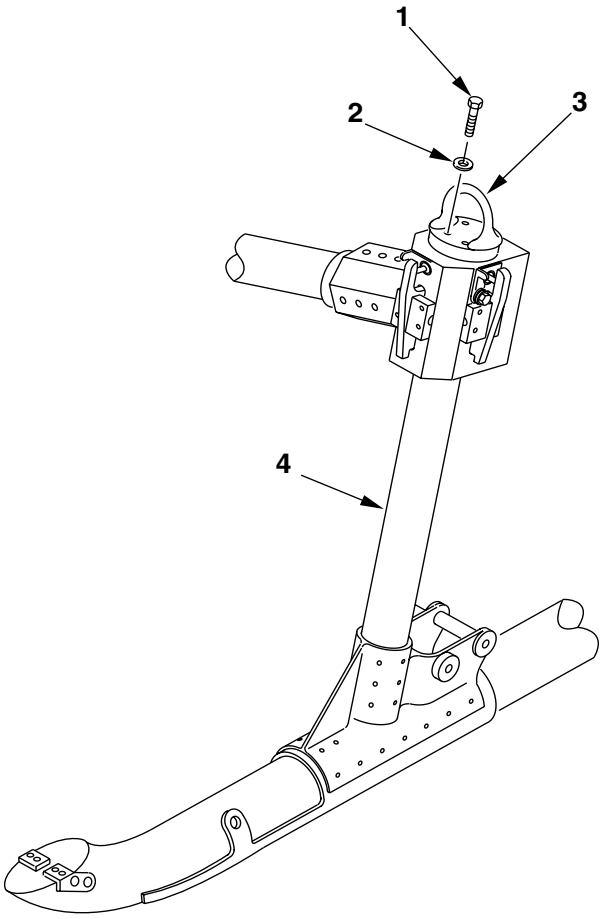
Sealing Compound

5. Coat bolts (1) with anaerobic sealing compound (D170).

6. Install four washers (2) and four bolts (1).

7. Secure four bolts (1) together with lockwire (D132). Torque bolts (1) **50 TO 70 INCH-POUNDS**.

INSPECT



406052-110
H4456

END OF TASK

3-1-56. LANDING GEAR KNUCKLE ASSEMBLY (TYPICAL) (RAPID DEPLOYMENT) (AVIM) — DISASSEMBLY/ASSEMBLY

This task covers: Disassembly/Assembly (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Torque Wrench (B235)
Torque Wrench (B236)
Goggles (B55)

Material:
Lockwire (D132)
Anaerobic Sealing Compound (D170)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

GO TO NEXT PAGE

3-1-56. LANDING GEAR KNUCKLE ASSEMBLY (TYPICAL) (RAPID DEPLOYMENT) (AVIM) — DISASSEMBLY/ASSEMBLY (CONT)

DISASSEMBLE

1. Remove one screw (1) and two screws (2) and remove retainer (3) from knuckle assembly (4).

2. Remove excluder (5) and bearing (6) from knuckle assembly (4).

3. Remove three screws (7) and retainer (8) from knuckle assembly (4).

4. Remove excluder (9) and bearing (10) from knuckle assembly (4).

WARNING

To prevent injury to personnel, when disassembling any component under spring tension, extreme caution shall be exercised. Approved goggles shall be worn.

