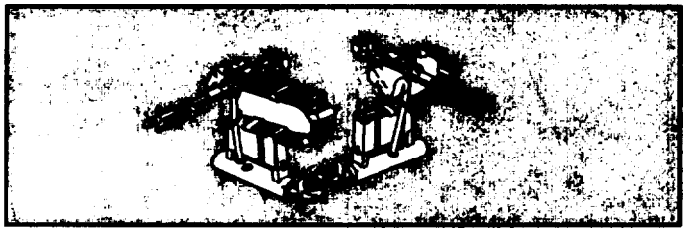
TM 9-1005-262-13

SUPERSEDES COPIES, SEE PAGE i FOR COMPLETE DETAILS

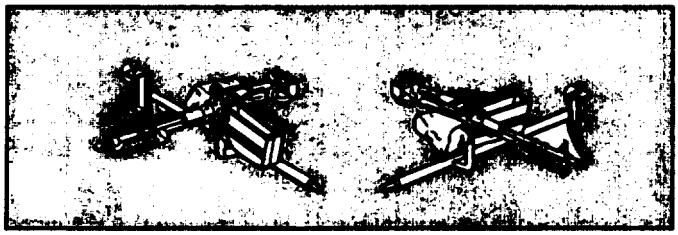
TECHNICAL MANUAL

OPERATOR, AVIATION UNIT, AND AVIATION INTERMEDIATE MAINTENANCE MANUAL FOR

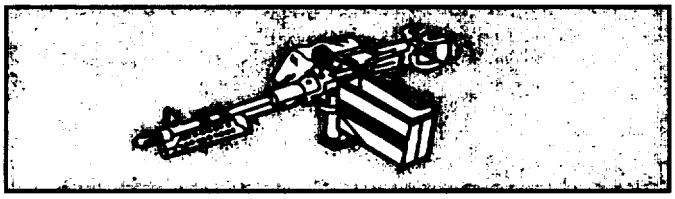
ARMAMENT SUBSYSTEM, HELICOPTER, 7.62 MM MACHINE GUN MOUNTS:



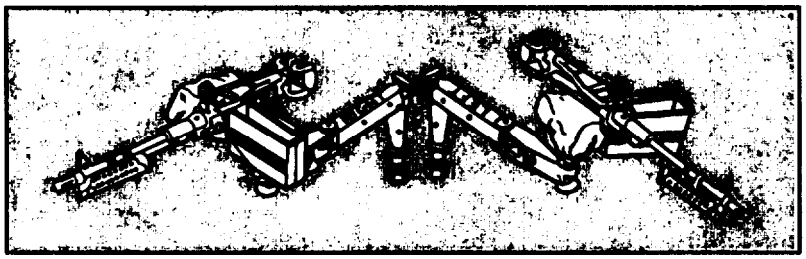
DOOR MOUNT, LIGHTWEIGHT, MODEL M23
P/N 11691604 (NSN 1005-00-907-0720)



DOOR MOUNT, LIGHTWEIGHT, MODEL M24
P/N 11691606 (NSN 1005-00-763-1404)



RAMP MOUNTED, LIGHTWEIGHT, MODEL M41
P/N 8436598 (NSN 1005-00-087-2046) AND



WINDOW MOUNTED, LIGHTWEIGHT, MODEL M144
P/N 12011812 (NSN 1005-01-193-4878)

CAUTION

READ HOW TO USE THIS MANUAL, CHAPTER 1, CHAPTER 2, AND APPLICABLE MAINTENANCE PROCEDURES OF CHAPTER 3, CHAPTER 4, OR CHAPTER 5 BEFORE STARTING ANY INSPECTION, CHECK, SERVICE, OR MAINTENANCE PROCEDURES.

HEADQUARTERS, DEPARTMENT OF THE ARMY

29 DECEMBER 1986

CHANGE

No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *10 July 1997*

OPERATOR, AVIATION UNIT, AND AVIATION INTERMEDIATE MAINTENANCE MANUAL

FOR

ARMAMENT SUBSYSTEM, HELICOPTER,
7.62 MM MACHINE GUN MOUNTS:

DOOR MOUNTED, LIGHTWEIGHT, MODEL M23
P/N 11691604 (NSN 1005-00-907-0720)
DOOR MOUNTED, SIGHTWEIGHT, MODEL M24
P/N 11691606 (NSN 1005-00-763-1404)
RAMP MOUNTED, LIGHTWEIGHT, MODEL M41
P/N 8436598 (NSN 1005-00-087-2046) AND
WINDOW MOUNTED, LIGHTWEIGHT, MODEL M144
P/N 12011812 (NSN 1005-01-193-4878)

DISTRIBUTION STATEMENT C. This publication is required for official use or for administrative or operational purposes only. Distribution is limited to U.S. Government Agencies and their contractors. Other requests for this document must be referred to Director, Armament and Chemical Acquisition and Logistics Activity, ATTN: AMSTA-AC-NML, Rock, Island, IL 61299-7630.

TM 9-1005-262-13, 29 December 1986, is changed as follows:

1. Remove old pages and insert new pages as indicated below.

2. New or changed material is indicated by a vertical bar in the margin of the page.

Remove Pages	Insert Pages
i and ii	i and ii
1-1 thru 1-6	1-1 thru 1-6
2-1 thru 2-4	2-1 thru 2-4
4-5 thru 4-10	4-5 thru 4-10
None	2028-2 (Sample & 2 blank forms)
Front Cover (inside - WARNING)	Front Cover (inside - WARNING)

3. File this change sheet in front of the publication for reference purposes.

By Order of the Secretary of the Amy:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
03727

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 310413 requirements for TM 9-1005-262-13.

SUMMARY OF WARNINGS AND FIRST AID

This list summarizes critical WARNINGS in this manual. They are repeated here to let you know how important they are. Study these WARNINGS carefully; they can save your life and the lives of soldiers you work with. Observe all warnings within the text.

WARNING

Personnel performing instructions involving operations, procedures, and practices which are included or implied in this technical manual shall observe the following instructions. Disregard of these warnings and precautionary information can cause serious injury or DEATH.

Hearing protection such as ear plugs must be used by all personnel in and around the helicopter during its operation.

Before performing functional Preliminary Checks and Services on Armament Subsystems M23, M24, M41 and M144, check the M60D machine gun to make sure it is clear of ammunition.

The procedures in this manual involve the operation of machine guns with live ammunition. All standard safety precautions governing the handling of weapons and live ammunition must be observed. When not in use, all weapons shall be pointed in a direction offering the least exposure to personnel and property in the event of accidental firing.

Safe the machine gun before servicing the armament subsystem.

Failure to perform certain steps in the procedures can cause potentially dangerous situations. These steps are pointed out in the text and must be followed.

Do not use cleaning solvents near an open flame. Fire extinguishers must be available when these materials are used. Use only in well ventilated areas.

Do not breathe fumes from the vapor degreaser. Fumes are toxic. Use only in well ventilated areas.

Cleaning solvents evaporate quickly and have a drying effect on the skin. Protective gloves will be worn to avoid cracks in the skin and, in some cases, mild irritation or inflammation of the skin.

Use and disposal of flammable and toxic materials will be in accordance with applicable regulations.

Fire machine gun only when properly attached to a fully deployed mount. Do not force machine gun beyond built-in limits of field of fire. Damage to aircraft may result causing injury or loss of life.

Helical retainer is under spring tension. Do not remove slide restrictors, releasing spring, before helical retainer is trapped or injury to personnel may result.

FIRST AID

See FM 21-11 (Test) for artificial respiration and first aid procedures.

PIN: 061096-001

TECHNICAL MANUAL

No. 9-1005-262-13

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 29 December 1986

OPERATOR, AVIATION UNIT, AND AVIATION INTERMEDIATE MAINTENANCE MANUAL

FOR

ARMAMENT SUBSYSTEM, HELICOPTER,
7.62 MM MACHINE GUN MOUNTS:
DOOR MOUNTED, LIGHTWEIGHT, MODEL M23
P/N 11691604 (NSN 1005-00-907-0720)
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WINDOW MOUNTED, LIGHTWEIGHT, MODEL M144
P/N 12011812 (NSN 1005-01-193-4878)

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 the back of the manual direct to: Director, Armament and Chemical Acquisition and Logistics Activity (ACALA), ATTN: AMSTA-AC-NML, Rock Island, IL 61299-7630. A reply will be furnished to you.

*This manual supersedes Armament Mount portion of TM 9-1005-262-14, dated 29 August 1973, TM 9-1005-262-ESC, dated 5 May 1969, and LO 9-1005-262-12, dated 2 April 1973.

HOW TO USE THIS MANUAL

This manual covers Operator, Aviation Unit Maintenance (AVUM), and Aviation Intermediate Maintenance (AVIM) support tasks for the 7.62 MM Machine Gun (M60D) Helicopter Armament Subsystem Mounts: M23, M24, M41, and M144.

Use the front cover locators and edge marked pages to quickly locate those sections identified on the cover.

WHAT'S IN THE MANUAL - FRONT TO BACK

Listed below is an outline of this manuals content, including a brief explanation of each section.

SUMMARY OF WARNINGS AND FIRST AID (on inside of front cover) lists the warnings and first aid information in this manual. These warnings contain additional information about things that could hurt or kill personnel. The maintenance task may have a slightly different version of these warnings.

TABLE OF CONTENTS lists the chapters, sections, and appendixes in this manual. It also lists the pages where chapters, sections, and appendixes are located.

CHAPTER 1 covers general information and gives a quick review of the major components and features of the 7.62 MM Machine Gun (M60D) Helicopter Armament Subsystem Mounts M23, M24, M41, and M144.

CHAPTER 2 contains Operator/Crew Preventive Maintenance Checks and Services, Operation Under Usual Conditions, and Operation Under Unusual Conditions.

CHAPTER 3 contains maintenance tasks authorized to be performed at the Operator/Crew Maintenance level.

CHAPTER 4 contains maintenance tasks authorized to be performed at the Aviation Unit Maintenance (AVUM) level.

CHAPTER 5 contains maintenance tasks authorized to be performed at the Aviation Intermediate Maintenance (AVIM) level.

APPENDIX A lists references such as technical manuals and other publications to be used by personnel.

APPENDIX B is the Maintenance Allocation Chart. It details all maintenance and repair functions authorized at the various maintenance levels. Common and special tools and test equipment required are also listed.

APPENDIX C refers to TM9-1005-262-23P for repair parts and special tools required for operation and maintenance of the armament subsystems.

APPENDIX D lists expendable/durable supplies and materials used to maintain or repair the 7.62 MM Machine Gun (M60D) Helicopter Armament Subsystem Mounts: M23, M24, M41, and M144.

INDEX contains an alphabetical list of important information. Usually each subject is cross-referenced several times to help locate the information easily.

DA FORM 2028-2 is used to recommend improvements or to report errors found in the manual.

METRIC SYSTEM AND EQUIVALENTS provides information to convert between English and Metric equivalents.

USING YOUR MANUAL ON THE JOB

Like any tool, the best way to learn about this manual is to practice using it. Knowing how to use this manual will save both time and money.

To help you find the information you need, each chapter and section of this manual begins with an index listing the contents of the chapter and/or section by title and page/paragraph number.

Where do you start?

A malfunction is discovered either during normal operation, or during normal maintenance such as inspection or PMCS. The symptoms of the malfunction maybe common or unusual, but identification of the fault symptoms is the first step in the troubleshooting process.

Entry into the troubleshooting process is based on observed fault symptoms. It is important that you identify the fault symptoms as accurately as possible and then use the Fault Symptom Index to help identify the item that needs repair or replacement. If you feel confident that you have defined the fault symptoms as well as you can, you can refer directly to the Fault Symptom Index.

The Fault Symptom Index describes the more common fault symptoms that you may encounter, specifies the actions to be taken, and references the places where these actions can be found.

How do you fix the problem - A Quick Overview

1. Turn to the task referenced in the Fault Symptom Index and read it carefully before starting. Pay attention to warnings and cautions. Get the equipment, supplies, and any other personnel needed. If a task requires part replacement, refer to the Repair Parts and Special Tools List (RPSTL), TM 9-1005-262-23P.

2. Start with step 1 in the task and do each step in order. When the last step is done, the problem will be corrected.

Finding and Reading the Task

Example:

It has been determined through troubleshooting that M23 pintle mount must be repaired. Find the task paragraph number in the INDEX for the task REMOVAL/INSTALLATION OF M23 ARMAMENT SUBSYSTEM. The INDEX is found at the back of this manual.

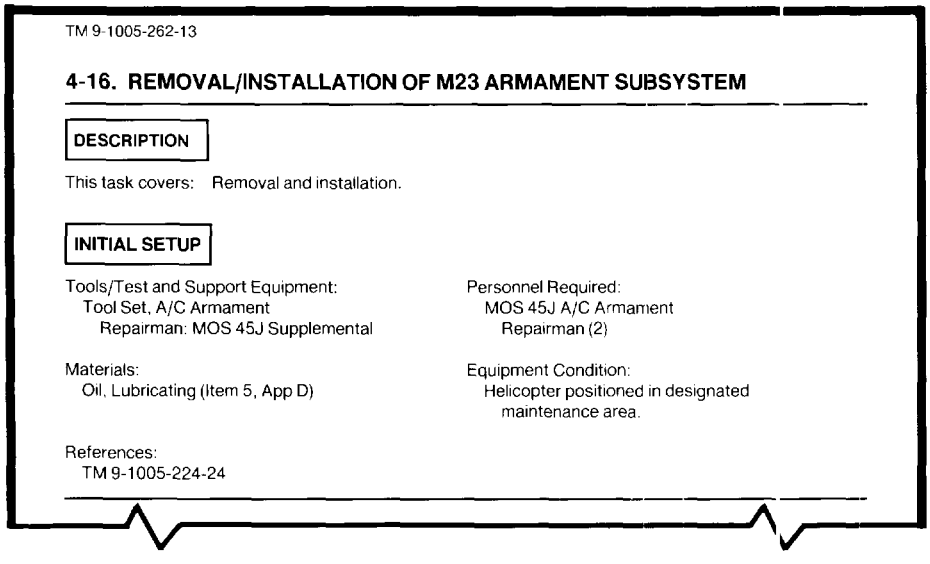
Using the ALPHABETICAL INDEX

The ALPHABETICAL INDEX lists each item under one or more headings. The task, REMOVAL/INSTALLATION of M23 Armament Subsystem, could be found:

Under "R"
Removal/Installation of M23 Armament Subsystem, 4-16
Turn to paragraph 4-16.

Beginning the Task

When you find paragraph 4-16, read the top half of the page. See the example below with its legend.



TM 9-1005-262-13

4-16. REMOVAL/INSTALLATION OF M23 ARMAMENT SUBSYSTEM

DESCRIPTION

This task covers: Removal and installation.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Materials:
Oil, Lubricating (Item 5, App D)

Equipment Condition:
Helicopter positioned in designated maintenance area.

References:
TM 9-1005-224-24

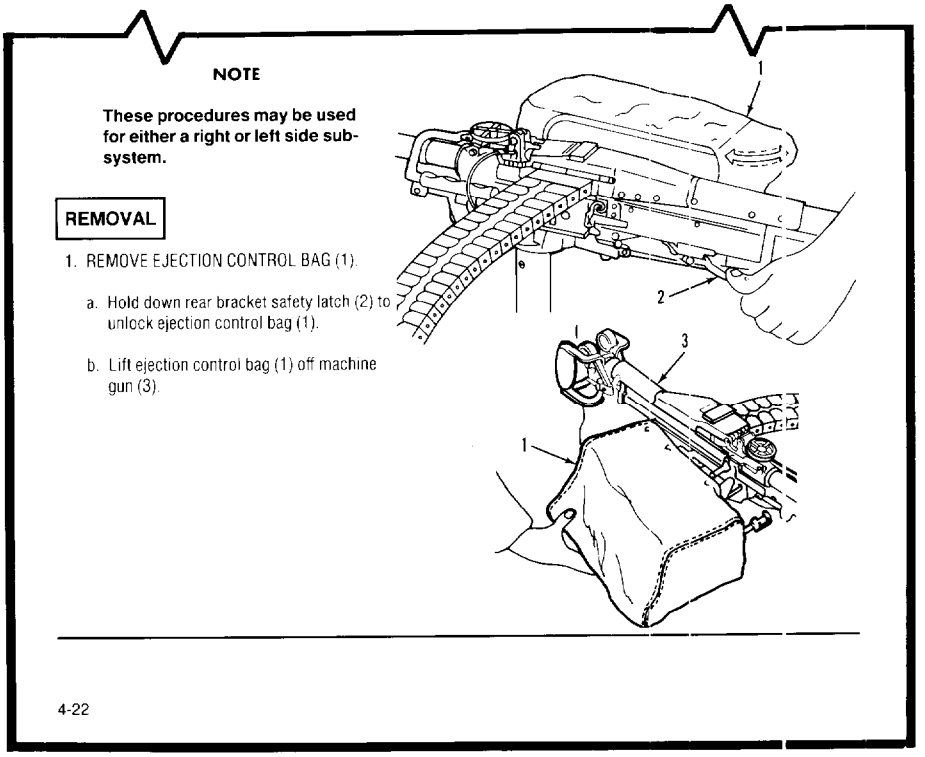
Legend to Example Above

1. Title	This is the paragraph number and name of tile task.
2. Description	This describes the overall actions you will perform.
3. Tools	These are the tools and equipment you will need to complete the task. Tools found in the basic and supplemental A/C armament repairman tool sets are not listed separately.
4. Materials	These are the expendable/durable materials, you will need to do the task.
5. References	This lists other publications needed for reference.
6. Personnel Required	This tells you the personnel needed to perform the task.
7. Equipment Conditions	This describes the condition the equipment must be in before you start the task.

Using the Task Steps

Note that the task is presented in step-by-step illustrated instructions. The numbered steps in capital letters tell WHAT to do; the lettered steps tell HOW to do it. If you are experienced, you may need to read only the numbered steps. If you are not experienced, you will want to read all the steps.

Below is the bottom half of the first page of the task, REMOVAL/INSTALLATION OF M23 ARMAMENT SUBSYSTEM. As you read step 1, match each numbered part in the instructions with the same number in the illustration. It is important to do each step in the order given. Note the boxed word REMOVAL, in the top left corner. It labels one of the major actions for this task. In this and other tasks, you could also see boxed words like DISASSEMBLY, CLEANING, INSPECTION, and ASSEMBLY.



NOTE

These procedures may be used for either a right or left side subsystem.

REMOVAL

1. REMOVE EJECTION CONTROL BAG (1).

   a. Hold down rear bracket safety latch (2) to unlock ejection control bag (1).

   b. Lift ejection control bag (1) off machine gun (3).

4-22

DEFINITION OF TASK TERMS

Warnings, Cautions, and Notes

Pay attention to all warnings and cautions within the task. Ignoring a warning could cause death or injury to personnel. Ignorning a caution could cause damage to equipment. Notes contain facts to make the task easier. Both warnings and cautions always appear before the steps to which they apply.

Examples:

WARNINGs: Call attention to conditions, practices, or procedures which could kill or injure personnel. Warnings are also listed in front of manual.

WARNING

Do not use cleaning solvents near an open flame. Fire extinguishers will be available when these materials are used. Use only in well ventilated areas.

CAUTIONs: Call attention to conditions, practices, or procedures which could damage equipment.

CAUTION

Components that contain bearings will not be cleaned by immersion.

NOTEs: Contain essential information of special importance, interest, or help to make the task easier.

NOTE

The right side and left side M144 mount assemblies are similar in appearance. They are stamped either RIGHT or LEFT on the mount support.

References:

References within a task refer to another task in the same manual. A step in one task maybe a complete task somewhere else. Below is an example of a reference step from the task, LUBRICATION INSTRUCTIONS.

Example:

1. M23 ARMAMENT SUBSYSTEM.
   a. Remove pintle pivot (1) and ball bearings (2), para 4-18 step 2.
   b. Clean pintle pivot (1) and . . .

The tools needed to do the referenced task will be listed in that task.

Cleaning, Inspection, and Repair

General cleaning, inspection, and repair steps for every task are found in Chapter 4, Section IV, GENERAL MAINTENANCE INSTRUCTIONS. Use these general steps to clean, inspect, or repair any part being removed or installed, Special cleaning, inspection, or repair actions will be covered in the task step. Below is a step that requires general cleaning.

Example:

2. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

Kinds of Tasks

“Removal/Installation.”
Tasks which remove and install components. They can be used as tasks which provide access to components or as tasks which replace defective components.

“Repair.”
Tasks which disassemble, clean, inspect, repair, and reassemble components.

“Test.“
Tasks which test the functions of the armament subsystem for proper operation,

“Checkout.”
Tasks which check components for proper operation.

COMMENTS ON TASKS.

The following comments apply to all tasks:

1. Consumable components are listed under materials.
2. No other components are listed under materials.
3. Removed components must be cleaned, inspected, and reinstalled if found to be serviceable.
4. Cleaning and inspection must be done according to general maintenance instructions
5. A new component must be installed if inspection indicates a removed component is defective
6. Defective components must be discarded or sent to the next higher maintenance level
7. If a directional arrow appears in an illustration, it points toward the front of the aircraft.

CHAPTER 1

INTRODUCTION

CHAPTER CONTENTS

Section I. GENERAL INFORMATION

SCOPE

1-1. Use this manual when performing operator/crew, aviation unit, and aviation intermediate maintenance on the equipment listed below.