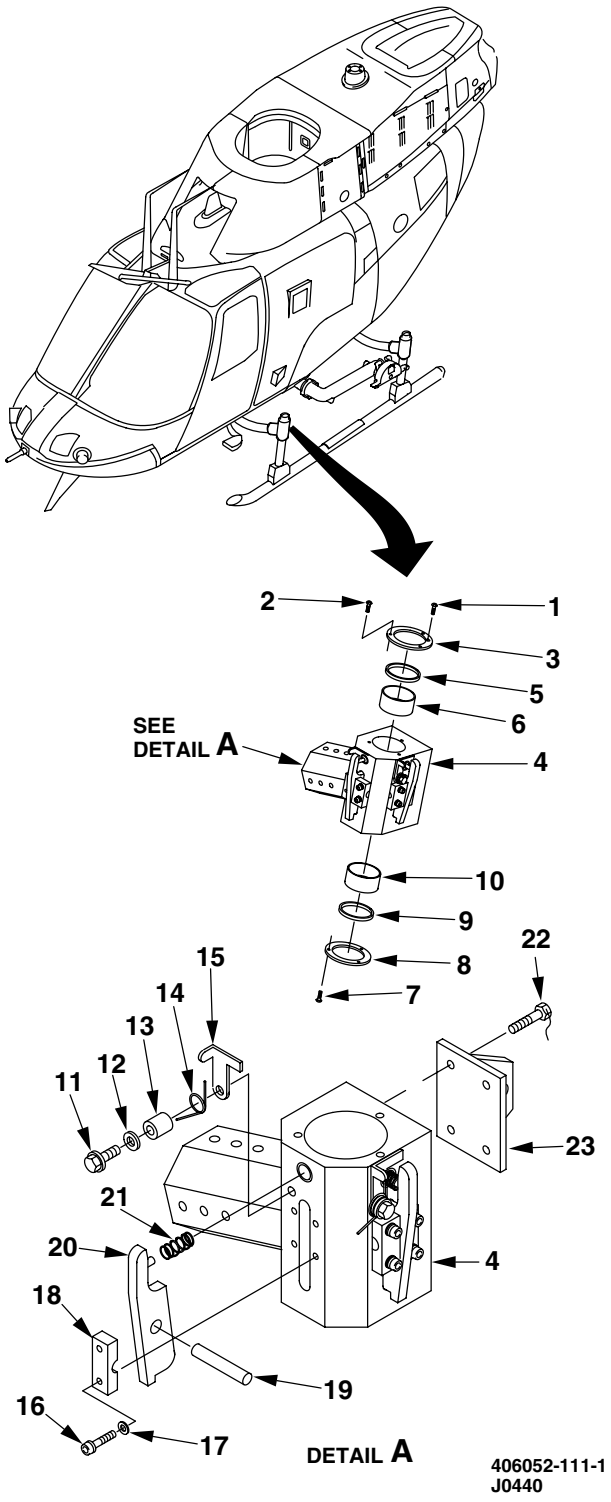
5. Remove shoulder bolt (11), washer (12), cap (13), spring (14), and hook (15) from knuckle assembly (4).

6. Remove four bolts (16) and four washers (17) from two blocks (18).

7. Remove two blocks (18), pin (19), latch (20), and spring (21) from knuckle assembly (4).

8. Remove two blocks (18) from pin (19) and remove latch (20) from pin (19).

9. Remove lockwire securing bolts (22). Remove four bolts (22) and fitting assembly (23) from knuckle assembly (4).



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3-1-56. LANDING GEAR KNUCKLE ASSEMBLY (TYPICAL) (RAPID DEPLOYMENT) (AVIM) — DISASSEMBLY/ASSEMBLY (CONT)

ASSEMBLY

Sealing Compound

10. Coat bolts (22) with anaerobic sealing compound (D170).

11. Place fitting assembly (23) on knuckle assembly (4) and secure with four bolts (22). Torque bolts (22) **30 TO 40 INCH-POUNDS**.

12. Secure bolts (22) with lockwire (D132).

13. Install pin (19) in latch (20) and install two blocks (18) on pin (19).

WARNING

To prevent injury to personnel, when assembling any component under spring tension, extreme caution shall be exercised. Approved goggles shall be worn.

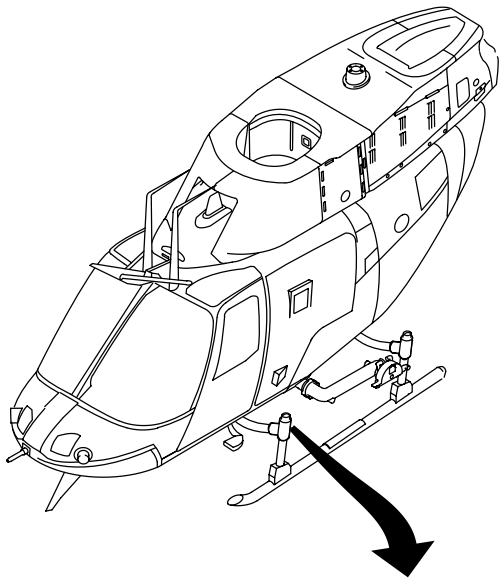
14. Place spring (21), latch (20), pin (19), and two blocks (18) on knuckle assembly (4).

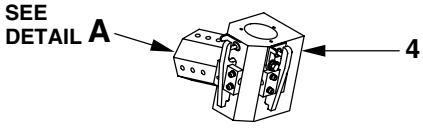
15. Secure two blocks (18) with four bolts (16) and four washers (17). Torque bolts (16) **30 TO 40 INCH-POUNDS**.

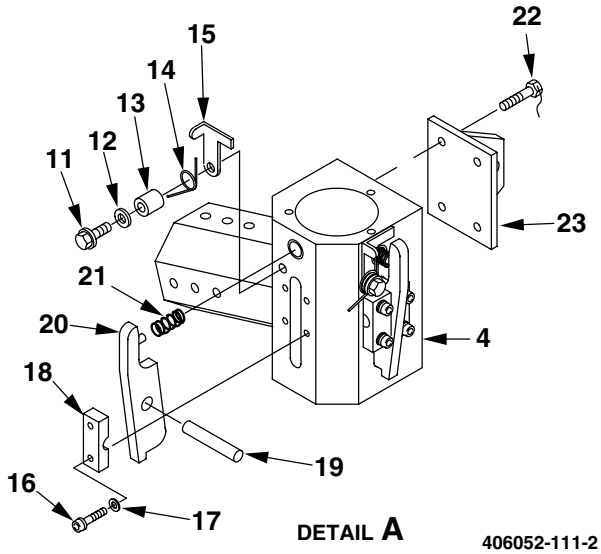
16. Assemble washer (12), cap (13), spring (14), and hook (15) on shoulder bolt (11).

17. Install shoulder bolt (11) on knuckle assembly (4).

18. Torque shoulder bolt (11) **4 TO 6 INCH-POUNDS.**







GO TO NEXT PAGE

3-1-56. LANDING GEAR KNUCKLE ASSEMBLY (TYPICAL) (RAPID DEPLOYMENT) (AVIM) — DISASSEMBLY/ASSEMBLY (CONT)

19. Align notch in bearing (6) with slot in knuckle assembly (4). Install bearing (6) in knuckle assembly (4).

20. Install excluder (5) in knuckle assembly (4) with preformed packing toward retainer (3).

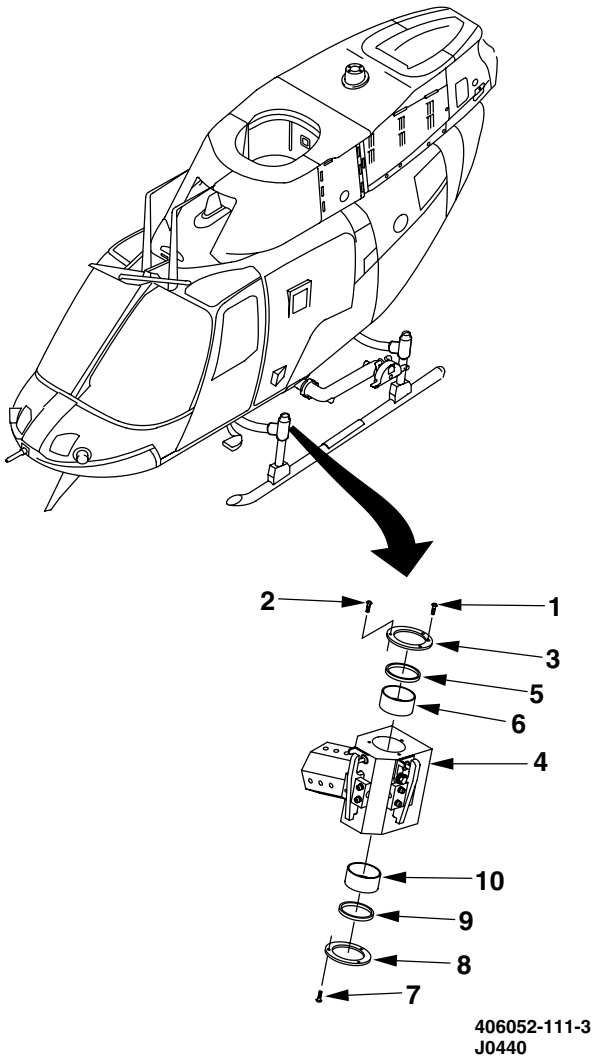
21. Place retainer (3) on knuckle assembly (4) and secure with one screw (1) and two screws (2).

22. Align notch in bearing (10) with slot in knuckle assembly (4). Install bearing (10) in knuckle assembly (4).

23. Install excluder (9) in knuckle assembly (4) with preformed packing toward retainer (8).

24. Place retainer (8) on knuckle assembly (4) and secure with three screws (7).

INSPECT



406052-111-3
J0440

END OF TASK

3-1-57. LANDING GEAR SUPPORT FITTING — REMOVAL/INSTALLATION

This task covers: Removal/Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)
Goggles (B55)

Material:
Sealing Compound (D184)
Epoxy Primer Coating (D98)
Paint (D150)
Rubber Gloves (D111)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

References:
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

GO TO NEXT PAGE

3-1-57. LANDING GEAR SUPPORT FITTING — REMOVAL/INSTALLATION (CONT)