MODEL NUMBERS AND EQUIPMENT NAME

M23 and M24 Armament Subsystem, Helicopter, 7.62 MM Machine Gun Mounts, Door Mounted, Lightweight

M41 Armament Subsystem, Helicopter, 7.62 MM Machine Gun Mount, Ramp Mounted, Lightweight

M144 Armament Subsystem, Helicopter, 7.62 MM Machine Gun Mount, Window Mounted, Lightweight

MAINTENANCE FORMS, RECORDS, AND REPORTS

1-2. 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).

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

1-3. Refer to TM 750-244-7 for instructions pertaining to destruction of army materiel to prevent enemy use.

PREPARATION FOR STORAGE OR SHIPMENT

1-4. Preservation, packaging, and preparation for storage will be in accordance with TM 740-90-1 and the local directives of the commands concerned.

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

1-5. No special QA/QC information required.

OFFICIAL NOMENCLATURE, NAMES, AND DESIGNATIONS

1-6. A cross reference of the common and official names of the components of the armament subsystems is shown below. Common names will be used throughout the manual.

Common Name	Official Name
Armament Subsystem or Mounts	M23 or M24, Armament Subsystem, Helicopter, 7.62 MM Machine Gun Mount, Door Mounted, Lightweight.
	M41, Armament Subsystem, Helicopter, 7.62 MM Machine Gun Mount, Ramp Mounted, Lightweight.
	M144, Armament Subsystem, Helicopter, 7.62 MM Machine Gun Mount, Window Mounted, Lightweight.

REPORTING EQUIPMENT IMPROVEMENTS RECOMMENDATIONS (EIR)

1-7. If your armament subsystem needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at: Commander, U.S. Army Armament Research, Development and Engineering Center, ATTN: AMSTA-AR QAW-A (R), Rock Island, IL 61299-7300. We'll send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

1-8. The M23, M24, M41, and M144 mounts are attached to the helicopter fuselage to provide a stable mount for the M60D machine gun. Each mount incorporates a pintle for attaching the machine gun to allow elevating, depressing, and traversing the muzzle for aiming and firing. Each armament mount assembly also has either an ammunition box or can assembly to store and supply ammunition rapidly to the feed side of the machine gun. An ejection control bag attaches to the machine gun to catch expended cartridges and links.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

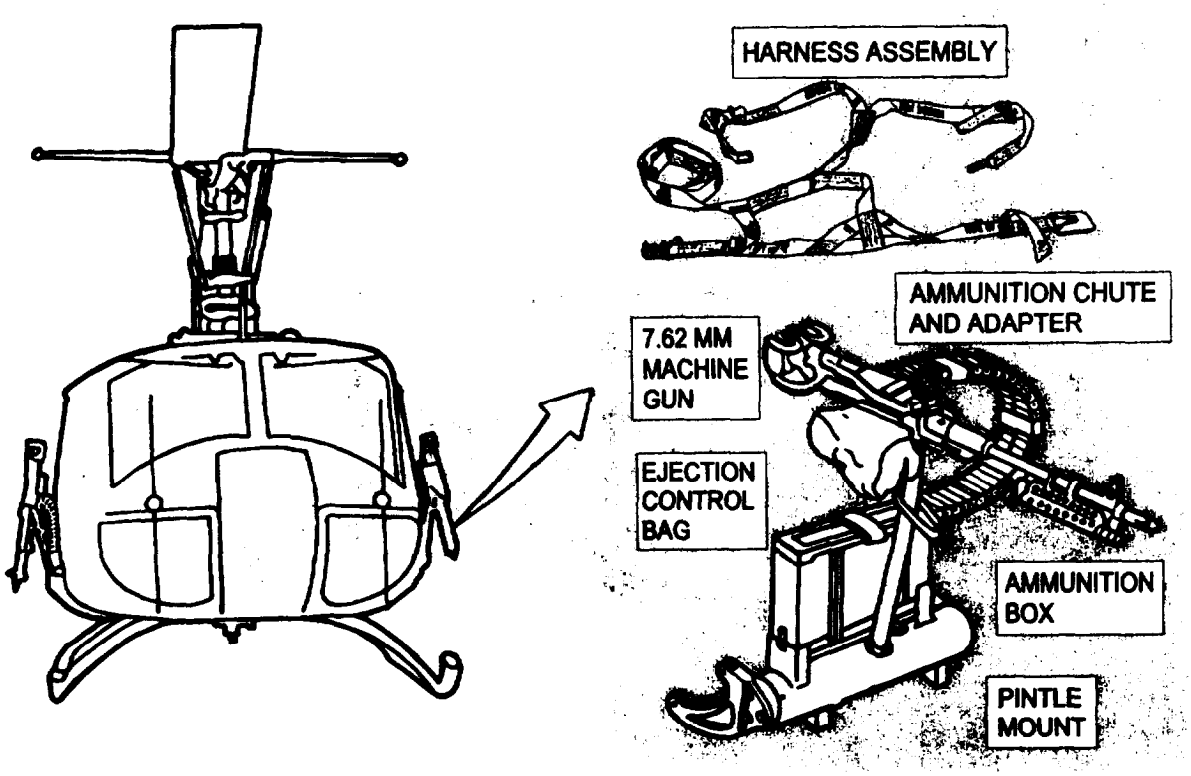
1-9. Each armament subsystem covered by this manual is described below and shown mounted on applicable helicopter.

NOTE

The terms "right" and "left" used In this manual are based on the reader facing forward In the helicopter.

M23 ARMAMENT SUBSYSTEM

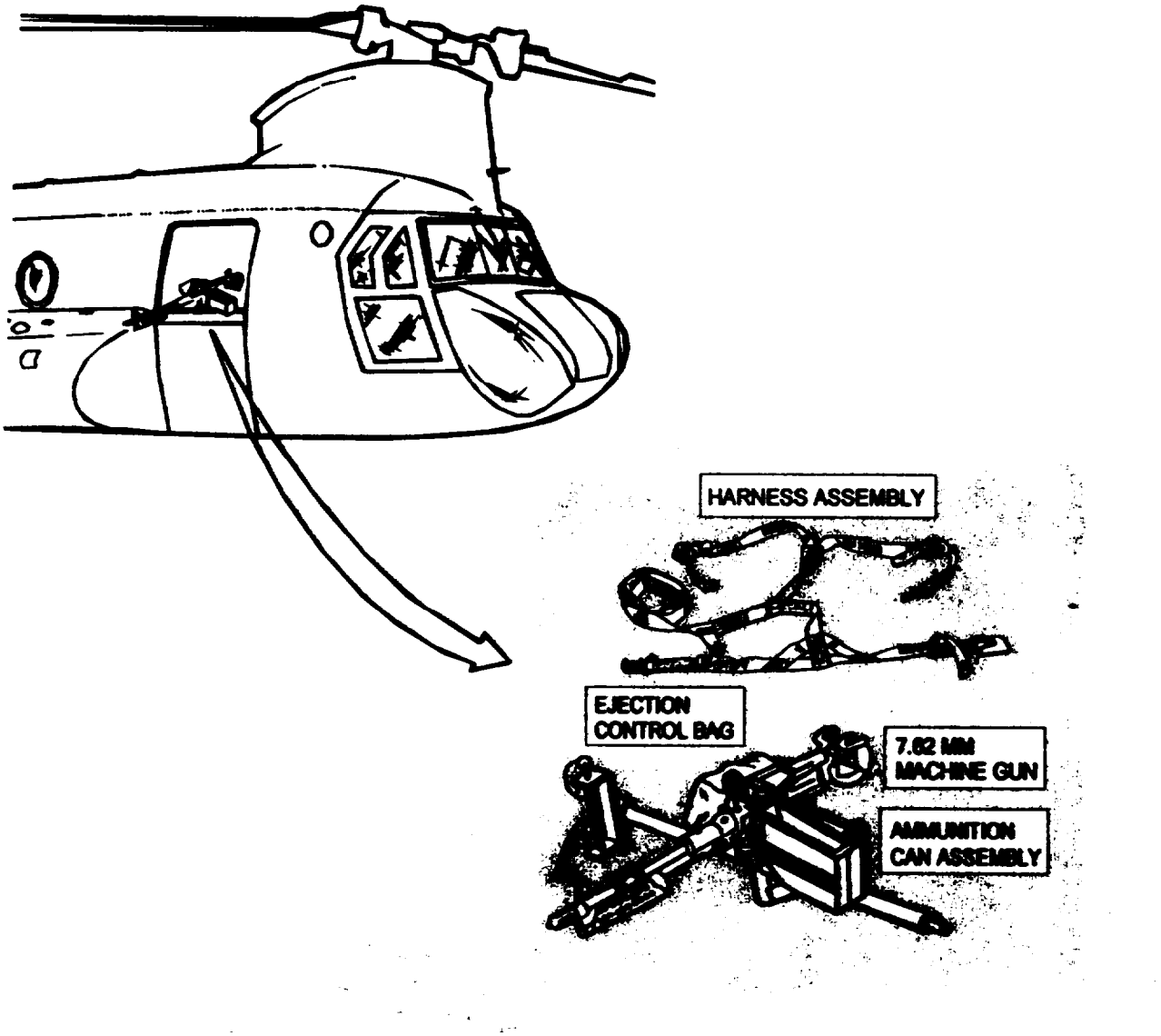
The M23 armament subsystem consists of a safety shoulder harness and a left and right side mount marked left and/or right. Each is bolted to the outside of the UH-1D or UH-1H helicopter by the pintle mount. Attached to the pintle mount is the M60D machine gun with an ejection control bag. The pintle mount is made up of the pintle post assembly, the ammunition box and cover assembly, and the ammunition chute and adapter.



M23 ARMAMENT SUBSYSTEM (LEFT SIDE)

M24 ARMAMENT SUBSYSTEM

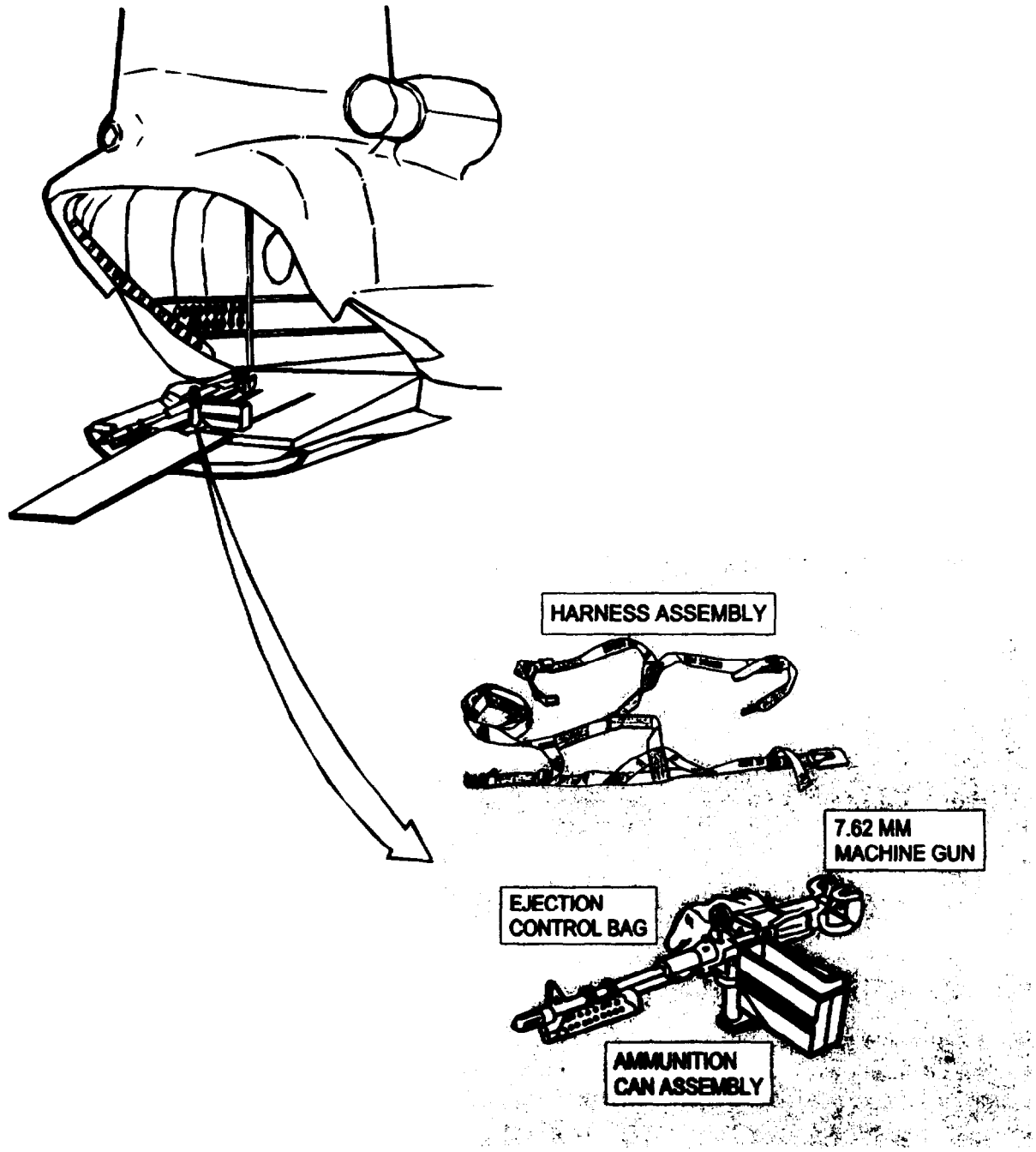
The M24 armament subsystem consists of a safety shoulder harness and a left and right side mount marked left or right. Each is pinned inside the side door frame of a CH-47 series helicopter by the mount assembly. Attached to the mount assembly is the M60D machine gun with an ejection control bag and an ammunition can assembly. The mount assembly consists of the pintle and the mount subassembly.



M24 ARMAMENT SUBSYSTEM (RIGHT SIDE)

M41 ARMAMENT SUBSYSTEM

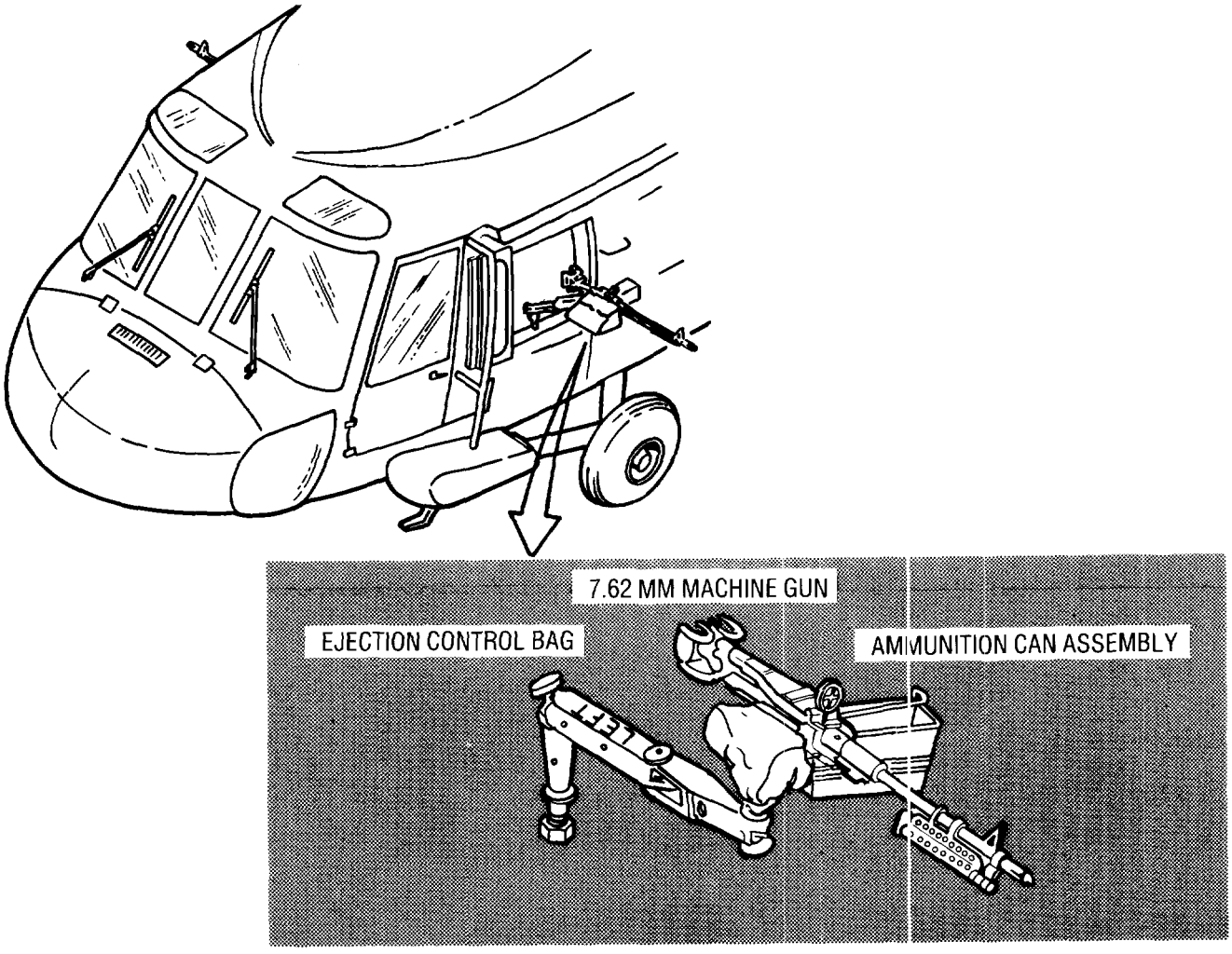
The M41 armament subsystem consists of a safety shoulder harness and mount that is slotted and pinned to studs and a bracket on the inside of the aft ramp in CH-47 series helicopters. Attached to the mount assembly is the M60D machine gun with an ejection control bag and an ammunition can assembly.



M41 ARMAMENT SUBSYSTEM

M144 ARMAMENT SUBSYSTEM

The M144 armament subsystem consists of a left and a right side mount marked left and right. Each is riveted inside the side window frame of a UH-60 helicopter. Attached to the mount is the M60D machine gun with an ejection control bag and an ammunition can assembly. The mount assembly is made up of a pintle mount assembly, release arm assembly, and support mount.



M144 ARMAMENT SUBSYSTEM (LEFT SIDE)

DIFFERENCES BETWEEN MODELS

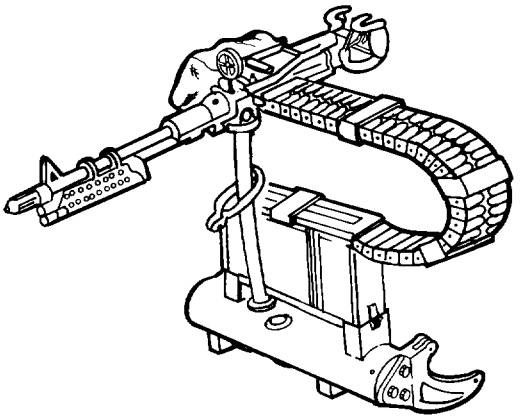
1-10. There is only one model of each armament subsystem: M24, M41, ancl M144. There are, however, two configurations of the base tube assembly on the M23 armament subsystem: one designed for use on both sides and one designed for use on a right or left side only.

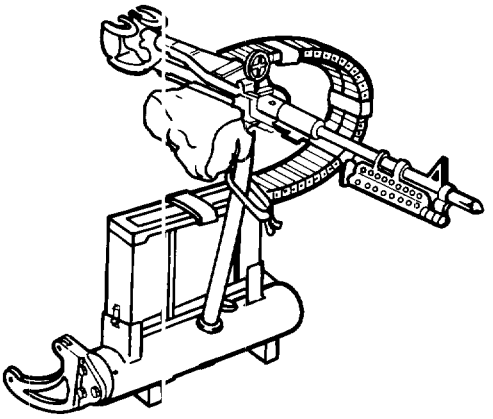
EQUIPMENT DATA

1-11. Performance, weight, and dimensional data for the M23, M24, M41, and M144 armament subsystems are provided in the following tabulated data.

M23 ARMAMENT SUBSYSTEM

Weight	
Subsystem without ammunition	128 pounds
Subsystem with 1100 rds ammunition	200 pounds
Ammunition Capacity per Box	550 rounds
Effective Range (maximum)	1100 meters
Rate of Fire	550-650 shots-per-minute

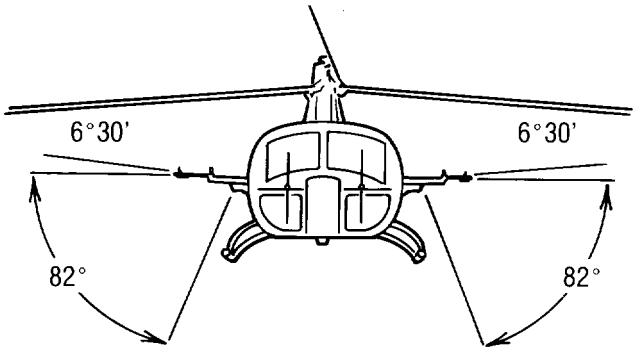




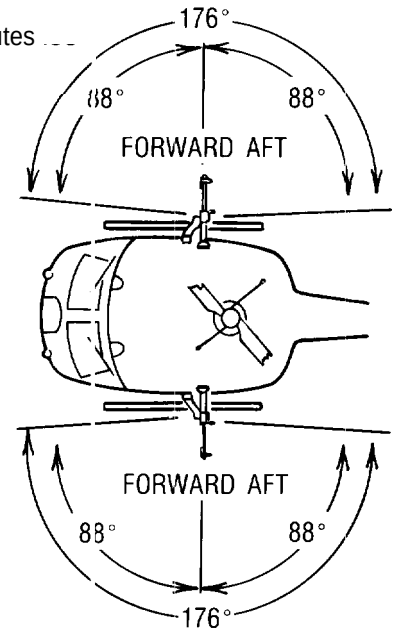
WARNING

Fire machine gun only when properly attached to a fully deployed mount. Do not force machine gun beyond built-in limits of field of fire. Damage to aircraft may result causing injury or loss of life.