REMOVE

WARNING

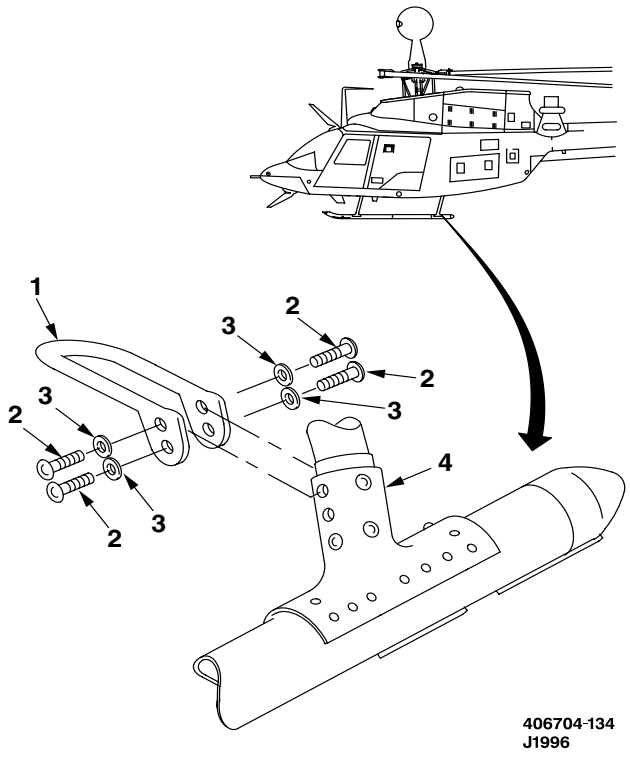
FLIGHT SAFETY CRITICAL AIRCRAFT PARTS (FSCAP)

The external surface condition of the forward and aft crosstubes is critical to flight safety. External surfaces shall be free from dents, tears, pits, scratches and circumferential grind marks.

1. Remove four screws (2) and four washers (3) from aft saddle (4).

2. Trim sealant from around landing gear support fitting (1) with plastic scraper (B123).

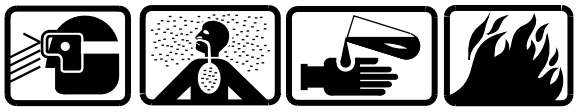
3. Remove landing gear support fitting (1).



INSTALL

4. Place landing gear support fitting (1) on aft saddle.

5. Install four washers (3) and four screws (2) on aft saddle.



Sealing Compound

6. Apply a bead of sealing compound (D184) around edge of landing gear support fittings. Allow sealing compound to cure at room temperature for 24 hours.

7. Prime (D98) and paint (D150) area of repair. Refer to TM 55-1500-345-23.

INSPECT

FOLLOW-ON MAINTENANCE

Remove jacks (Task 1-6-8).

END OF TASK

3-1-58. LANDING GEAR SUPPORT FITTING — CLEANING/INSPECTION/REPAIR

This task covers: Cleaning, Inspection, and Repair (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
General Mechanic Tool Kit (B178)
Plastic Scraper (B123)

Material:
Epoxy Primer Coating (D98)
Paint (D150)
Drycleaning Solvent (D199)
Rubber Gloves (D111)
Wiping Rags (D164)
Sandpaper (D175)

Personnel Required:
67S Scout Helicopter Repairer
67S Scout Helicopter Technical Inspector (TI)

References:
TM 1-1500-204-23
TM 55-1500-345-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)