Traversing Limits (each side)	
Forward	88 degrees
Aft	88 degrees
Elevation (each side)	6 degrees, 30 minutes
Depression (each side)	82 degrees



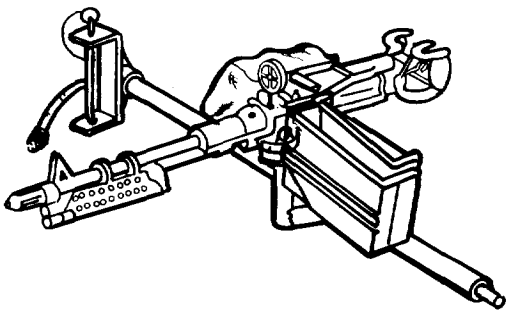
ELEVATION AND DEPRESSION FIELD OF FIRE

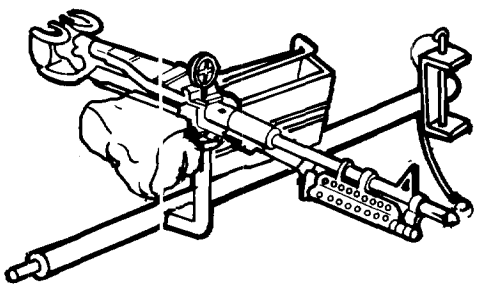


FIELD OF FIRE

M24 ARMAMENT SUBSYSTEM

Weight	
Subsystem without ammunition	87 pounds
Subsystem with 400 rds ammunition	111 pounds
Ammunition Capacity per Can	200 rounds
Effective Range (maximum)	1100 meters
Rate of Fire	550-650 Shots-per-minute





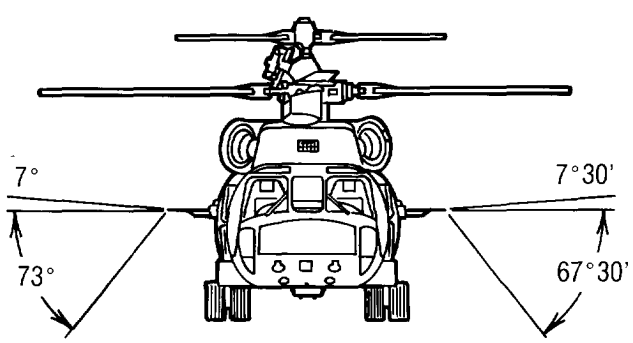
WARNING

Fire machine gun only when properly attached to a fully deployed mount. Do not force machine gun beyond built-in limits of field of fire. Damage to aircraft may result causing injury or loss of life.

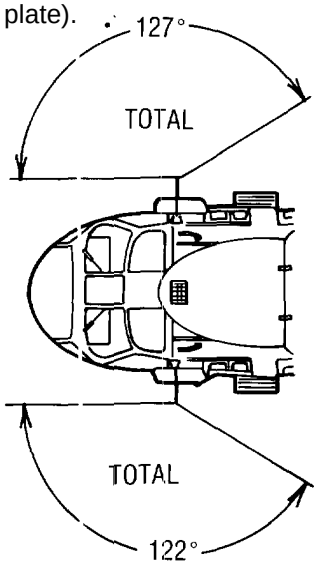
Traversing Limits	
Total Capability (left side)	122 degrees
Total Capability (right side)	127 degrees
Elevation	
Left Side (maximum)	7 degrees, 30 minutes
Right Side (maximum)	7 degrees
Depression	
Left Side (maximum)	67 degrees, 30 minutes
Right Side (maximum)	73 degrees

Note

A modification to further limit machine gun traverse must be performed on the pintle post of the M24 mount assembly to prevent damage to helicopter from machine gun fire ("S" added to date box of overhaul data plate).



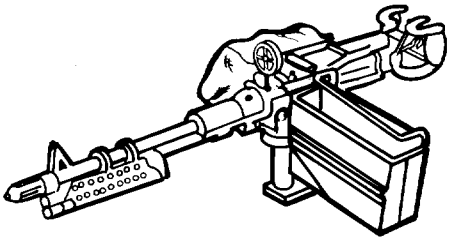
ELEVATION AND DEPRESSION FIELD OF FIRE



TRAVERSING FIELD OF FIRE

M41 ARMAMENT SUBSYSTEM

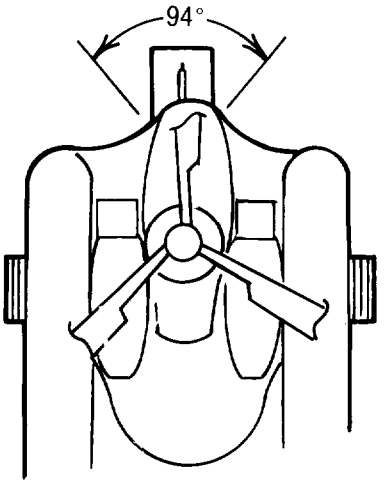
Weight	
Subsystem without ammunition	42 pounds
Subsystem with 200 rds ammunition	55 pounds
Ammunition Capacity per can	200 rounds
Effective Range (maximum)	1100 meters
Rate of Fire	550-650 shots-per-minute



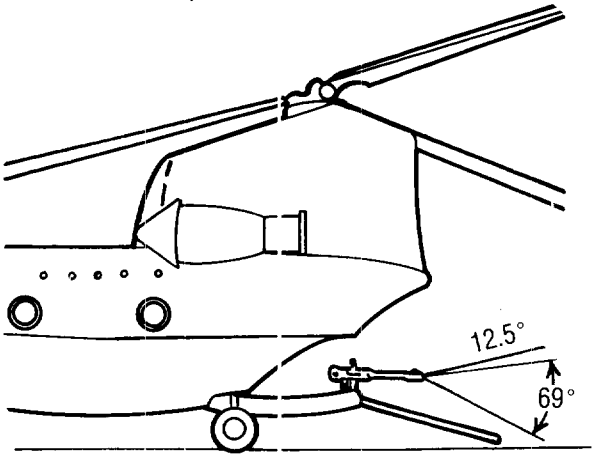
WARNING

Fire machine gun only when properly attached to a fully deployed mount. Do not force machine gun beyond built-in limits of field of fire. Damage to aircraft may result causing injury or loss of life.

Traversing Limits	
Total Capability	94 degrees
Elevation	12.5 degrees
Depression	69 degrees



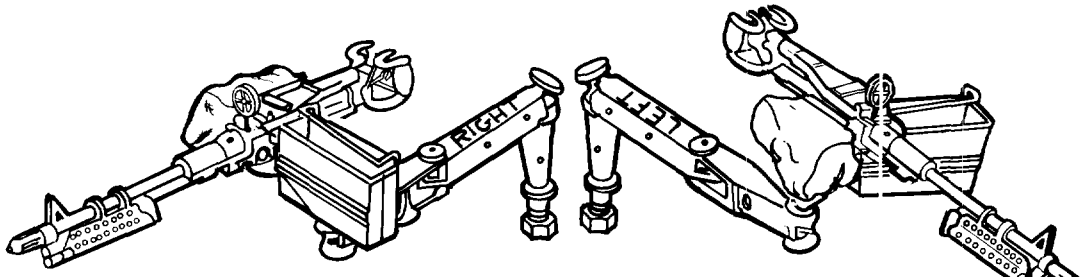
TRAVERSING
FIELD OF FIRE



ELEVATION
AND
DEPRESSION
FIELD OF FIRE

M144 ARMAMENT SUBSYSTEM

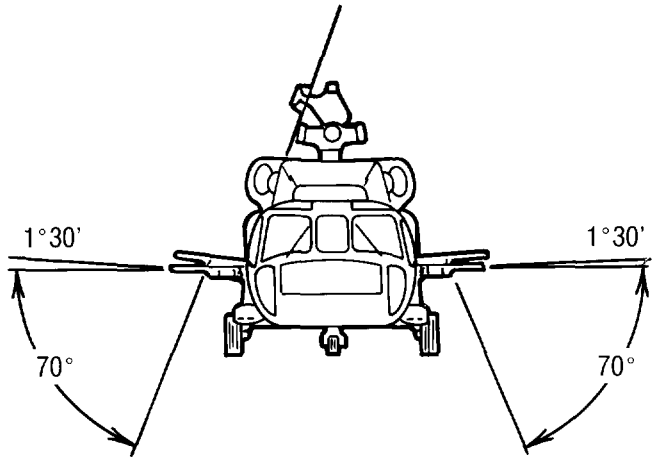
Weight	
Subsystem without ammunition	84.6 pounds
Subsystem with 400 rds ammunition	110.6 pounds
Ammunition Capacity per Can	200 rounds
Effective Range (maximum)	1100 meters
Rate of Fire	550-650 shots-per-minute



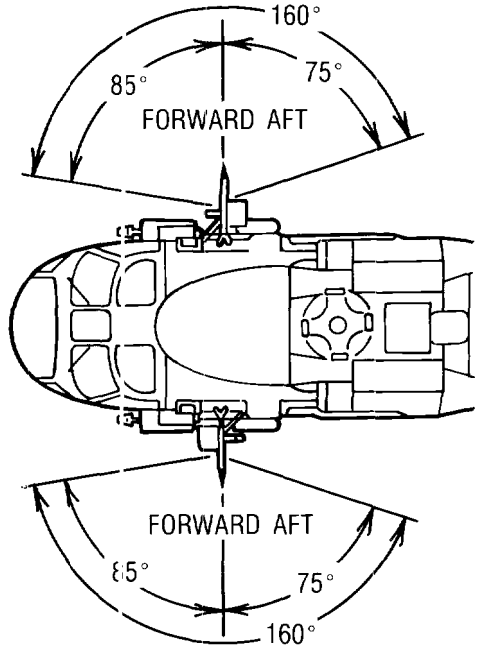
WARNING

Fire machine gun only when properly attached to a fully deployed mount. Do not force machine gun beyond built-in limits of field of fire. Damage to aircraft may result causing injury or loss of life.

Traversing Limits (each side)	
Forward	85 degrees
Aft	75 degrees
Elevation (each side)	1 degree, 30 minutes
Depression (each side)	70 degrees



ELEVATION AND DEPRESSION FIELD OF FIRE



TRAVERSING FIELD OF FIRE

SAFETY, CARE, AND HANDLING

1-12. The M60D machine gun is installed on the M23, M24, M41, or M144 armament subsystem covered by this manual. Refer to M60D machine gun manual, TM 9-1005-224-10, for safety procedures in case of a runaway (won't stop firing), misfire (won't fire), misfire in hot barrel (possible cookoff), or stuck cartridge casing. TM 9-1005-224-10 also details authorized ammunition and the care, handling, and preservation of ammunition.

An armament mount subsystem fully deployed, in good condition, and properly installed will limit movement of the M60D machine gun. Any condition that changes the possible field of fire of the machine gun may allow rounds to strike the aircraft, possibly hitting parts which are not visible.

Section III. PRINCIPLES OF OPERATION

GENERAL

1-13. This section gives the functional principles of operation of the M23, M24, M41, and M144 armament subsystems.

FUNCTIONAL DESCRIPTION

1-14. The following is a functional description of the major components of the M23, M24, M41, and M144 armament subsystems.

AMMUNITION CAN ASSEMBLY OR AMMUNITION BOX AND COVER ASSEMBLY

As part of the M24, M41, and M144 armament subsystem, the ammunition can assembly stores ammunition for rapid supply to the feed side of the 7.62 MM machine gun. The ammunition box and cover assembly performs the same function on the M23 armament subsystem.

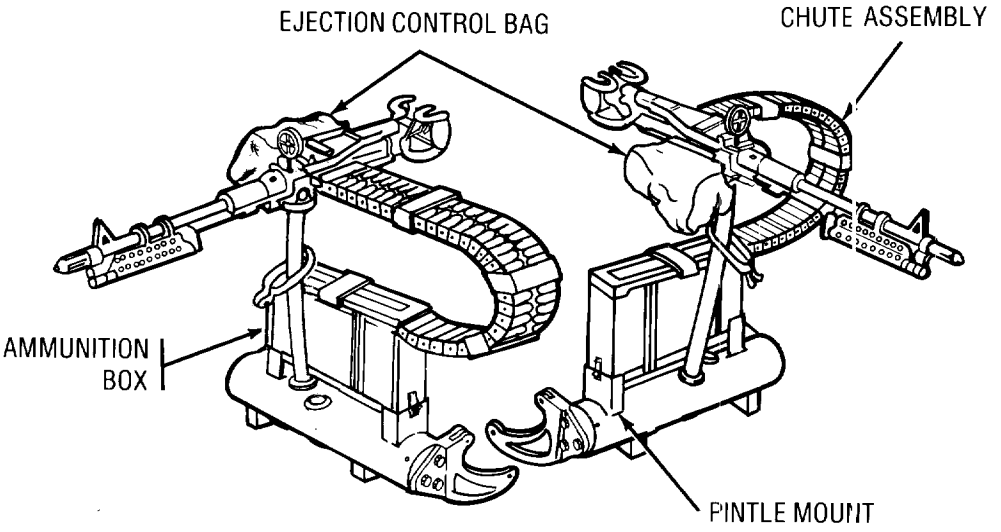
EJECTION CONTROL BAG

As part of the M23, M24, M41, and M144 armament subsystem, the ejection control bag collects spent cartridges and cartridge belt links.

M60D MACHINE GUN. Refer to TM 9-1005-224-10.

M23 PINTLE MOUNT

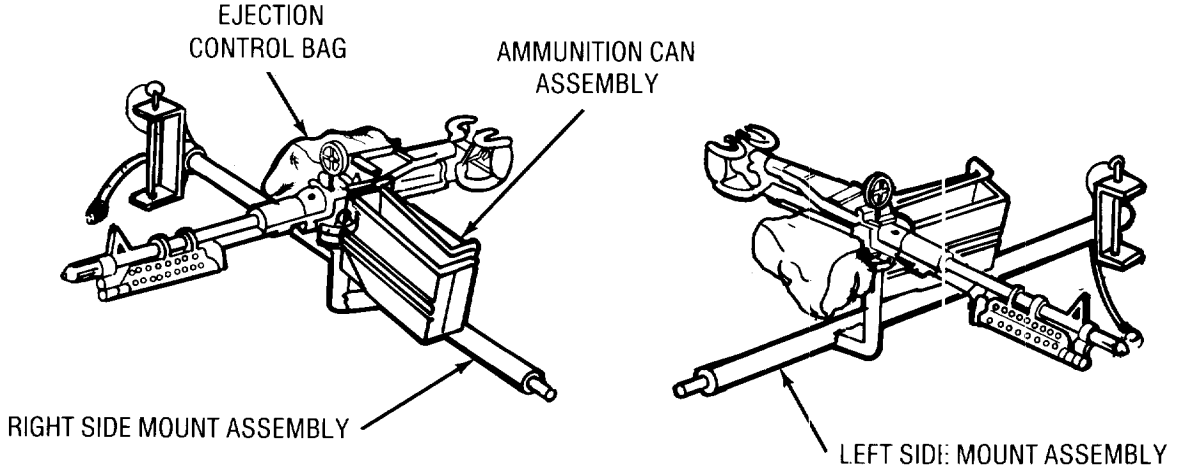
The M23 armament subsystem is bolted to the UH-1 series helicopter by the pintle mount. Ammunition is fed to the M60D from the ammunition box through the chute. Spent cartridges and belt links are caught by the ejection control bag. Movement of the M60D in use is limited by the post and pintle subassembly. The traversing lock keeps the M60D in proper stow position.



M23 Armament Subsystem

M24 RIGHT AND LEFT SIDE MOUNT ASSEMBLIES

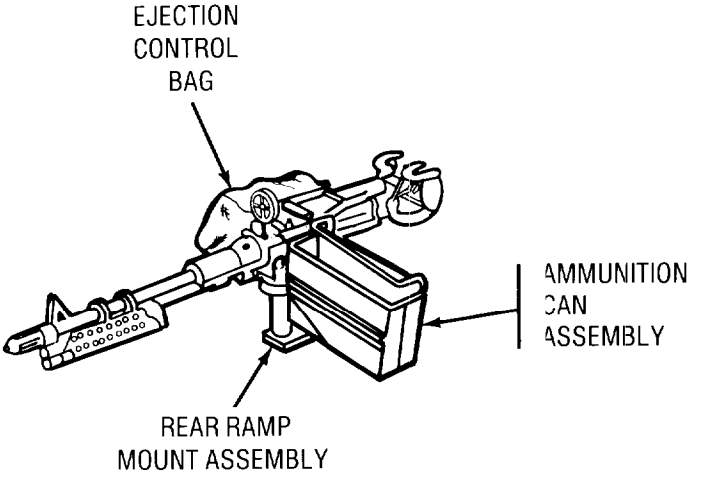
The M24 armament subsystem is pinned to the inside of the door frame of the CH-47 helicopter by the mount assemblies. Movement of the M60D is limited by the mount assemblies The shock cord assembly keeps the M60D in proper stow position.



M24 Armament Subsystem

M41 REAR RAMP MOUNT ASSEMBLY

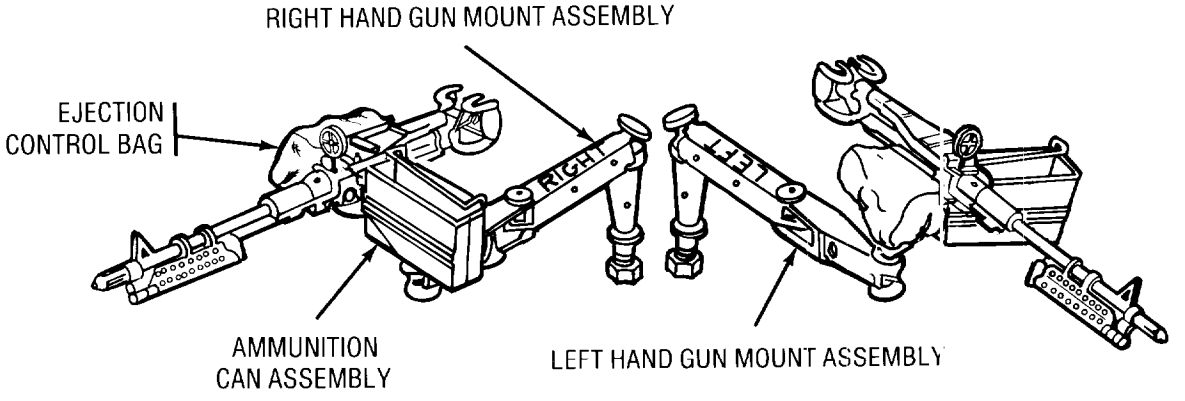
The M41 armament subsystem is pinned to the rear door of the CH-47 by the mount assembly. Movement of the M60D machine gun is limited in use by the mount assembly. The elastic cord assembly keeps the M60D in the proper stow position.



M41 Armament Subsystem

M144 RIGHT AND LEFT HAND GUN MOUNT ASSEMBLIES

The M144 armament subsystem is riveted to the UH-60A window frame by the mount assemblies. Movement of the M60D machine gun is limited in use by the mount assembly The mount assembly folds into a deployed or stowed position. The stow lock plunger keeps the M60D in the proper stow position.



M144 Armament Subsystem

CHAPTER 2
OPERATING INSTRUCTIONS

CHAPTER CONTENTS

Section I. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Section Contents

GENERAL

2-1. This section contains the procedures and instructions necessary to perform operator/crew preventive maintenance checks and services.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES

2-2. The following PMCS table lists the inspections and care of the equipment required to keep it in good operating condition. These inspections are arranged in logical sequence requiring a minimum amount of time and motion on the part of the persons performing them.

If anything looks wrong and you can't correct it yourself, write it down on your DA Form 2404. If you find something serious, notify aviation unit maintenance RIGHT NOW.

OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES

The item No. column lists the checks and services in order of performance. This column will be used as a source of item numbers for the TM Number column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording preventive maintenance checks and services.

The Interval column tells you when to do a certain check or service.

The Item To Check/Service column indicates the item to be checked and/or serviced.

The Procedure column tells you how to do required checks and services. Carefully follow these instructions. If you do not have tools or if the procedure tells you to, notify your supervisor.