CLEAN

Drycleaning Solvent

1. Clean landing gear support fitting with drycleaning solvent (D199).

2. Dry landing gear support fitting with wiping rags (D164).

INSPECT

3. Inspect landing gear support fitting to limits shown. See figure Landing Gear Support Fitting — Damage Limits.

REPAIR

4. Repair damaged landing gear support fitting.

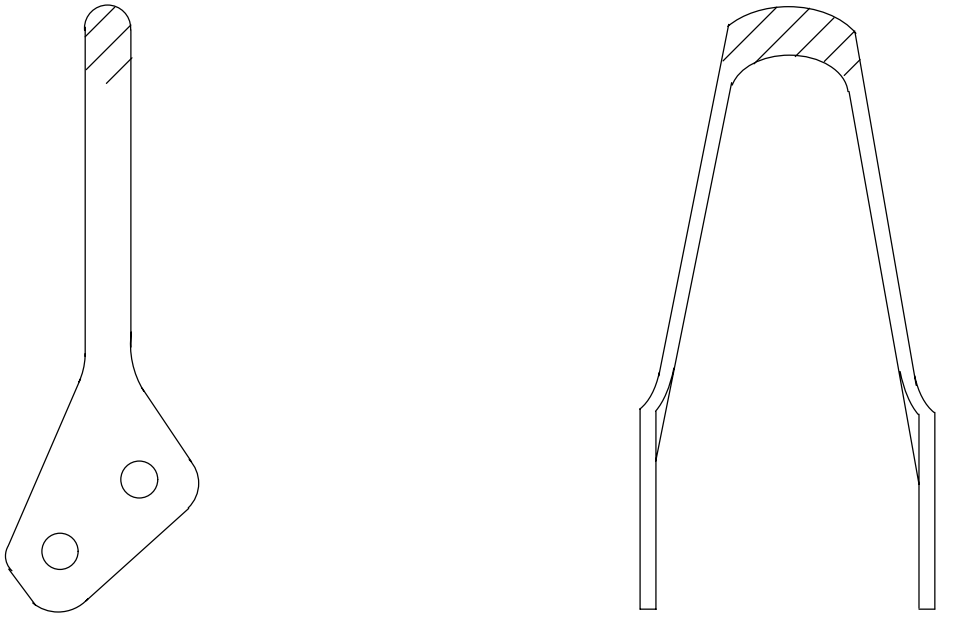
5. Weld cracked fitting in accordance with TM 1-1500-204-23.

Sanding Operations

6. Polish out reparable mechanical and corrosion damage using 400 grit sandpaper (D175).

7. Prime (D98) and paint (D150) area of repair (TM 55-1500-345-23).

GO TO NEXT PAGE



DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE		
MECHANICAL	0.010 IN. BEFORE AND 0.010 AFTER REPAIR	0.020 IN. BEFORE AND 0.020 IN. AFTER REPAIR
CORROSION	0.005 IN. BEFORE AND 0.010 IN. AFTER REPAIR	0.010 IN. BEFORE AND 0.020 IN. AFTER REPAIR
MAXIMUM AREA PER FULL DEPTH REPAIR	45° X 1/4 IN.	90° X 1/2 IN.
NUMBER OF REPAIRS	2 NON-OVERLAPPING	N/A
EDGE CHAMFER TO REMOVE DAMAGE	0.010 IN.	0.020 IN.

NOTE

REPAIR LIMITS ARE LIFETIME ACCUMULATION AT ANY LOCATION

406704-133
J0440

Landing Gear Support Fitting — Damage Limits

END OF TASK

3-1-59. FORWARD CROSSTUBE STRAP (RAPID DEPLOYMENT) — CLEANING/INSPECTION/ REPAIR

This task covers: Cleaning, Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

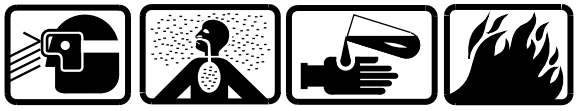
Tools:
General Mechanic Tool Kit (B178)

Material:
Adhesive (D20)
Drycleaning Solvent (D199)
Epoxy Primer (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
67S Scout Helicopter Repairer

References:
TM 55-1500-345-23

CLEAN



Drycleaning Solvent

1. Clean strap surface with drycleaning solvent (D199).

2. Dry strap with a wiping rag (D164).

INSPECT

3. Inspect crosstube strap to limits shown.

4. Inspect cushion for wear, cracks, torn edges, and adhesion to strap. See figure Rapid Deployment Forward Crosstube Strap — Damage Limits.

REPAIR

Sanding Operations

5. Polish out reparable damage on strap using 400 grit sandpaper (D175).

6. Apply coat of epoxy primer (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

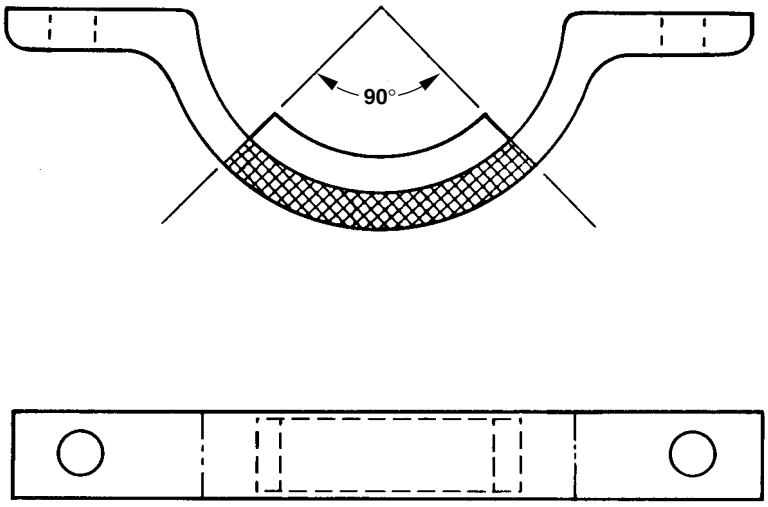
Adhesive

7. Remove damaged cushion and burnish surface of strap. Adhere new cushion to strap with adhesive (D20). Allow 24 hours drying time before assembly, 5 days for maximum strength.

INSPECT

GO TO NEXT PAGE

3-1-59. FORWARD CROSSTUBE STRAP (RAPID DEPLOYMENT) — CLEANING/INSPECTION/ REPAIR (CONT)



DAMAGE LOCATION SYMBOLS

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH	
MECHANICAL:	0.005 In. before repair 0.010 in. after repair	0.010 In. before repair 0.020 in. after repair
CORROSION:	0.005 In. before repair 0.010 in. after repair	0.010 In. before repair 0.020 in. after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.125 Sq. in.	0.25 Sq.in.
NUMBER OF REPAIRS	One per segment	Not critical
EDGE CHAMFER TO REMOVE DAMAGE	0.030 In. x 45°	0.030 In. x 45°
BORE DAMAGE	0.002 In. x 1/4 circumference	0.002 In. x 1/4 circumference

NOTE:

No cracks permitted.

406052-90
H4079

Rapid Deployment Forward Crosstube Strap — Damage Limits

END OF TASK

3-1-60. FORWARD CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR

This task covers: Cleaning Inspection, and Repair (Off Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Tools:
Airframe Repairer Tool Kit (B176)

Material:
Drycleaning Solvent (D199)
Epoxy Primer (D98)
Paint (D150)
Rubber Gloves (D111)
Sandpaper (D175)
Wiping Rags (D164)

Personnel Required:
67S Scout Helicopter Technical Inspector (TI)
68G Aircraft Structural Repairer

References:
TM 55-1500-345-23

CLEAN

Drycleaning Solvent

1. Clean crosstube support surface with drycleaning solvent (D199).

2. Dry crosstube support with a wiping rag (D164).

INSPECT

3. Inspect crosstube support to limits shown. If damage is beyond limits, replace crosstube support. See figure Rapid Deployment Crosstube Support — Damage Limits.

4. Inspect nutplates for damage. No damage allowed.

REPAIR

Sanding Operations

5. Polish out reparable damage using 400 grit sandpaper (D175).

6. Apply coat of epoxy primer (D98) to repair area followed by coat of paint (D150) (TM 55-1500-345-23).

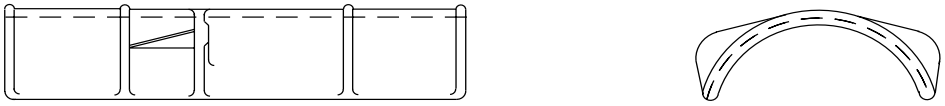
7. Replace damaged nutplates (Task 3-1-30).

INSPECT

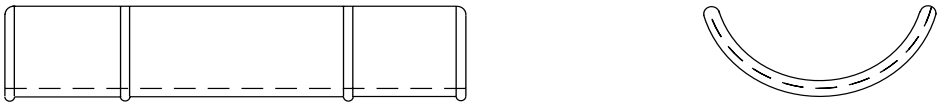
GO TO NEXT PAGE

3-1-60. FORWARD CROSSTUBE COMPONENTS (RAPID DEPLOYMENT) — CLEANING/ INSPECTION/REPAIR (CONT)

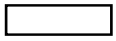
UPPER CROSSTUBE SUPPORT



LOWER CROSSTUBE SUPPORT



DAMAGE LOCATION SYMBOLS



TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL:	0.010 in. before repair 0.020 in. after repair
CORROSION:	0.010 in. before repair 0.020 in. after repair
MAXIMUM AREA FULL DEPTH REPAIR	0.50 Sq. In.
MAXIMUM NUMBER OF REPAIRS	One per segment
EDGE CHAMFER	0.030 in. x 45°

NOTE:

No cracks permitted.