NOTE

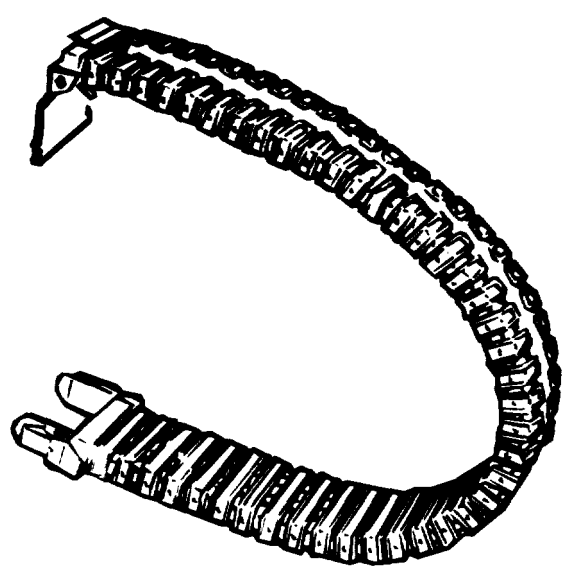
The term "Fully Mission Capable" refers to the status: Equipment is on hand and ready to perform its combat mission (see DA Pam 736-751).

The Not Fully Mission Capable If: column tells you when the test set is nonmission capable and why the test set cannot be used. If the test set does not perform as required, refer to Chapter 3, Section II, Troubleshooting.

PREVENTIVE MAINTENANCE CHECKS/SERVICES (PMCS)

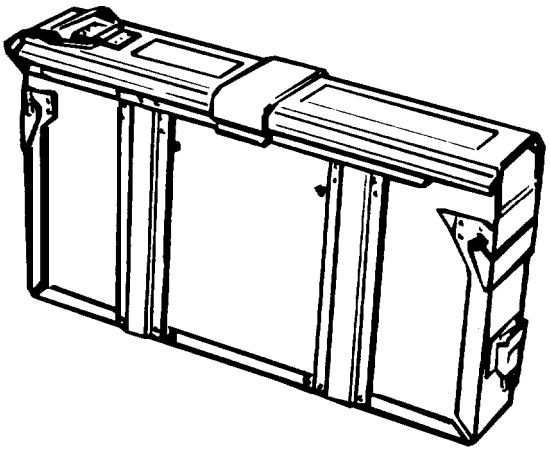
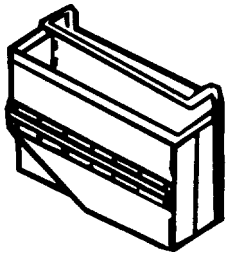
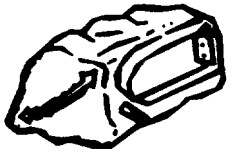
B - Before Operation D - During Operation A - After Operation

Item No.	Interval B	Interval D	Interval A	Location Item to Check/Service	Procedures	Not Fully Mission Capable If:
					WARNING Before performing functional preliminary checks and services on Armament Subsystems M23, M24, M41 and M144, check the M60D machine gun to make sure it is clear of ammunition.	
1	●	●	●	M60D Machine Gun	Refer to TM 9-1005-224-10 for applicable PMCS.	
2	●			Pintle Mount (M23) and Mount Assemblies (M24, M41, M144)	Elevate, depress, and move M60D machine gun in right and left deflection to assure proper movement of pintle in mount assemblies.	Gun will not move up or down or to either side. Pintle cracked or distorted.
3	●			Pintle Mount (M23) and Mount Assemblies (M24, M41, M144)	Check that mount assembly components are intact and secure.	Mount assembly cannot be secured.
4	●			Flexible Chute Assembly (M23 only)	Inspect ammunition chute links for deep dents, for damaged or missing ammunition chute adapters, and for inoperative latches or missing spring tabs. Notify aviation unit maintenance for repair.	Ammunition chute adapter missing. Chute links broken or dented. Latch does not work. Spring tabs missing.



PREVENTIVE MAINTENANCE CHECKS/SERVICES (PMCS) (Cont)

B - Before Operation D - During Operation A - After Operation

Item No.	Interval B	Interval D	Interval A	Location Item to Check/Service	Procedures	Not Fully Mission Capable If:
5	•			Ammunition Box and Cover Assembly (M23 only)	Inspect ammunition box for deep dents or distortion disrupting flow of ammunition. Notify aviation unit maintenance.	Ammunition box is bent on the side. Ammunition cover is warped.
						
6	•			Ammunition Can Assemblies (M24, M41, and M144)	Inspect for broken compression spring, damaged or bent holding plunger, or a deeply dented can disrupting flow of ammunition. Notify aviation unit maintenance for repair.	Compression spring is relaxed and will not compress. Plunger missing.
						
7	•			Ejection Control Bag (M23,M24, M41, and M144)	Inspect for torn fabric or seams. Check operation of safety latch and slide fasteners. Notify aviation unit maintenance for repair.	Safety latch will not lock. Slide fastener does not work.
						

Section II. OPERATION UNDER USUAL CONDITIONS

GENERAL

2-3. This section contains instructions for operation of the M23, M24, M41, and M144 armament subsystems under normal conditions of moderate temperature and humidity. Familiarize yourself with EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES, LOCATION AND DESCRIPTION OF MAJOR COMPONENTS, and EQUIPMENT DATA. Perform your Operator/Crew Preventive Maintenance Checks and Services provided earlier. To correct a deficiency, perform the applicable corrective action in the troubleshooting Fault Symptom Index.

LOADING AMMUNITION

This task contains instructions for loading a full complement of ammunition in the M23, M24, M41, and M144 armament subsystem. The procedure for loading ammunition in an M23 armament subsystem is different from loading the M24, M41, or M144. Perform only the steps applicable to your armament subsystem.

SECURING THE GUNNER

This task contains instructions, on all four armament subsystems, for securing the gunner in the helicopter.

FIRING, UNLOADING, AND STOWING THE WEAPON

This task contains instructions, on all four armament subsystems, for firing and unloading the 7.62 MM machine gun and for stowing the machine gun. The procedures are different among the four armament subsystems. Perform only the steps applicable to your armament subsystem.

2-4. LOADING AMMUNITION

DESCRIPTION

This task covers: Loading procedures for a full complement of ammunition.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, Aircraft Armament Repairman: MOS 45J, Supplemental

Personnel Required:
Ground Crew

Reference
TM 9-1005-224-10

Equipment Condition:
Helicopter positioned in designated arming/safing area.

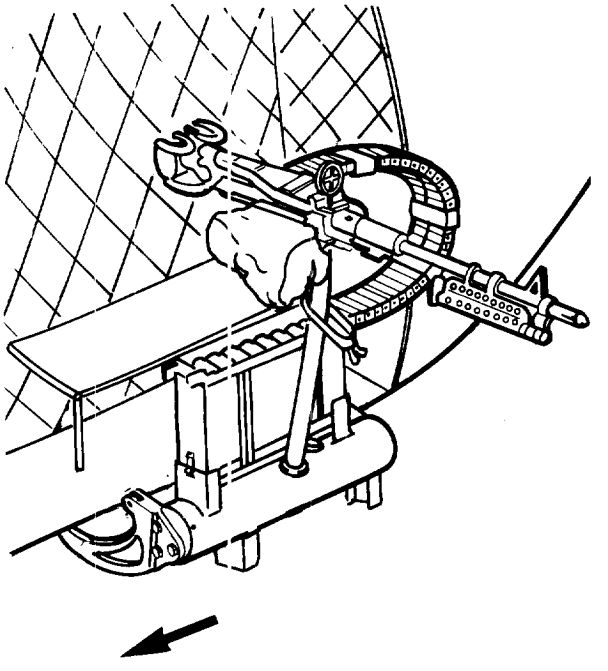
General Safety Instructions:
Observe all precautions governing care and handling of live ammunition.

LOADING THE M23 ARMAMENT SUBSYSTEM

1. LOAD 550 ROUNDS OF LINKED AMMUNITION INTO AMMUNITION BOX AND COVER ASSEMBLY AND THREAD THROUGH THE FLEXIBLE CHUTE ASSEMBLY.

   a. Follow loading instructions decal to load linked ammunition into the ammunition box and cover assembly.

   b. Thread linked ammunition up through the flexible chute assembly.



WARNING

After completion of step 2, weapon is ready to fire. Check that safety is pressed to SAFE.

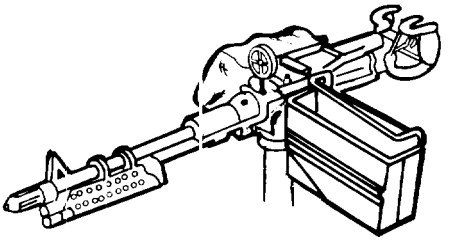
2. REFER TO M60D MACHINE GUN MANUAL, TM 9-1005-224-10, TO FINISH LOADING THE M23 ARMAMENT SUBSYSTEM.

LOADING THE M24, M41, OR M144 ARMAMENT SUBSYSTEM

3. LOAD AN AMMUNITION CONTAINER CONTAINING 200 LINKED ROUNDS INTO EACH AMMUNITION CAN ASSEMBLY.

WARNING

After completion of step 4, weapon is ready to fire. Check that safety is pressed to SAFE.



4. REFER TO M60D MACHINE GUN MANUAL, TM 9-1005-224-10, TO FINISH LOADING THE M24, M41 OR M144 ARMAMENT SUBSYSTEM.

END OF TASK

2-5. SECURING THE GUNNER

DESCRIPTION

This task covers: Securing the gunner.

INITIAL SETUP

Tools/Test and Support Equipment:
None

Materials:
None

Reference
TM 55-1520-237-10

Personnel Required:
Crew

Equipment Condition:
Helicopter positioned in designated test firing area or in combat.

SECURING THE GUNNER IN THE M23, M24, OR M41 ARMAMENT SUBSYSTEMS

1. PRIOR TO FIRING THE WEAPON, PUT ON THE GUNNER'S AIRCRAFT SAFETY SHOULDER HARNESS OR VEST.

   a. If harness configuration:

      (1) Slip the harness over shoulders and the waist belt around waist. Place the crotch straps between legs, and place crotch strap loops over waist belt tongue and fasten.

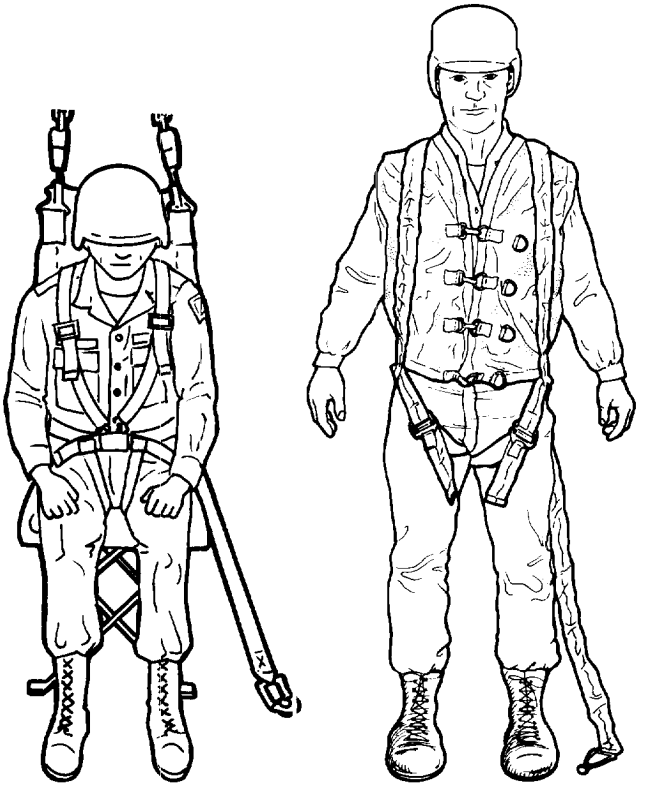
      (2) Adjust the safety strap to desired length. Fold and secure any excess length with electrical tape.

      (3) Fasten safety strap snap hook to one of the tie-down rings located under the gunner's seat on the deck of the helicopter.

   b. If mesh vest configuration:

      (1) Step into crotch strap loops and slip into vest. Buckle vest and tighten crotch straps.

      (2) Fasten safety strap snap hook to one of the tie-down rings located under the gunner's seat on the deck of the helicopter.



SHOULDER HARNESS MESH VEST

SECURING THE GUNNER IN THE M144 ARMAMENT SUBSYSTEM

2. PRIOR TO FIRING THE WEAPON, FASTEN SEAT BELT SHOULDER AND WAIST HARNESS.

Refer to UH-60A helicopter operator's manual, TM 55-1520-237-10.

END OF TASK

2-6. FIRING, UNLOADING, AND STOWING THE WEAPON

DESCRIPTION

This task covers: Firing, unloading, and stowing the weapon.

INITIAL SETUP

Tools/Test and Support Equipment:
None

Materials:
None

Reference
TM 9-1005-224-10

Personnel Required:
Crew

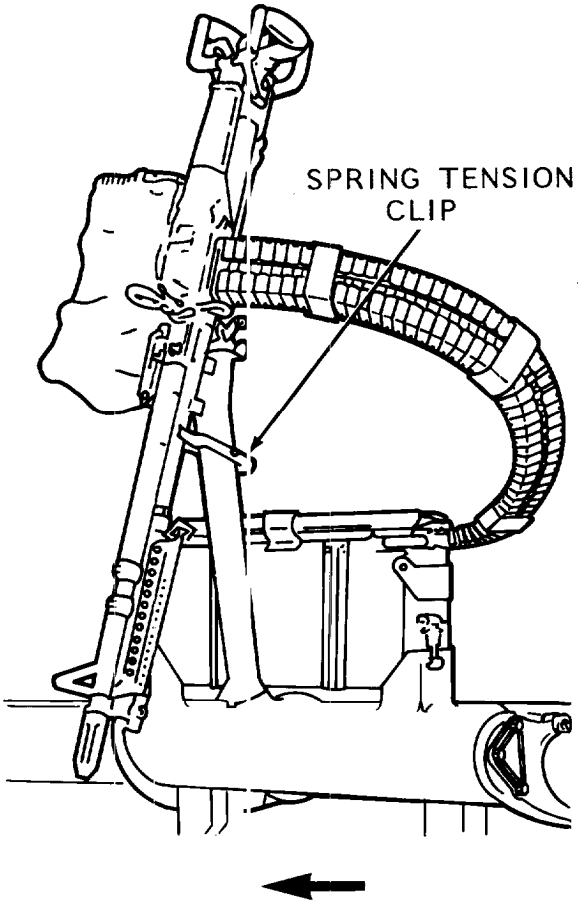
Equipment Condition:
Helicopter positioned in designated test firing area or in combat.

FIRE AND UNLOAD THE MACHINE GUN

1. Refer to the M60D machine gun manual TM 9-1005-224-10, for firing and unloading instructions. Immediate action and/or remedial action procedures are also included in case a runaway, misfire, possible cookoff, or a stuck cartridge case should occur.

STOW THE MACHINE GUN

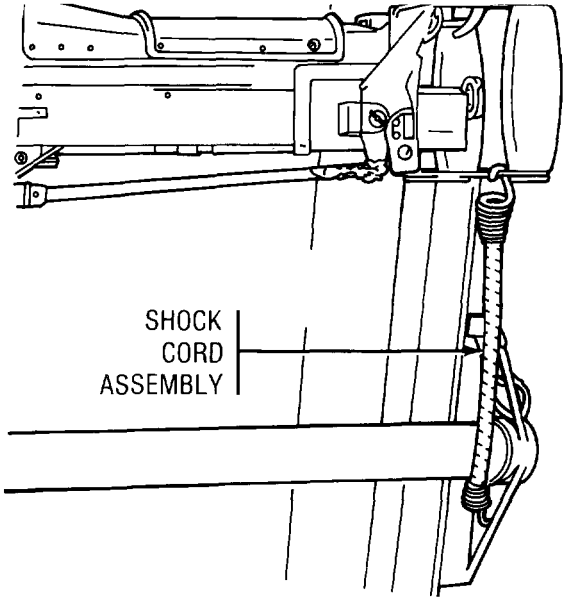
2. On the M23 armament subsystem, position the gun barrel into the spring tension clip.



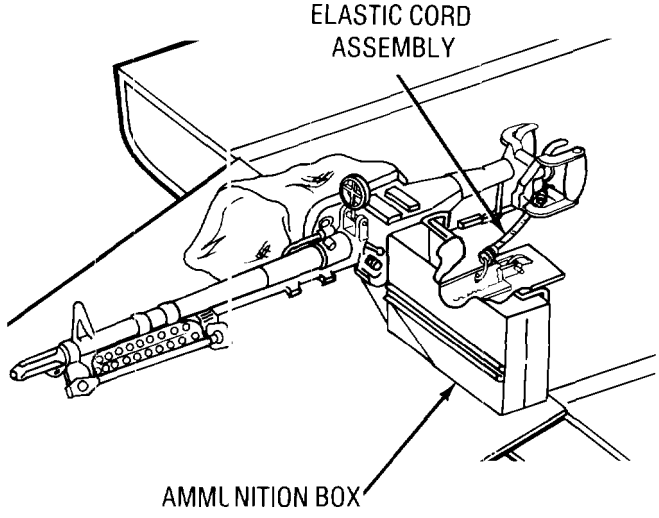
M23 Armament Subsystem
Machine Gun Stowed

STOW THE MACHINE GUN (cont)

3. On the M24 or M41 armament subsystems, fasten the cord assemblies to the grip and trigger assembly of the 7.62 MM machine gun.



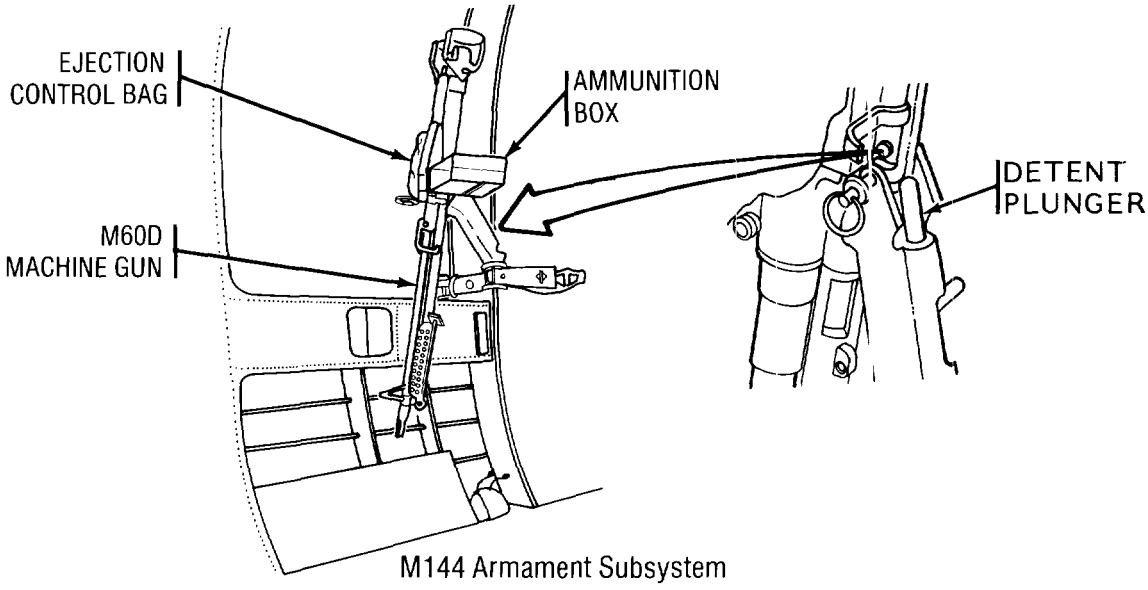
M24 Armament
Subsystem Stowed



M41 Armament
Subsystem Stowed

NOTE: TOP OF AMMUNITION BOX NOT SHOWN FOR CLARITY

4. On the M144 armament subsystem, position weapon muzzle down until it is locked in position by a spring operated detent plunger.



M144 Armament Subsystem
Stowed (Right Side)

END OF TASK

Section III. OPERATION UNDER UNUSUAL CONDITIONS

PROTECTIVE MEASURES FOR UNUSUAL CONDITIONS

2-7. The following instructions should be followed when operating the equipment under unusual conditions.

In extremely cold climate, lubricate armament mount assemblies according to instructions in para 3-2. Keep armament mount assemblies free of moisture.

In hot, wet climate, lubricate and inspect more frequently. Lubricate M144 armament subsystem using solid film lubricant (item 4, app D) only. Keep armament mount assemblies dry.

In hot, dusty and sandy areas, inspect and clean more frequently. Cover mount assemblies as much as possible and keep sand out of moving parts.

CHAPTER 3

OPERATOR/CREW MAINTENANCE INSTRUCTIONS

CHAPTER CONTENTS

Section I. LUBRICATION INSTRUCTIONS

GENERAL

3-1. This section lists lubrication instructions for armament subsystems M23, M24, M41, and M144 to be performed by operator/crew personnel. Under normal operation, lubrication will be performed monthly. Reduce this period to compensate for abnormal operation, severe conditions or contaminated lubricants. During inactive periods, intervals may be extended commensurate with adequate preservation.

3-2. LUBRICATION INSTRUCTIONS

DESCRIPTION

This task covers: Lubrication.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, Aircraft Armament
Repairman: MOS 45J, Supplemental

Materials:
Gloves, Protective (Item 2, App D)
Grease, Aircraft (item 3, App D)
Lubricant, Solid Film (Item 4, App D)
Oil, Lubricating (LSA) (Item 5, App D)
Solvent, Mineral Spirits (Item 8, App D)

Personnel Required:
Ground crew

Equipment Condition:
Helicopter located in maintenance area. Machine gun removed.

LUBRICATION

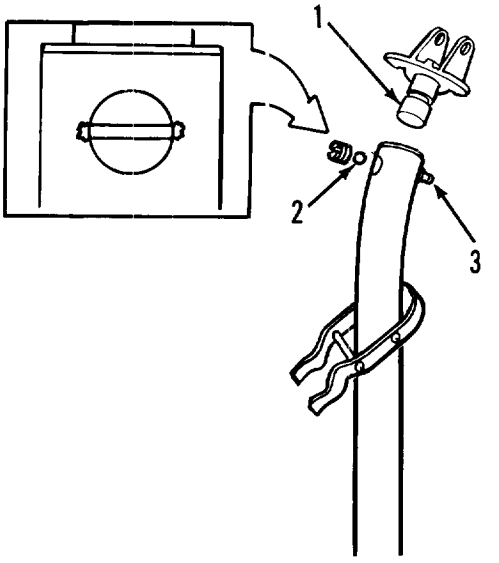
1. M23 ARMAMENT SUBSYSTEM.

a. Remove pintle pivot (1) and ball bearings (2), para 4-18 step 2.

WARNING

Do not use cleaning solvents near an open flame. Fire extinguishers must be available when these materials are used. Use only in well-ventilated areas.

Cleaning solvents evaporate quickly and have a drying effect on the skin. Protective gloves will be worn to avoid cracks in the skin, and in some cases mild irritation or inflammation of the skin.



b. Clean pintle pivot (1) and ball bearings (2) with mineral spirit solvent and dry. Wear protective gloves.

c. Lubricate pintle pivot (1) and ball bearings (2) with lubricating oil.

d. Install pintle pivot (1) and ball bearings (2), para 4-18 step 6.

e. Grease bearings (2) through fitting (3).

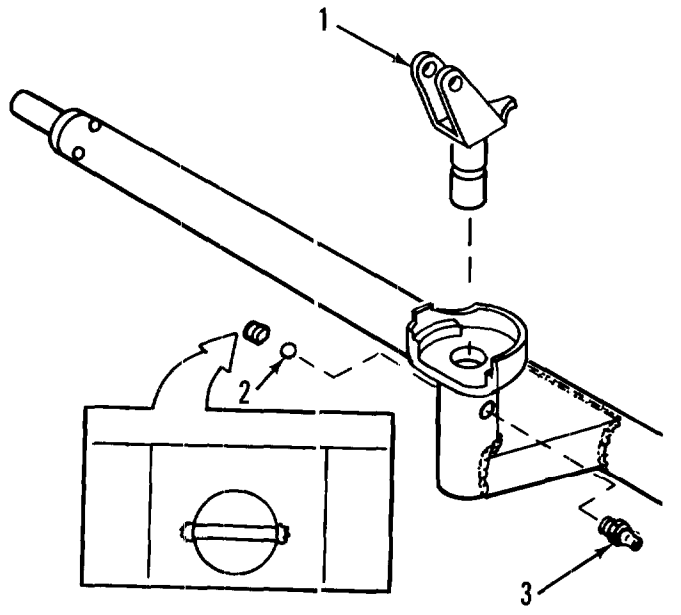
2. M24 ARMAMENT SUBSYSTEM.

a. Remove pintle(1) and ball bearings (2), para 4-24 step 1.

WARNING

Do not use cleaning solvents near an open flame. Fire extinguishers must be available when these materials are used. Use only in well-ventilated areas.

Cleaning solvents evaporate quickly and have a drying effect on the skin. Protective gloves will be worn to avoid cracks in the skin, and in some cases mild irritation or inflammation of the skin



b. Clean pintle (1) and ball bearings (2) with mineral spirit solvent and dry. Wear protective gloves.

c. Lubricate pintle (1) and ball bearings (2) with lubricating oil.

d. Install pintle (1) and ball bearings (2), para 4-24 step 7.

e. Grease bearings (2) through fitting (3).

3. M41 ARMAMENT SUBSYSTEM.

NOTE

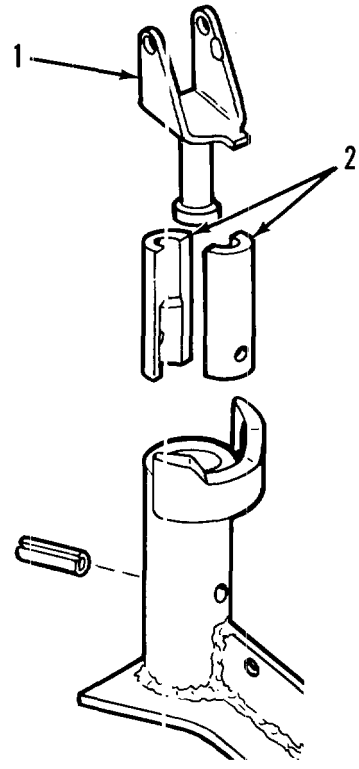
Sleeve bearings must be replaced in the same position or restriction of pintle movement may occur.

a. Remove pintle (1) and sleeve bearings (2), para 4-27 step 1.

WARNING

Do not use cleaning solvents near an open flame. Fire extinguishers must be available when these materials are used. Use only in well-ventilated areas.

Cleaning solvents evaporate quickly and have a drying effect on the skin. Protective gloves will be worn to avoid cracks in the skin, and in some cases mild irritation or inflammation of the skin.



b. Clean pintle (1) and sleeve bearings (2) with mineral spirit solvent and dry. Wear protective gloves.

c. Lubricate pintle (1) and sleeve bearings (2) with lubricating oil.

d. Install pintle (1) and sleeve bearings (2), para 4-27 step 6.

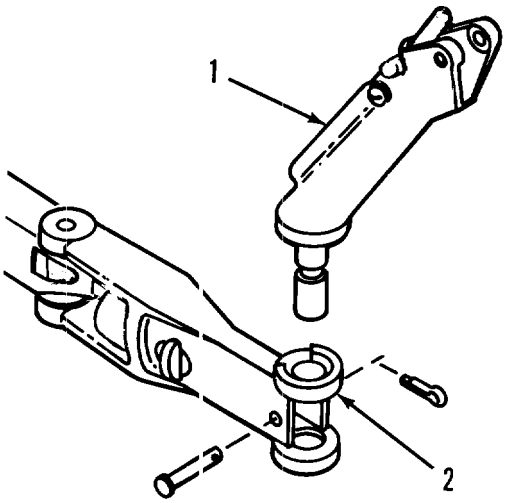
4. M144 ARMAMENT SUBSYSTEM.

a. Remove pintle (1) from release arm (2), para 4-29 step 1.

WARNING

Do not use cleaning solvents near an open flame. Fire extinguishers must be available when these materials are used. Use only in well-ventilated areas.

Cleaning solvents evaporate quickly and have a drying effect on the skin. Protective gloves will be worn to avoid cracks in the skin, and in some cases mild irritation or inflammation of the skin.



b. Clean pintle (1) and bearing surfaces of release arm (2) with mineral spirit solvent and dry. Wear protective gloves.

c. Lubricate pintle (1) and bearing surfaces of release arm (2) with solid film lubricant.

d. Install pintle (1) into release arm (2), para 4-29 step 9.

END OF TASK

Section II. TROUBLESHOOTING PROCEDURES

GENERAL

3-3. Troubleshooting instructions are provided as an aid in isolating and correcting malfunctions.

The more common and/or representive faults are covered in this section. This manual provides many tools to aid the technician in isolating and correcting faults.

FAULT SYMPTOM INDEX

The fault symptom index lists the common malfunctions the technician may find during operation of the M23, M24, M41, or M144 armament subsystem. The index lists the fault symptom, then lists the recommended action or actions to be taken for the symptom, and finally references the place where the action may be found. As the technician, you may consult the index directly when you are confident that you have defined the fault symptoms correctly. Then scan the list for the fault symptoms and proceed with the recommended actions until all the fault symptoms have been corrected.

3-4. FAULT SYMPTOM INDEX

Fault Symptom	Action	Reference
M23, M24, M41 , AND M144 ARMAMENT SUBSYSTEMS		
1. Machine gun does not move freely in elevation, depression, or deflection.	1. Check for dirty, rusty, damaged pintle or bearings. Perform CLEANING or notify AVUM maintenance if damaged. 2. Check for loose parts or missing components. Tighten loose parts or notify AVUM maintenance if components are missing.	Para 4-11

Fault Symptom	Action	Reference
FLEXIBLE CHUTE ASSEMBLY (M23 ARMAMENT SUBSYSTEM ONLY)		
2. Ammunition binds in chute and does not feed properly.	Inspect chute for twists, dents, or missing parts. Notify AVUM maintenance for repair.	
AMMUNITION BOX AND AMMUNITION COVER ASSEMBLY (M23 ARMAMENT SUBSYSTEM ONLY)		
3. Ammunition binds in box and does not feed properly.	Check for deep bends or dents in ammunition box. Notify AVUM for repair or replacement.	
AMMUNITION CAN ASSEMBLY (M24, M41 , AND M144 ARMAMENT SUBSYSTEMS)		
4. Ammunition binds in can and does not feed properly.	Check for deep bends or dents in ammunition can. Notify AVUM for repair or replacement.	
EJECTION CONTROL BAGS (M23, M24, M41 , AND M144 ARMAMENT SUBSYSTEMS)		
5. Spent cartridges and belt links fall out of ejection control bag.	Check bag for rips and tears. Notify AVUM maintenance for repair or replacement.	
M60D MACHINE GUN (M23, M24, M41 , AND M144 ARMAMENT SUBSYSTEMS)		
6. Machine gun does not fire or does not operate properly.	Refer to M60D machine gun maintenance manual TM 9-1005-224-10, for troubleshooting instructions.	

Section III. MAINTENANCE PROCEDURES

GENERAL

3-3. There are no authorized operator/crew maintenance instructions other than OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES, para 2-2, LUBRICATION INSTRUCTIONS, and FAULT SYMPTOM INDEX.

CHAPTER 4

AVIATION UNIT MAINTENANCE INSTRUCTIONS

CHAPTER CONTENTS

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

COMMON TOOLS AND EQUIPMENT

4-1. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

4-2. Special tools are not required.

REPAIR PARTS

4-3. Repair parts are listed and illustrated in the repair parts and special tools list TM 9-1005-262-23P covering aviation unit maintenance for this equipment.

Section II. SERVICE UPON RECEIPT

GENERAL

4-4. When a new or reconditioned armament subsystem is received, the using organization must determine that the subsystem is complete; that the subsystem has been properly prepared for service by the preparing activity; and if the subsystem is capable of performing its mission.

INSPECTION

4-5. When unpacking the equipment, perform the following inspections.

1. Inspect the armament subsystem for damage incurred during shipment. If the equipment has been damaged, report the damage on SF Form 364, Report of Discrepancy (ROD).

2. Check the armament subsystem against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions in DA PAM 738-751.

3. Check to see if the equipment has been modified.

4. Check to see if all MWO's have been applied.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

GENERAL

4-6. This section contains procedures for systematic care, inspection and service of the armament subsystems to maintain them in serviceable condition and to detect faults and malfunctions early preventing extensive and costly repair.

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS

4-7. Consumable supplies and materials are listed in Appendix D in alphabetical order. Each consumable has an item number assigned for ease of location and reference. When an item number is unknown you may locate any consumable used in this manual through its alphabetical arrangement. Consumables are referenced in the narrative by name and item number e.g., grease, aircraft (item 3, App D).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

4-8. Preventive maintenance checks and services performed by aviation unit personnel on the armament subsystem are either routine or time-dependent. The schedule prescribed for each check or service will be considered the minimum requirement for operation of the subsystem under usual conditions. Unusual operating conditions, such as extreme temperatures, dust or sand, moist or salty atmosphere, and rain and snow, require more frequent checks and services.

TIME-DEPENDENT CHECKS AND SERVICES

Time-dependent checks and services consist primarily of inspection checks to make certain that the armament subsystem is in an operational condition. These checks and services will normally be performed “before” or “after” operation or after 25 flying hours.

ROUTINE PROCEDURES

Inspection checks will be made to determine if items are in good condition, correctly assembled or stored, secured, not excessively worn, and adequately lubricated. Any or all of these checks that are pertinent to any item (including supporting, attaching, or connecting members) will be performed automatically as routine procedures in addition to any specific procedures given.

Good Condition. Inspection for “good condition” is usually a visual inspection to determine that the unit is not damaged beyond a safe or serviceable condition. Good condition means that a component or part is not bent or twisted, chafed or burred, bare or frayed, dented or collapsed, torn or cut, or deteriorated.

Correct Assembly. Inspection of an item to see if it is correctly assembled or stowed is usually a visual inspection to determine that the item is in its normal position and that all of its parts are present and in their correct relative positions.

Secure Mounting. Inspection of an item to determine if it is secure is usually a visual examination or a check by hand or wrench, for looseness. Such an inspection must include any brackets, locknuts, lockwire, and cotter pins as well as any connecting cables and wires.

Excessively Worn. This means worn beyond serviceable limits or to the point likely to result in failure if the item is not replaced before the next scheduled inspection. Refer to the pertinent sections in this chapter for parts inspection data. It also includes illegible markings, data, identification plates, and printed matter.

Tighten. When the instruction “tighten” appears in a procedure, it means tighten with the appropriate tool (wrench, screwdriver, etc.), even though the item appears to be secure.

SPECIFIC PROCEDURES

Specific time-dependent preventive maintenance checks and services to be performed are listed in the following tabulated data.

AVUM PREVENTIVE MAINTENANCE CHECKS AND SERVICES

The Item No. column specifies the logical order of performance. This column will be used as a source of item numbers for the TM Number column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording preventive maintenance checks and services.

The Interval column designates the intervals at which the procedures are to be performed. B means before, D means during operation, A means after operation, and H means helicopter operating hours. The dots indicate the items to be inspected and the procedure to be performed.

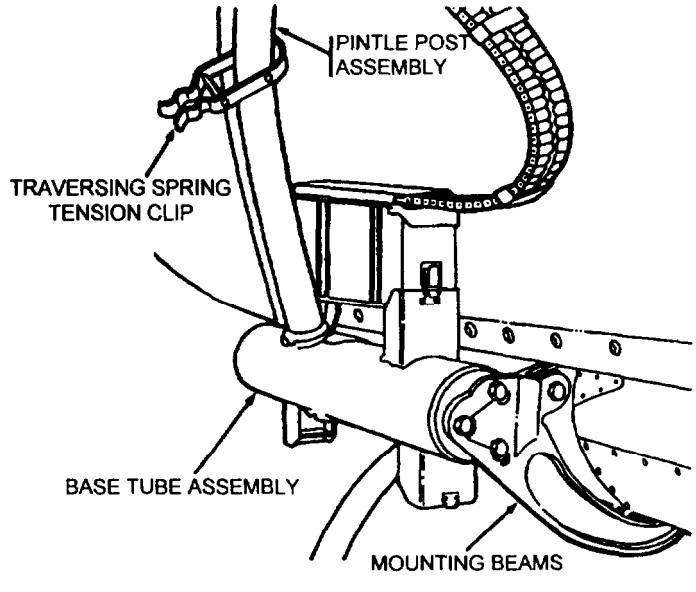
The Item To Be Inspected column lists the items that require periodic checks and services.

The Procedure column describes the maintenance checks and services to be performed.

PREVENTIVE MAINTENANCE CHECKS/SERVICES (PMCS)

B - Before Operation D - During Operation A - After Operation H - 25 Flying Hours

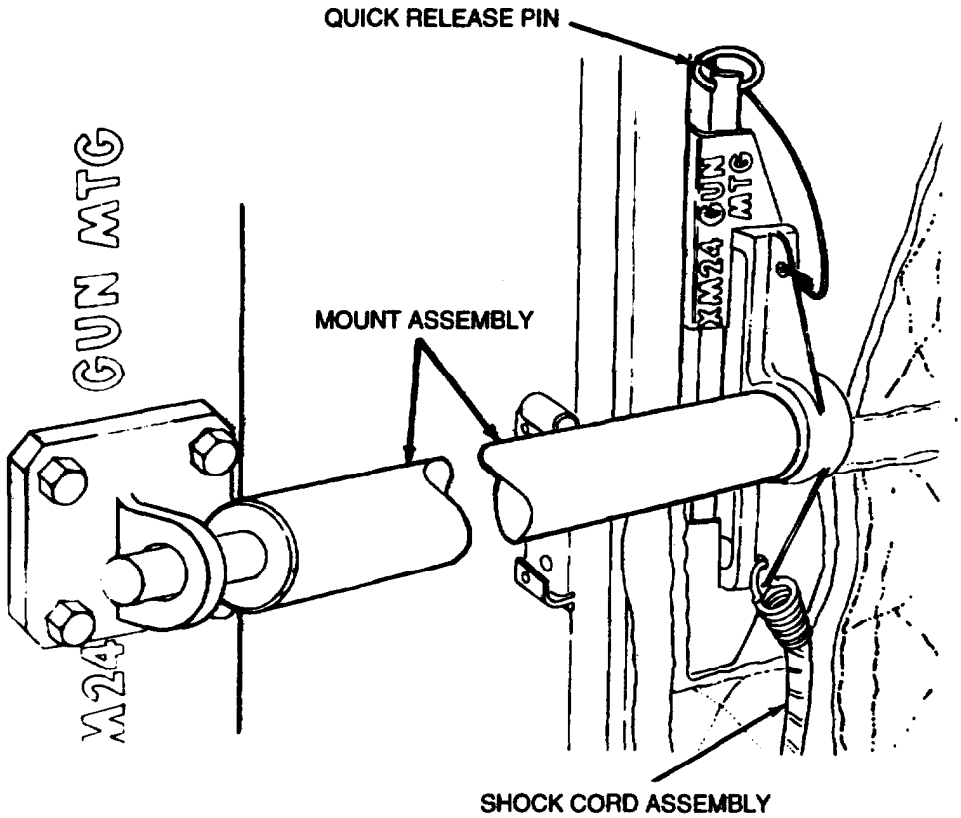
Item No.	Interval B	D	A	H	Location Item to Check/Service	Procedures	Not Fully Mission Capable If:
						WARNING Before performing functional preliminary checks and services on Armament Subsystems M23, M24, M41 and M144, check the M60D machine gun to make sure it is clear of ammunition.	
1	●	●	●		M160D Machine Gun	Refer to TM 9-1005-224-24 for applicable PMCS.	
2	●				Pintle Mount (M23 and Mount Assemblies (M24, M41, M144)	Check that pintle mount and mount assemblies are securely attached to helicopter. Tighten as required.	Pintle or mount assemblies not properly secured. Quick release pin missing.
3					M23 Pintle Mount	Check that pintle post assembly is secure in base tube assembly. Tighten as required.	Pintle post assembly nut missing or will not screw onto post.
4				●	M23 Pintle Mount	Inspect mounting beams, base tube assembly, and pintle post assembly for cracks and distortion. Repair or replace as necessary.	Forward or aft beams bend. Base tube assembly or pintle cracked.
5				●	M23 Pintle Mount	Check traversing spring tension clip for proper action in stowing machine gun. Repair or replace as necessary.	Traversing lock bent or missing. Spring tension relaxed.



PREVENTIVE MAINTENANCE CHECKS/SERVICES (PMCS) (Cont)

B - Before Operation D - During Operation A - After Operation H - 25 Flying Hours

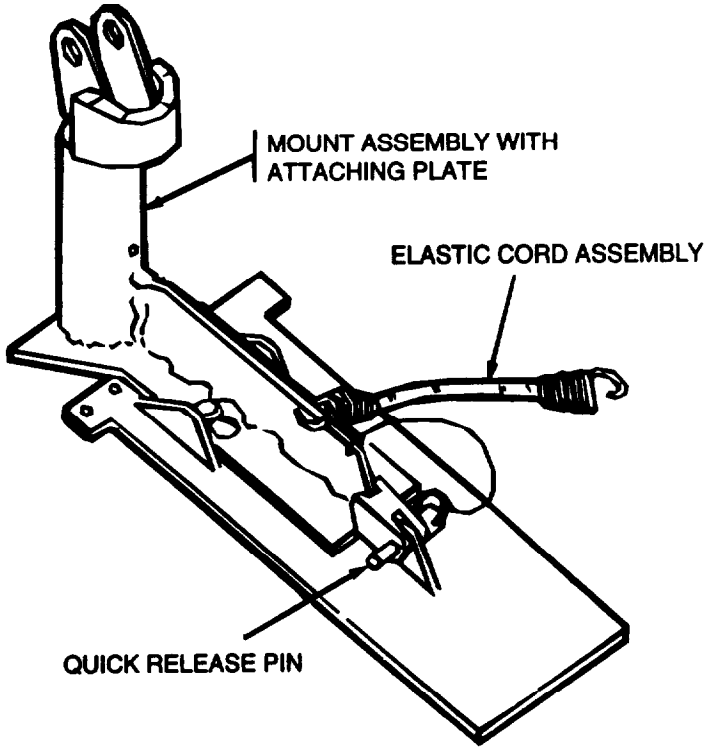
Item No.	Interval				Location Item to Check/Service	Procedures	Not Fully Mission Capable If:
	B	D	A	H			
6				•	M24 Left Side and Right Side Mount Assembly	Inspect mount assembly and bracket for cracks and distortion. Repair or replace as necessary.	Mounting pin on cross member bent. Mount assembly cracked, Bracket bend or cracked.
7				•	M24 Left Side and Right Side Mount Assembly	Check quick release pin and shock cord assembly for secure attachment on cabin doorway on right side and on escape hatch on left side. Repair as necessary.	Quick release pin bent or shock cord missing.