406060-512
H4369

Rapid Deployment Crosstube Support — Damage Limits

All data on pages 3-169 through 3-171/(3-172 blank) deleted END OF TASK

GLOSSARY

Abbreviation/ Acronym	Definition
AC	Alternating Current
ACK	Acknowledge
ADF	Automatic Direction Finder
ADS	Air Data System
ADSS	ANVIS Display Symbology System
ADU	Audio Distribution Unit
ADV	Advisory
AEU	Armament Electronic Unit
AI	Airborne Intercept
AJ	Antijamming
ALSE	Aviation Life Support Equipment
ALT	Altitude
AM	Amplitude Modulation
AMP	Ampere
AMP	Amplifier
ANVIS	Aviators Night Vision Imaging System
AOAP	Army Oil Analysis Program
APU	Aircraft Power Unit
AR	Army Regulation
ARMT	Armament
ASE	Aircraft Survivability Equipment
ATAS	Air-to-Air Stinger
ATHS	Airborne Target Handover System
ATTD	Attitude
AUTO	Automatic
AUX	Auxiliary
AVIM	Aviation Intermediate Maintenance
AVTR	Airborne Video Tape Recorder
AVUM	Aviation Unit Maintenance
AWG	American Wire Gauge
BATT	Battery
B HOT	Black Hot
BIT	Built-In Test
BITE	Built-In Test Equipment
BKUP	Backup

Glossary (Cont)

Abbreviation/ Acronym	Definition
BL	Butt Line
BLWR	Blower
BNR	Burner
BRSIT	Boresight
BRT	Bright
CAGE	Commercial and Government Entity Code
CARC	Chemical Agent Resistant Coating
CB	Circuit Breaker
CDS	Control Display System
CFT	Captive Flight Trainer
CG	Center of Gravity
CHGR	Charger
CIPH	Cipher
CIT	Compressor Inlet Temperature Sensor
CKPT	Cockpit
CKPT LT	Cockpit Light
CL	Center Line
CLR	Clear
COLL	Collision
COMSEC	Communication Security
CPC	Corrosion Preventive Compound
CPG	Copilot/Gunner
CRES	Corrosion Resistant Steel
CTRL	Control
DA PAM	Department of the Army Pamphlet
DC	Direct Current
DEFOG	Windshield Defogger System
DES	Designation
DETR	Detector
DIGT	Digital
DIR	Directional
DISENG	Disengage
DN	Down
DOD	Department of Defense
DRA	Data Rate Adapter
DSC	Digital Scan Converter

Glossary (Cont)

Abbreviation/ Acronym	Definition
DSPL	Display
DTS	Data Transfer System
DX	Direct Exchange
ECU	Electronic Control Unit
ECUIC	Electronic Control Unit Interface Computer
EGI	Embedded Global Position/Inertial Navigation
ELEV	Elevation
EMI	Electromagnetic Interference
ENG	Engine
ENGA	Engage
ESC	Electronic Supervisory Control
ESNTL	Essential
EU	Electronics Unit
EXT	External
FADEC	Full Authority Digital Electronic Control
FCU	Fuel Control Unit
FDLS	Fault Detection and Locating System
FFAR	Folding Fin Aerial Rocket
FM	Frequency Modulation
FOC	Focus
FOV	Field-of-View
FR	Frame
FREQ	Frequency
FRZ	Freeze
FS	Fuselage Station
FWD	Forward
FXD	Fixed
GEN	Generator
GRBX	Gearbox
GSE	Ground Support Equipment
HDG	Heading
HF	High Frequency
HHM	Heading Hold Mode
HLFR	Hellfire
HMS	HELLFIRE Missile System
HMU	Hydromechanical Unit

Glossary (Cont)

Abbreviation/ Acronym	Definition
HOM	Homing (FM)
HSD	Horizontal Situation Display
HSF	Hot Section Factor
HTR	Heater
HYD	Hydraulic
ICS	Internal Communication System
ID	Inside Diameter
IDM	Improved Data Modem
IEU	Interface Electronics Unit
IFF	Identification Friend or Foe
IFM	Improved Frequency Modulation
IGN	Ignition
INIT	Initiate
INST	Instrument
INST LT	Instrument Light
INTCOM	Intercommunication
INV	Inverter
IR	Infrared
ISP	Integrated Systems Processor
JETT	Jettison
KM	Kilometer
KPH	Kilometers Per Hour
KTS	Knots
KYBD	Keyboard
LAT	Latitude
LCF	Low Cycle Fatigue
LDS	Laser Detecting System
LOAL	Lock On After Launch
LOBL	Lock On Before Launch
LRF/D	Laser Rangefinder/Designator
LRU	Line Replaceable Unit
LT	Light
L/H	Left Hand
LVDT	Linear Variable Differential Transformer
MAC	Maintenance Allocation Chart
MAINT	Maintenance

Glossary (Cont)