PREVENTIVE MAINTENANCE CHECKS/SERVICES (PMCS) (Cont)

B - Before Operation D - During Operation A - After Operation H - 25 Flying Hours

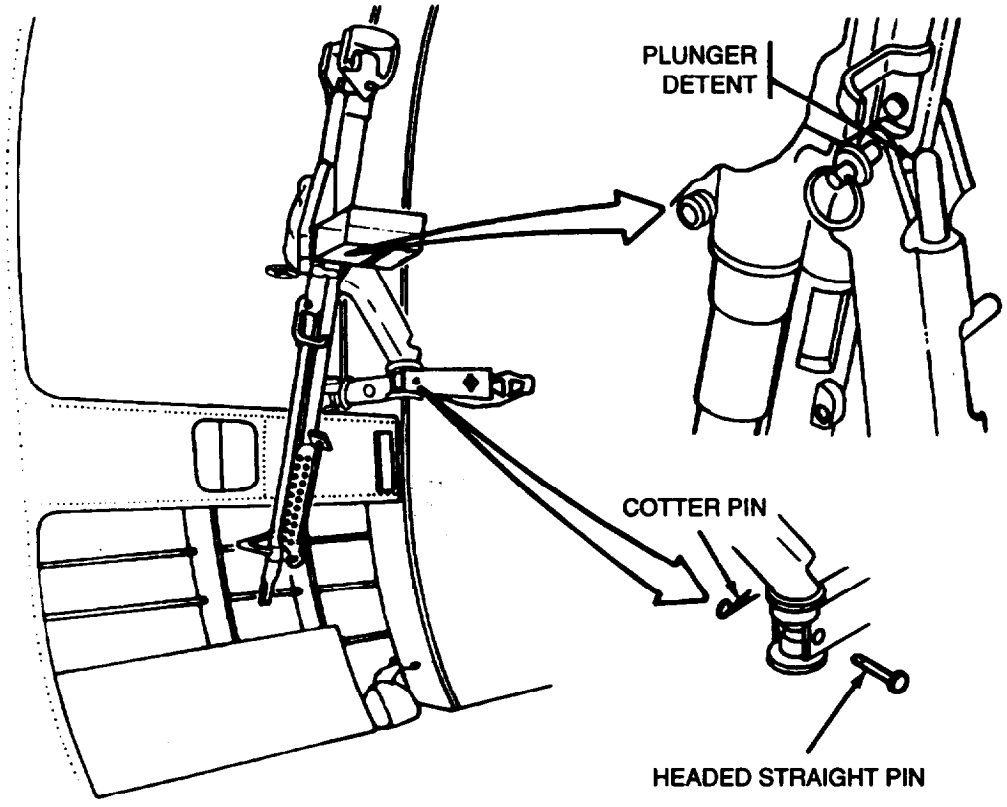
Item No.	Interval				Location Item to Check/Service	Procedures	Not Fully Mission Capable If:
	B	D	A	H			
8				●	M41 Rear Ramp Mount Assembly	Inspect mount assembly with attaching plate for distortion and cracks. Replace as required.	Mount assembly cracked. Pintle is bent. Plate locking pin bent or missing.
9				●	M41 Rear Ramp Mount Assembly	Check quick release pin and elastic cord assembly for secure attachment to mount assembly. Repair as necessary.	Quick release pin missing. Cord assembly will not secure to gun or missing.



PREVENTIVE MAINTENANCE CHECKS/SERVICES (PMCS) (Cont)

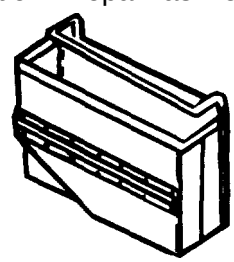
B - Before Operation D - During Operation A - After Operation H - 25 Flying Hours

Item No.	Interval				Location Item to Check/Service	Procedures	Not Fully Mission Capable If:
	B	D	A	H			
10				●	M144 Right Hand and Left Hand Gun Mount. Assembly	Check that detent holds weapon in muzzle down stowed position. Repair as necessary.	Detent will not release. Detent plunger bent and will not hold weapon.
11	●				M144 Right Hand and Left Hand Gun Mount Assembly	Check cotter pin and headed straight pin securing mount pintle to release arm assembly for wear or breakage. Replace as required.	Headed pin bent or missing. Cotter pin missing.



PREVENTIVE MAINTENANCE CHECKS/SERVICES (PMCS) (Cont)

B - Before Operation D - During Operation A - After Operation H - 25 Flying Hours

Item No.	Interval				Location Item to Check/Service	Procedures	Not Fully Mission Capable If:
	B	D	A	H			
12	●			●	Ejection Control Bag (M23, M24, M41, M144)	Check frame for distortion, bag for tears or torn seams, and check that slide fastener works and latch holds securely. Repair as necessary. 	Frame is bent, slide fastener does not work and safety latch will not lock.
13	●			●	Ammunition Can Assemblies (M24, M44, M144)	Check for loose solid rivets, distortion, proper compression spring tension, and plunger holding operation. Repair as necessary. 	Rivets are loose, plunger is sticking and compression spring is relaxed and will not compress.

Section IV. GENERAL MAINTENANCE INSTRUCTIONS

Section Contents	Para
Scope	4-9
Preparation	4-10
Cleaning	4-11
Inspection	4-12
Repair	4-13

SCOPE

4-9. This section contains selected general preparation, cleaning, inspection, and repair information and instructions for aviation unit maintenance personnel. For complete general maintenance instructions, refer to TM 55-1500-204-25/1.

PREPARATION

4-10. The steps and precautions that must be followed to prepare the armament subsystems for maintenance are provided in the following paragraphs.

PERSONNEL SAFETY

Proper care will be exercised when handling the armament subsystems, and their components and parts. Personnel should remove wrist watches, rings, identification bracelets, etc. Safety glasses (goggles) will be worn to protect the eyes. Hearing protection devices will be worn in high noise level areas.

EQUIPMENT

Obtain the proper equipment before beginning maintenance. This equipment includes hand tools, support equipment, receptacles for small parts, work tables, consumable materials, and wiping cloths. Refer to Section I for common tools, TMDE, support equipment, and repair parts.

HANDLING TECHNIQUES

Avoid damage to parts and components when performing any maintenance task. Damage caused by careless handling can cause improper functioning. Repair or replace all defective parts.

TORQUING

If torquing is required, the torque requirements are indicated in the task relating to the specific part.

CLEANING

4-11. General cleaning procedures are provided in the following paragraphs. Special cleaning procedures are covered in the task relating to the specific part.

GENERAL CLEANING WARNINGS AND CAUTIONS

WARNING

Do not use cleaning solvents near an open flame. Fire extinguishers will be available when these materials are used. Use only in well-ventilated areas.

WARNING

Cleaning solvents evaporate quickly and have a drying effect on the skin. Protective gloves will be worn to avoid cracks in the skin, and in some cases mild Irritation or Inflammation of the skin.

WARNING

Use and disposal of flammable and toxic materials will be in accordance with applicable regulations.

WARNING

Do not breathe fumes from the vapor degreaser. Fumes are toxic. Use only in well-ventilated areas.

*U.S. GOVERNMENT PRINTING OFFICE: 1997. S45-039/40108

CAUTION

Petroleum based solvents or vapor degreasers will not be used to clean any parts other than those specified herein. These solvents may cause damage to paint, plastics, and rubber.

CAUTION

Components that contain bearings will not be cleaned by immersion.

GENERAL CLEANING INSTRUCTIONS

Be careful when performing any cleaning procedure. Dirt can damage parts and cause malfunctions. Observe the following instructions when performing cleaning.

1. Clean all parts before inspection, after repair, and before assembly.

2. Keep hands free of grease; grease collects dirt.

3. Never use abrasives, files, scrapers, wire brushes, or sharp tools on surfaces where the finish is important to the operation or sealing of parts.

4. Gloves will be worn when handling clean polished parts.

NOTE

Cleaning materials are not lubricants. Parts requiring lubrication will be dried and lubricated after cleaning.

5. Clean polished parts will be lubricated immediately after cleaning to prevent rusting.

6. Cover and wrap parts after cleaning to protect them from dirt.

7. Clean and lubricate new bearings. Bearings that have been in service should be relubricated. Bearings require special cleaning techniques. Refer to TM 9-214 for cleaning, lubrication, and maintenance procedures for ball bearings.

8. Use mineral spirit solvent (item 8, App D) to clean or remove grease and oil from all metal parts, except those exposed to powder residue. This solvent does not readily dissolve corrosive salts from powder and primer compositions.

9. Scrub surfaces subjected to powder residue with a non-metallic, bristle brush saturated with cleaning compound (item 1, App D) prior to cleaning with mineral spirit solvent (item 8, App D).

10. Remove corrosion from all portions of the part. Use of crocus cloth, bristle brush, vapor blast equipment or cleaning compound (item 1, appendix D), is recommended.

11. When authorized to install new parts, remove any preservative materials such as rust-preventive compound or grease. Materiel received in maintenance shops from storage will be cleaned by one of the following methods described, as applicable or available. Lubricate parts requiring lubrication in accordance with LUBRICATION INSTRUCTIONS, para 3-2.

WARNING

Do not use solvents near an open flame. Fire extinguishers must be available when these materials are used. Use only in well-ventilated areas.

CAUTION

Degreasing compound and degreasing temperatures can damage rubber or plastic parts of the subsystem. Do not attempt to degrease rubber or plastic parts or metal parts which do not need degreasing.

Dip-Tank Method. Disassemble as required. Put parts in a perforated metal basket and submerge and agitate in dry cleaning solvent (SD) or mineral spirits paint thinner (TPM). Repeat using clean solvent or thinner. Amount of treatment will depend on how preservatives dissolve.

WARNING

Do not breathe fumes from the vapor degreaser. Fumes are toxic. Use only in well-ventilated areas.

Vapor-Degreaser Method. Vapor-degreaser tanks contain a heated solution of trichloroethylene or perchloroethylene (type II). This method is used on very greasy or oily parts which are not rapidly cleaned in a dip-tank. Place parts in a perforated metal basket. Submerge and keep basket just below the vapors in the tank until grease or oil melts and runs off.

INSPECTION

4-12. General inspection procedures are provided in the following paragraphs.

USE OF THE INSPECTION PENETRANT KIT

1. Clean surface area to be inspected thoroughly with mineral spirit solvent (item 8, App D). A substitute cleaner such as lacquer thinner is acceptable.

NOTE

Do not apply penetrant until cleaning solvent has evaporated completely from surface and flaws. Remove paint from area to receive penetrant.

2. Apply penetrant to the clean, dry surface. Allow a minimum 5 minute penetration time. Increase penetration time if temperature is below 60 degrees Fahrenheit. Do not apply to surfaces too hot to hold in hand.
3. Spray remover lightly over area covered with penetrant. Avoid overspraying which might dilute or remove flaw-trapped penetrant. Wipe clean with lint-free rag or paper toweling. Allow any remaining remover to evaporate naturally, or with the aid of warm gentle air currents. Under no condition soak parts in remover.

4. Before applying developer, shake can until agitator rattles freely each time used. Spray developer in a thin, even coating on the dry surface. Red marks indicate flaws; some may appear the instant the developer dries. Allow developer to remain on surface at least 5 minutes before making final interpretation of inspection results.

BEARINGS

Inspect bearings. Refer to TM 9-214 for inspection procedures for ball bearings.

BEARING RETAINERS

Inspect bearing retainers for wear, deformation, cracks, and breaks.

BRACKETS

Inspect brackets for bends, cracks, and breaks.

CASTINGS

Inspect castings for cracks, warps, and breaks.

COVERS

Inspect covers for bends, cracks, and breaks.

ELASTIC CORD ASSEMBLIES

Inspect cord for cuts, tears, or loss of elasticity.

INSERTS

1. Inspect inserts for cracks, and stripped or damaged threads.

2. Check inserts for loose fit.

MACHINED PARTS

Inspect machined surfaces for nicks, burrs, and raised material. Mark damaged areas for repair.

QUICK-RELEASE PINS

Inspect quick-release pins for wear, and for broken or missing parts.

SHAFTS

Inspect shafts for burrs, wear, binding, scoring, galling, twisting, cracks, and breaks.

SPRINGS

Inspect springs for deformation, cracks, breaks, and loss of tension.

THREADED PARTS

1. Inspect threaded parts for bends, cracks, breaks, corrosion, and worn, stripped or damaged threads.

2. Inspect heads on screws and bolts for deformation.

3. Inspect wrench flats on nuts for deformation.

REPAIR

4-13. General repair instructions and procedures are provided in the following paragraphs. Special repair instructions and procedures are provided in the task related to the specific part. Clean all parts after repair is completed. Any instruction to replace a “worn” part means only those items worn to a degree that affects proper functioning.

GENERAL REPAIR INSTRUCTIONS

Repair consists of replacing damaged or malfunctioning components found during inspection and/or troubleshooting. Removal of subassemblies and/or components is to be performed only to the extent necessary to accomplish the required repair. In disassembling a unit, remove major assemblies and subassemblies whenever possible. Subassemblies may then be disassembled, as necessary, into individual parts. Good judgement should be exercised to keep disassembly and assembly operations to a minimum. During assembly, subassemblies should be assembled first and then installed to form a complete unit.

Care must be exercised to use tools that are suitable for the task in order to avoid mutilation of parts or damage to tools.

Use the double-twist method of Iockwiring. Use wire twisters to twist Iockwire. Lockwire will always be installed and twisted so that the loop around the head stays down. It should not come up over the bolt head, causing a slack loop. Extreme care must be used when twisting wires together to insure that they are tight, but not overstressed to the point where breakage will occur under slight Ioad or vibration. New Iockwire will be used on each application.

Self-locking nuts and retaining devices, such as spring pins and cotter pins, that are removed during maintenance will be discarded and new parts will be used. If screws, bolts, washers, or nuts are damaged, replace.

Screw thread inserts will not be removed unless replacement is required.

Chipped or cracked painted surfaces of the armament subsystem maybe repainted. Use a type M or type Z phosphate finish on ferrous metals unless otherwise specified.

Apply a type I or II anodic coating to all aluminum or aluminum alloy parts unless otherwise specified. It is not necessary to refinish parts that already have a good quality finish and will not be improved by refinishing.

BEARINGS

1. Refer to TM 9-214 for maintenance procedures for ball bearings.
2. Replace bearings if defects are found.

BEARING RETAINERS

Replace bearing retainers that are deformed, cracked, or broken.

BRACKETS

1. Straighten bent brackets. Replace if function has been impaired,
2. Replace brackets that are cracked or broken.

CASTINGS

Replace castings that are cracked, warped, or broken.

COVERS

1. Straighten bent covers. Replace if function has been impaired
2. Replace covers that are cracked or broken.

ELASTIC CORD ASSEMBLIES

Replace torn, cut, or stretched cord assemblies.

INSERTS

Replace inserts with oversize inserts when threads are stripped or damaged, or when inserts are cracked or loose. Do not chase inserts.

MACHINED PARTS

Repair minor damage to machined surfaces with crocus cloth or a soft honing stone. The finish of the repaired part is to approximate the original finish. In performing any of these operations, take care to not alter critical dimensions.

QUICK-RELEASE PINS

Replace quick-release pins that are worn, or that have broken or missing parts.

SHAFTS

1. Replace shafts that are scored, galled, twisted, cracked, or broken.
2. Remove burrs and minor surface irregularities with crocus cloth or a soft honing stone

SPRINGS

Replace springs that are defective.

THREADED PARTS

1. Replace parts that have stripped threads. Replace parts that cannot be repaired by chasing threads with a used tap or die. Replace parts that cannot be repaired by installing inserts.

2. Chase damaged threads with a used tap or die of correct size. If possible, a worn tap or die should be used because a new tap may cut oversize and a new die may cut undersize.

Section V. TROUBLESHOOTING

GENERAL

4-14. Troubleshooting instructions are provided as an aid in isolating and correcting malfunctions. The more common and/or representative faults are covered but similar methods of trouble analysis and remedial action should be used to correct any specific faults not discussed. The manual provides many tools to aid the technician in isolating and correcting faults.

FAULT SYMPTOM INDEX

The fault symptom index lists the common malfunctions the technician may find during operation of the M23, M24, M41, or M144 armament subsystem. The index lists the fault symptom, then lists the recommended action or actions to be taken for the symptom, and finally references the place where the action may be found. As the technician, you may consult the index directly when you are confident that you have defined the fault symptoms correctly. Then scan the list for the fault symptoms and proceed with the recommended actions until all the fault symptoms have been corrected.

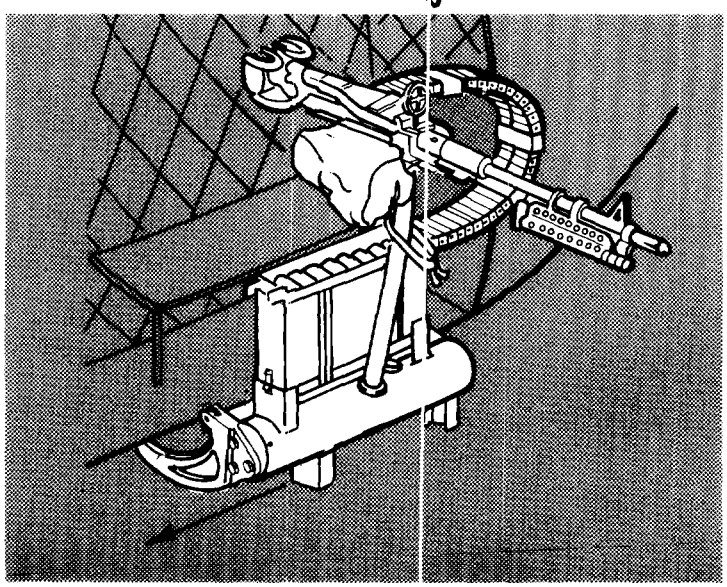
4-15. FAULT SYMPTOM INDEX

Fault Symptom	Action	Reference
M23 ARMAMENT SUBSYSTEM		
1. Pintle movement restricted.	Check for dirty, rusty, and damaged pintle pivot or ball bearings, see REPAIR OF PINTLE POST ASSEMBLY AND POST AND PINTLE SUBASSEMBLY.	Para 4-18
2. Subsystem not in alinement. Refer to field of fire limits, para 1-11.	Check for bent mounting beam, pintle post assembly, or base tube assembly, see REPAIR OF M23 PINTLE MOUNT.	Para 4-17
3. Ammunition jams in ammunition box.	Check for dents and damage to ammunition box and cover assembly. See REPAIR OF AMMUNITION BOX AND COVER ASSEMBLY.	Para 4-22
4. Ammunition jams in flexible chute assembly.	1. Check for dents in ammunition chute links of flexible chute assembly, see REPAIR OF FLEXIBLE CHUTE ASSEMBLY.	Para 4-19
	2. Check for twisted or distorted flat spring in chute brace assembly, see REPAIR OF CHUTE BRACE ASSEMBLY.	Para 4-20
5. Shell casings and links fall out of ejection control bag.	Check for torn bag or bent frame, see REPAIR OF EJECTION CONTROL BAG AND FRAME ASSEMBLY.	Para 4-21
6. M60D machine gun will not fire or does not operate properly.	Refer to M60D machine gun maintenance manual for troubleshooting instructions.	TM 9-1005-224-24

Fault Symptom	Action	Reference
M24 ARMAMENT SUBSYSTEM		
7. Pintle movement restricted.	Check for dirty, rusty, and damaged pintle or ball bearings, see REPAIR OF M24 LEFT SIDE AND RIGHT SIDE MOUNT ASSEMBLY.	Para 4-24
8. Subsystem not in alinement. Refer to field of fire limits, para 1-11.	Check for twisted mount assembly or shock cord assembly, see REPAIR OF M24 LEFT SIDE AND RIGHT SIDE MOUNT ASSEMBLY.	Para 4-24
9. Ammunition jams in ammunition can assembly.	Check for dents and damage to ammunition can assembly, see REPAIR OF AMMUNITION CAN ASSEMBLY.	Para 4-25
10. Shell casings and links fall out of ejection control bag.	Check for torn bag or bent frame, see REPAIR OF EJECTION CONTROL BAG AND FRAME ASSEMBLY.	Para 4-21
11. M60D machine gun will not fire or does not operate properly.	Refer to M60D machine gun maintenance manual for troubleshooting instructions.	TM 9-1005-224-24
M41 ARMAMENT SUBSYSTEM		
12. Mount pintle movement restricted.	Check for dirty, rusty, and damaged mount pintle or sleeve bearing, see REPAIR OF M41 REAR RAMP MOUNT ASSEMBLY.	Para 4-27
13. Ammunition jams in ammunition can assembly.	Check for dents and damage to ammunition can assembly, see REPAIR OF AMMUNITION CAN ASSEMBLY.	Para 4-25
14. Shell casings and links fall out of ejection control bag.	Check for torn bag or bent frame, see REPAIR OF EJECTION CONTROL BAG AND FRAME ASSEMBLY.	Para 4-21
15. M60D machine gun will not fire or does not operate properly.	Refer to M60D machine gun maintenance manual for troubleshooting instructions.	TM 9-1005-224-24

Fault Symptom	Action	Reference
M144 ARMAMENT SUBSYSTEM		
16. Mount pintle movement restricted.	Check for dirty, rusty or damaged mount pintle, see REPAIR OF M144 LEFT HAND AND RIGHT HAND GUN MOUNT ASSEMBLY.	Para 4-29
17. Arm assembly release won't fold onto support mount.	Inspect arm release grip and arm release latch for rust, damage or sticking, see REPAIR OF LEFT HAND AND RIGHT HAND ARM ASSEMBLY RELEASE.	Para 4-31
18. Detent will not release.	Check for rusty, bent, or stuck plunger, see REPAIR OF MOUNT PINTLE.	Para 4-30
19. M60D machine gun wobbles on mount pintle.	Check for broken mount pintle or worn pintle gun mounting holes, see REPAIR OF MOUNT PINTLE.	Para 4-30
20. Downlock does not secure weapon.	Check for weak compression spring, see REPAIR OF MOUNT PINTLE.	Para 4-30
21. Ammunition jams in ammunition can.	Check for dents and damage to ammunition can, see REPAIR OF AMMUNITION CAN ASSEMBLY.	Para 4-25
22. Shell casings and links fall out of ejection control bag.	Check for torn bag or bent frame, see REPAIR OF EJECTION CONTROL BAG AND FRAME ASSEMBLY.	Para 4-21
23. M60D machine gun will not fire or does not operate properly.	Refer to M60D machine gun maintenance manual for troubleshooting instructions.	TM 9-1005-224-24

Section VI. MAINTENANCE OF M23 ARMAMENT SUBSYSTEM



4-16. REMOVAL/INSTALLATION OF M23 ARMAMENT SUBSYSTEM

DESCRIPTION

This task covers: Removal and installation.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Materials:
Oil, Lubricating (Item 5, App D)

Equipment Condition:
Helicopter positioned in designated maintenance area.

References:
TM 9-1005-224-24

NOTE

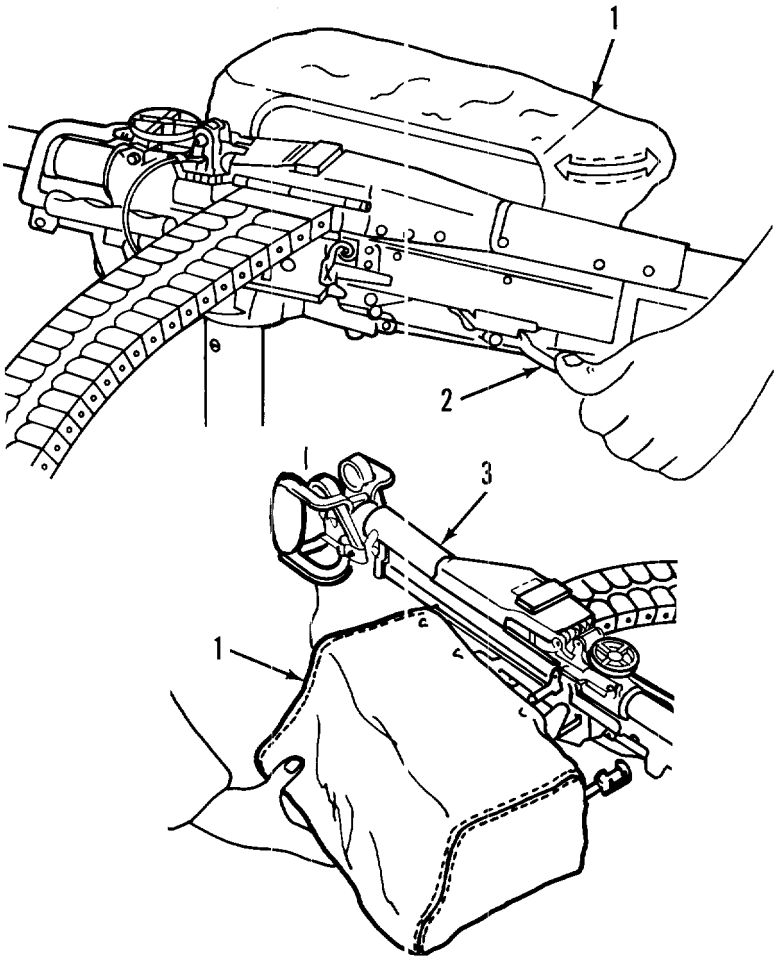
These procedures may be used for either a right or left side subsystem.

REMOVAL

1. REMOVE EJECTION CONTROL BAG (1).

   a. Hold down rear bracket safety latch (2) to unlock ejection control bag (1).

   b. Lift ejection control bag (1) off machine gun (3).



REMOVAL (cont)

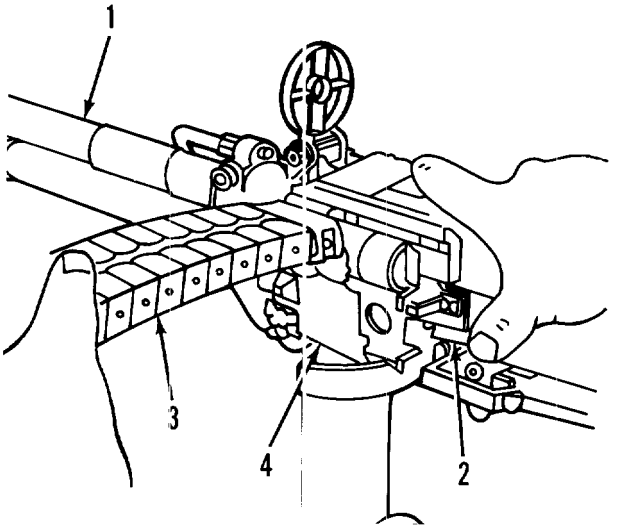
2. REMOVE M60D MACHINE GUN (1).

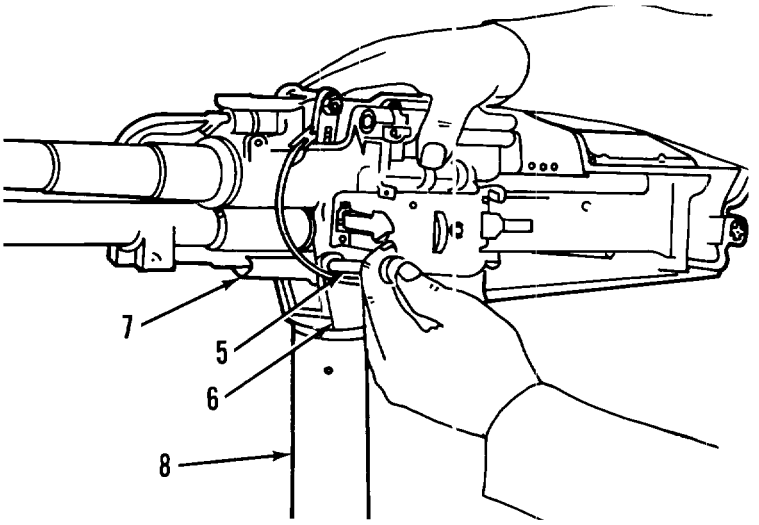
   a. Hold down magazine release latch (2), and pull flexible chute assembly (3) with ammunition chute adapter (4) off the feed side of machine gun (1).

   b. Pull quick release pin (5) from pintle post assembly (6), and from machine gun adapter and mounting bracket (7).

   c. Lift M60D machine gun (1) off pintle post assembly (6) of M23 pintle mount (8).

   d. Refer to TM 9-1005-224-24 for repair of M60D machine gun.





REMOVAL (cont)

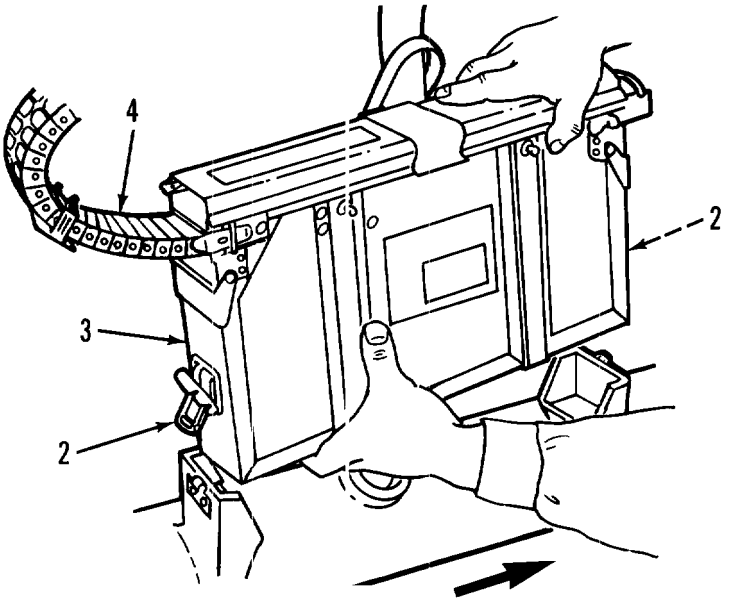
3. REMOVE M23 PINTLE MOUNT (1).

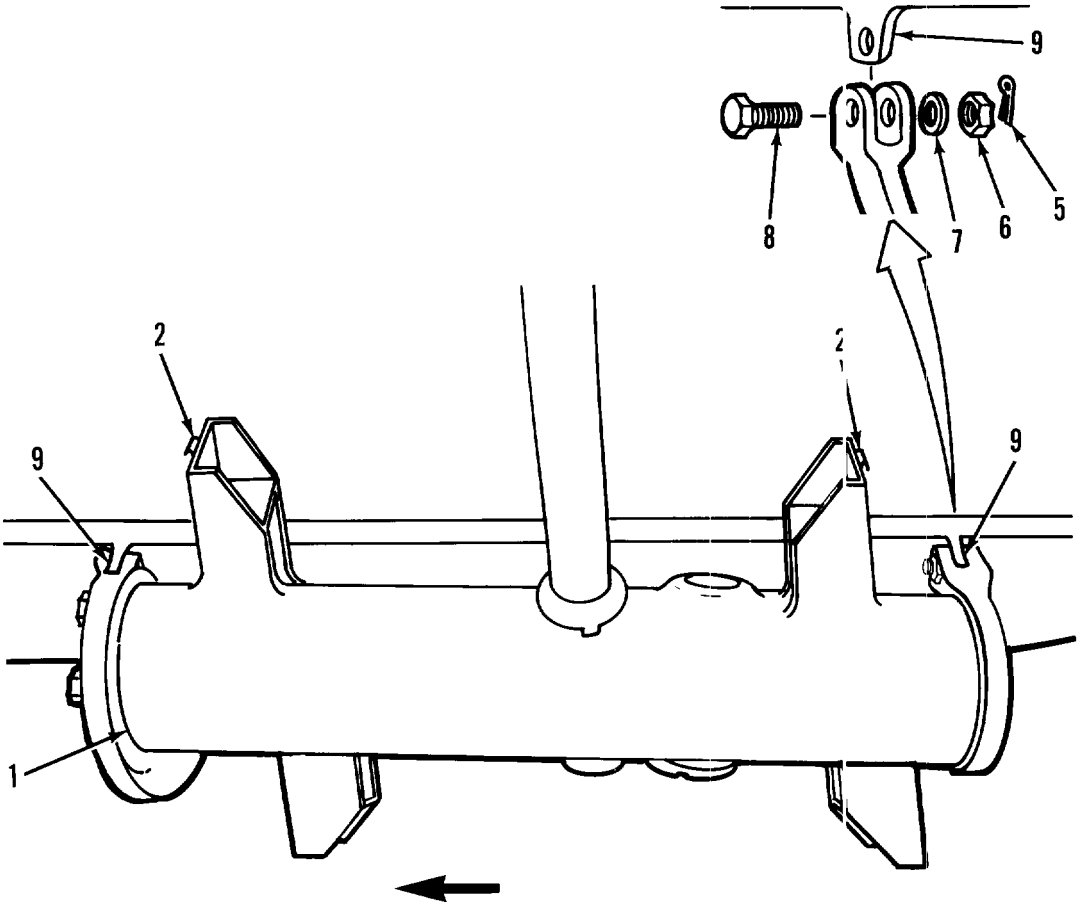
   a. Open two latches (2), remove ammunition box and cover assembly (3) and chute brace assembly (4), as a unit.

   b. Support M23 pintle mount (1), remove two cotter pins (5), castellated plain nuts (6), flat washers (7), and clevis bolts (8) from two upper hard point fittings (9).

NOTE

Arrow points to front of aircraft.





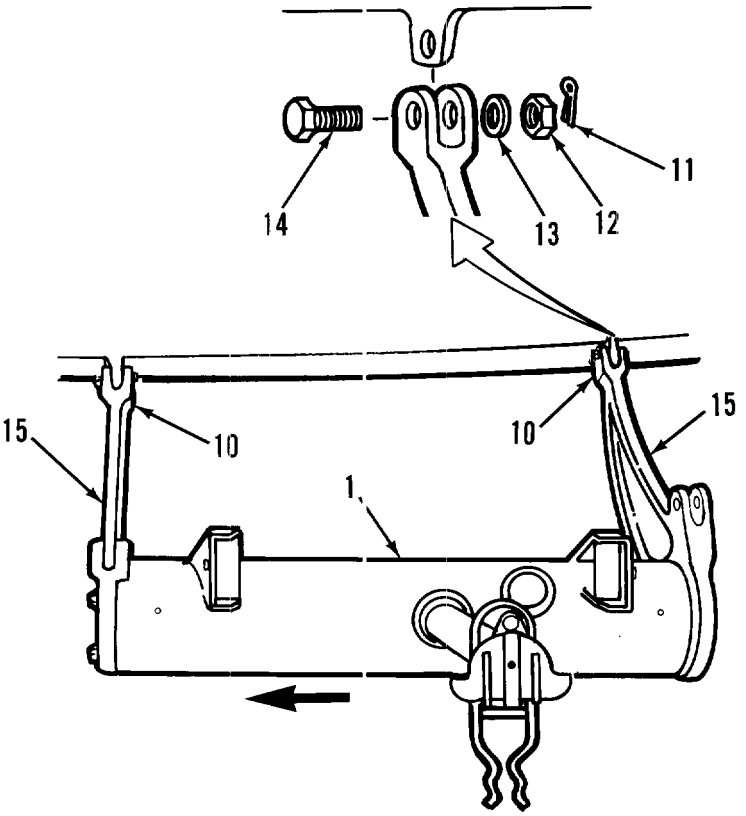
REMOVAL (cont)

3. REMOVE M23 PINTLE MOUNT (1) (cont).

c. Remove support and carefully allow M23 pintle mount (1) to swing down on two lower hard point fittings (10).

d. Support M23 pintle mount (1) and remove two cotter pins (11), castellated plain nuts (12), flat washers (13), and clevis bolts (14) from two lower hard point fittings (10). Remove M23 pintle mount (1).

e. Install mounting hardware on mounting beams (15) to prevent loss. Lightly lubricate hardware with lubricating oil.



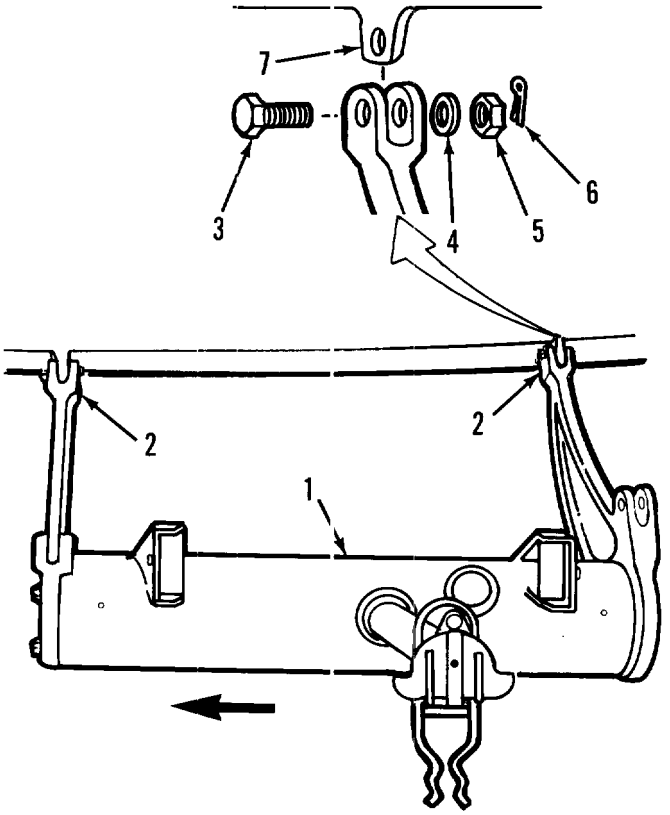
INSTALLATION

4. INSTALL M23 PINTLE MOUNT (1).

a. Support M23 pintle mount (1) and align two lower hard point fittings (2).

b Fasten with two clevis bolts (3), flat washers (4), castellated plain nuts (5), and cotter pins (6). Make sure that clevis bolts are installed with heads toward front of aircraft.

c. Swing M23 pintle mount (1) up, and align two upper hard point fittings (7).

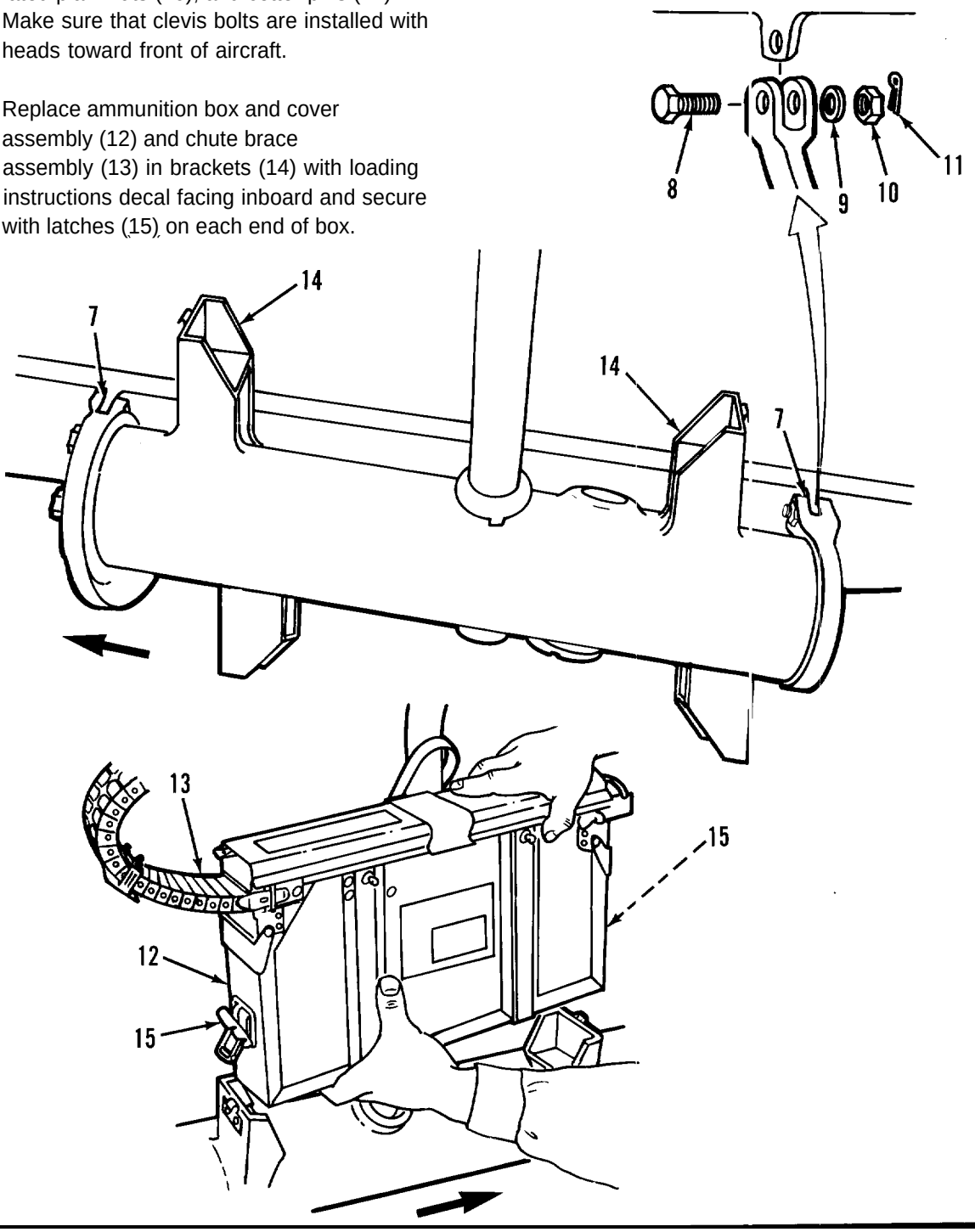


INSTALLATION (cont)

4. INSTALL M23 PINTLE MOUNT (1) (cont).

   d. Secure two upper hard point fittings (7) with two clevis bolts (8), flat washers (9), castellated plain nuts (10), and cotter pins (11). Make sure that clevis bolts are installed with heads toward front of aircraft.

   e. Replace ammunition box and cover assembly (12) and chute brace assembly (13) in brackets (14) with loading instructions decal facing inboard and secure with latches (15) on each end of box.