Abbreviation/ Acronym	Definition
MAPS	Maintenance Action Precise Symptom
MCPS	MMS Central Power Supply
MCPU	Master Controller Processor Unit
MFD	Multifunction Display
MFK	Multifunction Keyboard
MLM	Multipurpose Lightweight Missile
MMS	Mast Mounted Sight
MMSS	Mast Mounted Sight Subsystem
MNL	Manual
MOC	Maintenance Operational Check
MOM	Moment
MPD	Multiparameter Display
MPLH	Multi Purpose Light Helicopter
M/R	Main Rotor
MOS	Military Occupational Specialty
MSDS	Material Safety Data Sheets
MSP	MMS System Processor
MSS	Missile Sight System
MSSEU	Missile Sight System Electronics Unit
MTA	Mast Turret Assembly
MTF	Maintenance Test Flight
MWO	Modification Work Order
MUX	Multiplex
NAV	Navigation
NBC	Nuclear Biological and Chemical
NG	Gas Generator Speed
NICAD	Nickel-Cadmium Battery
NOE	Nap-of-the-Earth
NP	Power Turbine RPM
NR	Main Rotor RPM
NSN	National Stock Number
NVG	Night Vision Goggles
OAT	Outside Air Temperature
OD	Outside Diameter
ODA	Optical Display Assembly
OPR	Operate

Glossary (Cont)

Abbreviation/ Acronym	Definition
OS	Overspeed
OSET	Offset
OSHA	Occupational Safety and Health Administration
PART SEP	Particle Separator
PDU	Pilot Display Unit
PLT	Pilot
PMA	Permanent Magnet Alternator
POS	Position
POS LT	Position Light
PPM	Progressive Phase Maintenance
PSI	Pounds Per Square Inch
PSID	Pounds Per Square Inch Differential
PSIG	Pounds Per Square Inch Gauge
PWR	Power
QAD	Quick Attach-Detach
QE	Engine Torque
QM	Mast Torque
QTY	Quantity
RALT	Radar Altimeter
RAST	Raster
RCCB	Remote Control Circuit Breaker
RCPT	Receptacle
RDS	Radar Detecting System
REC	Receive
RECT	Rectifier
REL	Release
RET	Retract
RFD	Remote Frequency Display
RHE	Remote HELLFIRE Electronics Unit
RKT	Rocket
RPM	Revolutions Per Minute
RPSTL	Repair Parts and Special Tools List
RST	Reset
RT	Receiver/Transmitter
R/H	Right Hand
SAM	Surface-To-Air Missile

Glossary (Cont)

Abbreviation/ Acronym	Definition
SCAS	Stability and Control Augmentation System
SCTY	Security
SEL	Select
SEU	Sight Electronics Unit
SINCGARS	Single Channel Ground/Air Radio System
SMR	Source, Maintenance, and Recoverability
SRCH	Search
STA	Station
STBY	Standby
SYMB	Symbology
TACFIRE	Tactical Fire Direction
TAMS	Transmission Attitude Measurement System
TB	Technical Bulletin
TBD	To Be Designated
TBO	Time Between Overhaul
TCU	Thermal Control Unit
TEMP	Temperature
TGT	Turbine Gas Temperature
TGT/TRQ	Turbine Gas Temperature/Torque
TI	Technical Inspector
TIS	Thermal Imaging Sensor
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment
TMOPS	Torquemeter Oil Pressure Sensor
T/R	Tail Rotor
TRK	Track
TRQ	Torque
TRU	Transformer Rectifier Unit
TVS	Television System
UHF	Ultra High Frequency
U/M	Unit of Measure
UTM	Universal Transverse Mercator
UUT	Unit Under Test
UWP	Universal Weapons Pylon
VAC	Volts Alternating Current
VAR	Variation

Glossary (Cont)

Abbreviation/ Acronym	Definition
VDC	Volts Direct Current
VDU	Video Downlink/Uplink
VHF	Very High Frequency
VID	Video
VSD	Vertical Situation Display
VSI	Vertical Scale Instrument
VTR	Video Tape Recorder
VTS	Video Tracker System
VTVM	Vacuum Tube Voltmeter
WDC	Water Displacing Compound
WL	Water Line
WRN	Warning
WSPS	Wire Strike Protection System
XDCR	Transducer (Sensor)
XFMR	Transformer
XMSN	Transmission

ALPHABETICAL INDEX

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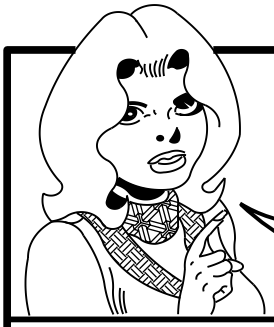

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6	2-1 a		
B1		4-3	

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In line 6 of paragraph 2-1a the manual states the engine has 6 cylinders. The engine on my set only has 4 cylinders. Change the manual to show 4 cylinders.

Callout 16 on figure 4-3 is pointed at a bolt. In key to figure 4-3, item 16 is called a shim - Please correct one or the other

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