INSTALLATION (cont)

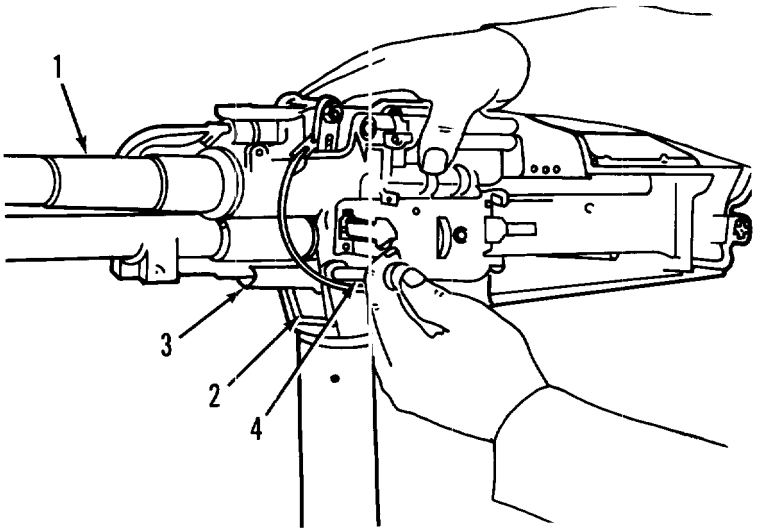
5. INSTALL M60D MACHINE GUN (1).

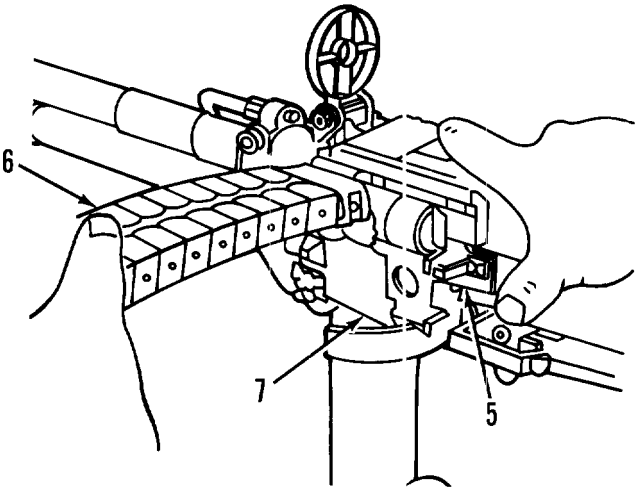
a. Position machine gun (1) on pintle post assembly (2), and align holes in gun adapter and mounting bracket (3) and pintle post assembly (2).

b. Install quick release pin (4).

c. Hold down magazine release latch (5) while positioning flexible chute assembly (6) with ammunition chute adapter (7) against feed side of machine gun.

d. Release magazine release latch (5) to secure flexible chute assembly (6) to machine gun.





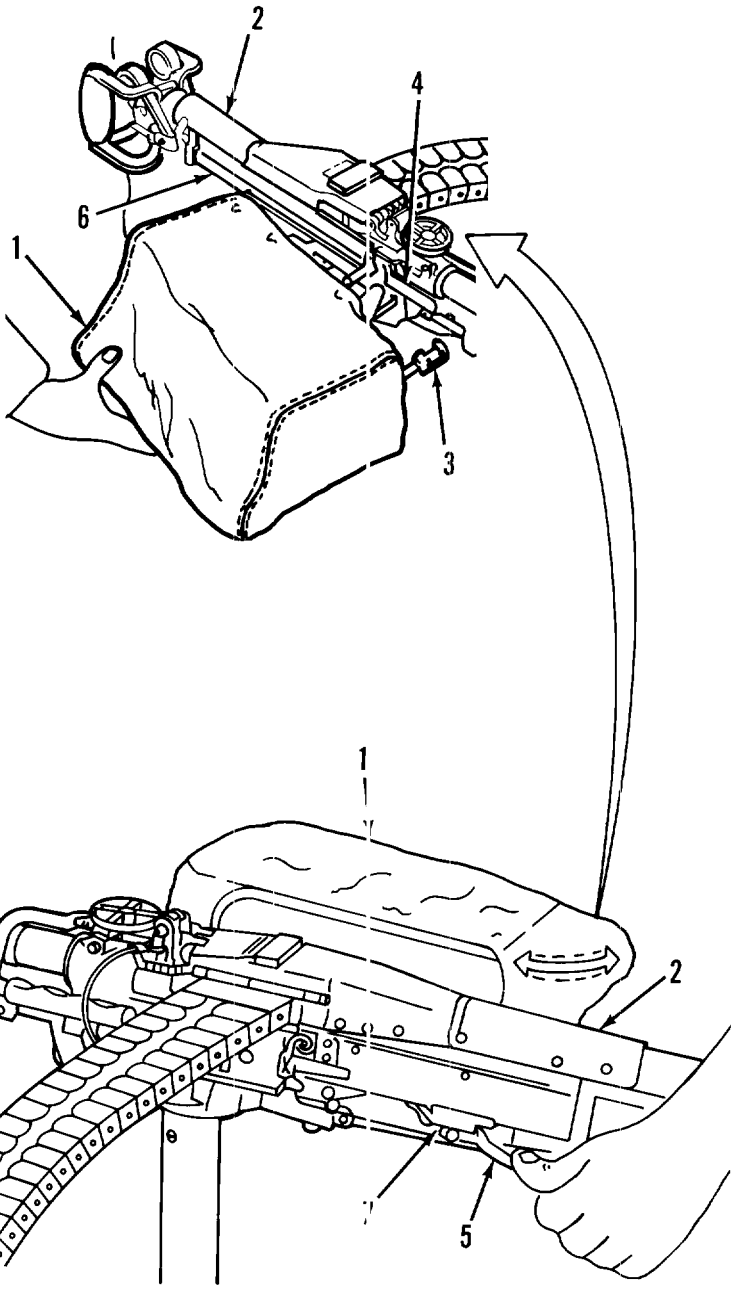
INSTALLATION (cont)

6. INSTALL EJECTION CONTROL BAG (1).

   a. Position ejection control bag (1) against ejection side of machine gun (2) with forward arm bracket (3) of bag in front of forward mounting points of gun adapter (4).

   b. Hold down rear bracket safety latch lever (5) while sliding forward arm bracket (3) rearward on mounting points of gun adapter (4) and positioning rear bracket (6) behind mounting plate (7) of machine gun (2).

   c. Release rear bracket safety latch lever (5) to lock ejection control bag (1) in place. Stow machine gun (2).



END OF TASK

4-17. REPAIR OF M23 PINTLE MOUNT

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Solvent, Mineral Spirit
(Item 8, App D)

Personnel Required:
MOS 45J A/C Armarment
Repairman (2)

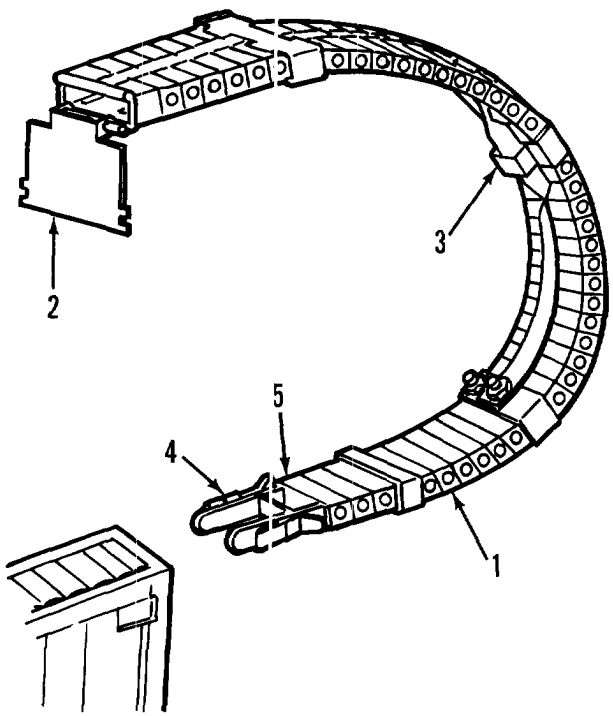
Equipment Condition:
M23 pintle mount removed from helicopter, M60D machine gun removed, and ejection control bag removed, see para 4-16.

DISASSEMBLY

1. REMOVE FLEXIBLE CHUTE ASSEMBLY (1), AMMUNITION CHUTE ADAPTER (2), AND CHUTE BRACE ASSEMBLY (3) AS A UNIT,

   a. Release locking latches (4) on box end fitting (5) of flexible chute assembly (1).

   b. Pull and remove flexible chute assembly (1), chute brace assembly (3), and ammunition chute adapter (2) as a unit.



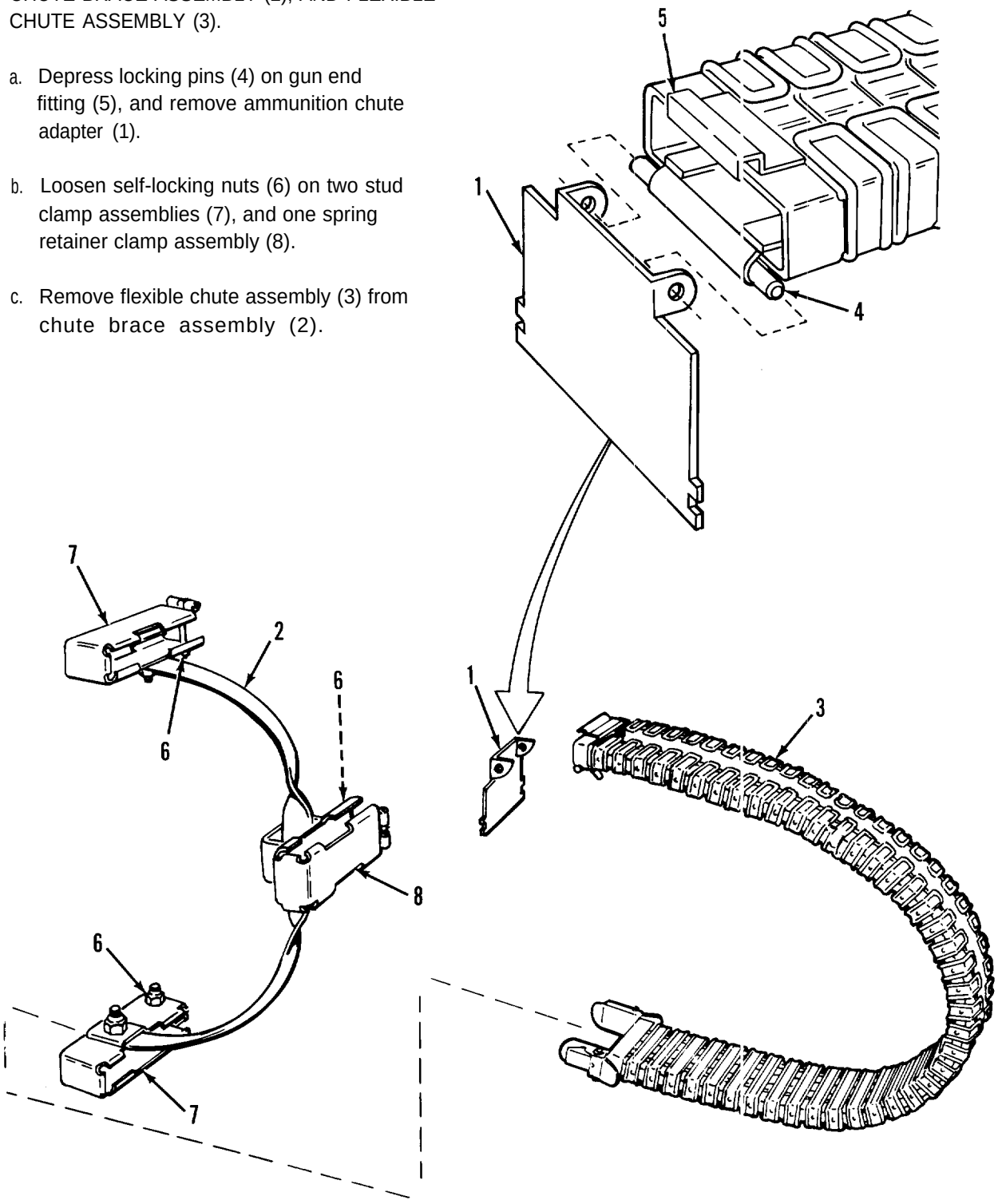
DISASSEMBLY (cont)

2. SEPARATE AMMUNITION CHUTE ADAPTER (1), CHUTE BRACE ASSEMBLY (2), AND FLEXIBLE CHUTE ASSEMBLY (3).

   a. Depress locking pins (4) on gun end fitting (5), and remove ammunition chute adapter (1).

   b. Loosen self-locking nuts (6) on two stud clamp assemblies (7), and one spring retainer clamp assembly (8).

   c. Remove flexible chute assembly (3) from chute brace assembly (2).

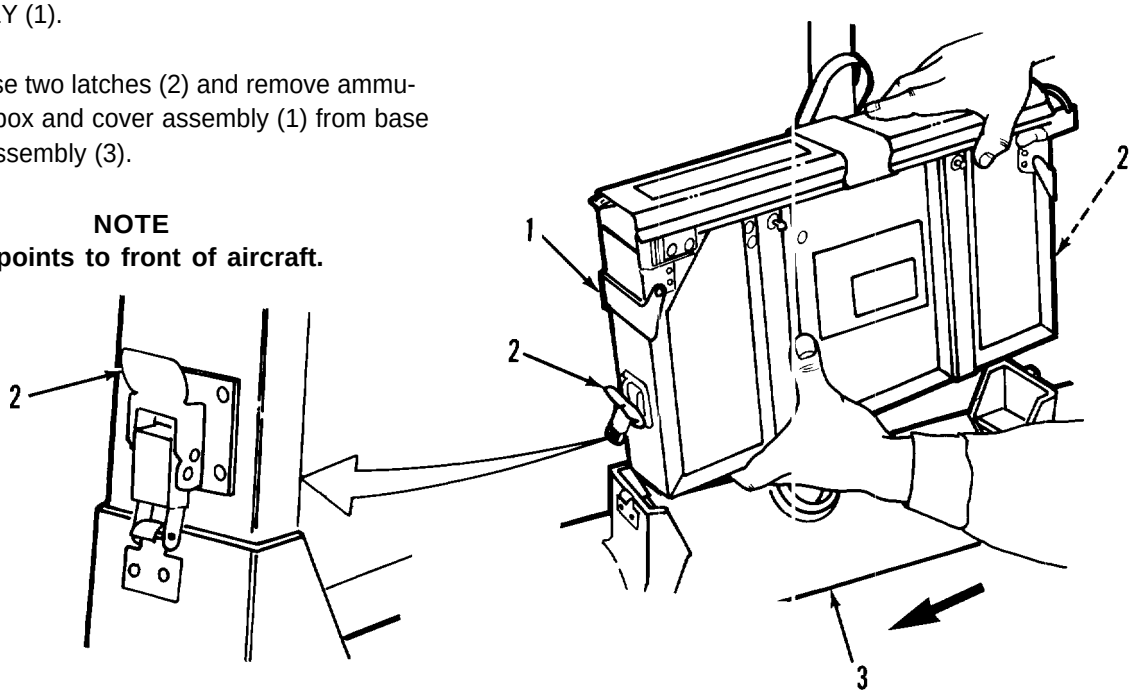


DISASSEMBLY (cont)

3. REMOVE AMMUNITION BOX AND COVER ASSEMBLY (1).

Release two latches (2) and remove ammunition box and cover assembly (1) from base tube assembly (3).

NOTE
Arrow points to front of aircraft.

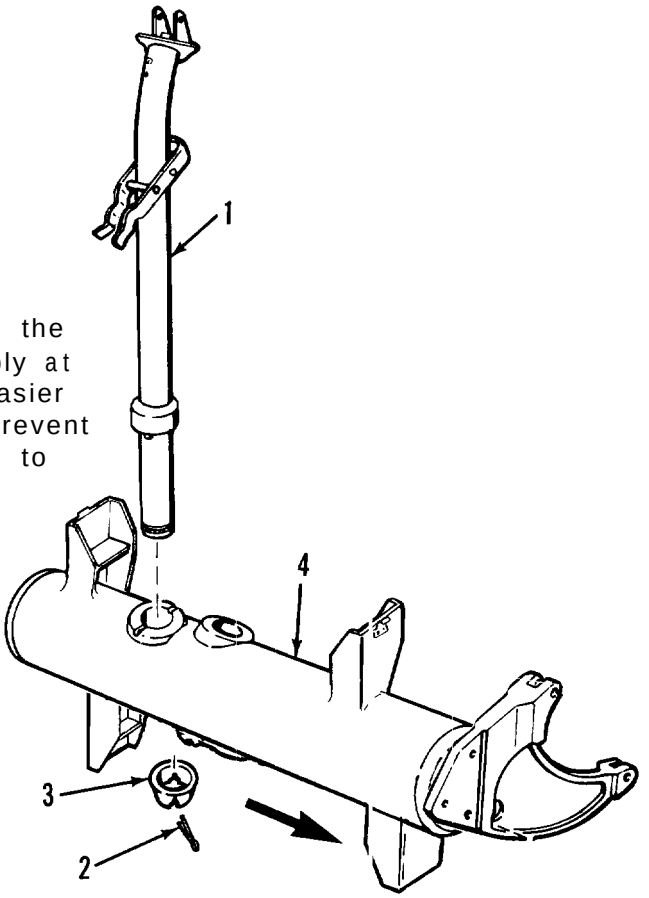


4. REMOVE PINTLE POST ASSEMBLY (1).

Remove cotter pin (2), slotted nut (3), and pintle post assembly (1) from base tube assembly (4).

NOTE

A modification must be performed on the pintle post of the M23 mount assembly at time of overhaul which will permit easier disassembly of post and tube and prevent damage to tube assembly ("F" added to date box of overhaul data plate).



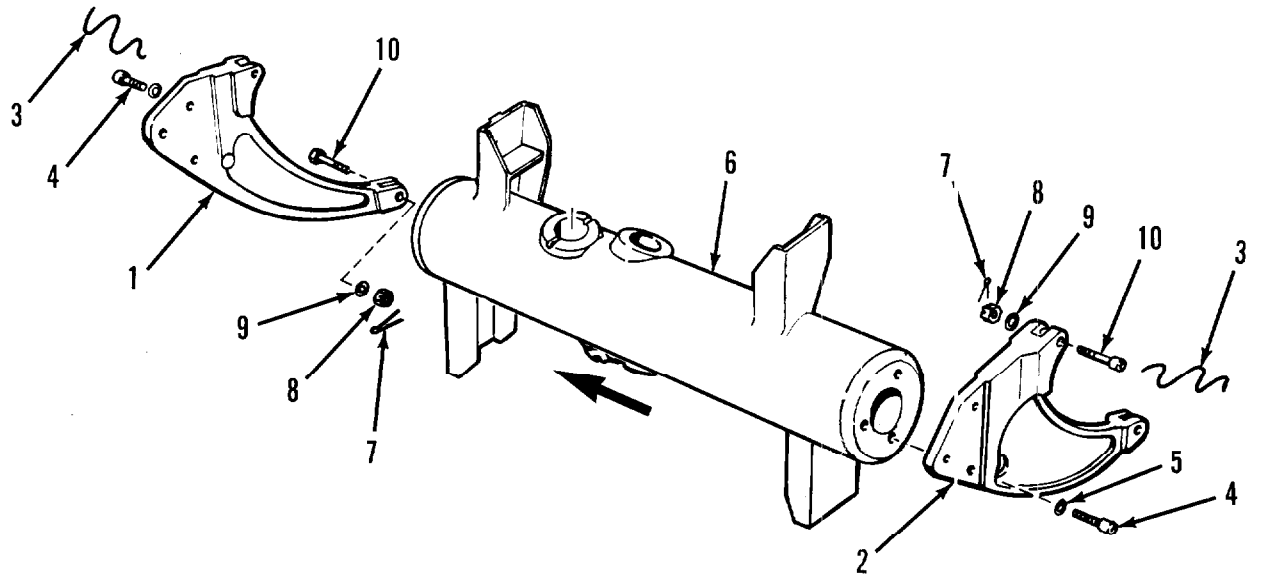
DISASSEMBLY (cont)

5. REMOVE FORWARD MOUNTING BEAM (1) AND REAR MOUNTING BEAM (2).

   a. Cut and remove lockwire (3) from six socket head cap screws (4).

   b. Remove six socket head cap screws (4), flat washers (5), and foward mounting beam (1) and rear mounting beam (2) from base tube assembly (6).

   c. Remove four cotter pins (7), castellated plain nuts (8), flat washers (9), and clevis bolts (10) from forward and rear mounting beams (1 and 2).



CLEANING

6. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

7. PERFORM GENERAL INSPECTION AND GENERAL REPAIR PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR (cont)

8. INSPECT AND REPAIR PARTS IN ACCORDANCE WITH TABULATED DATA.

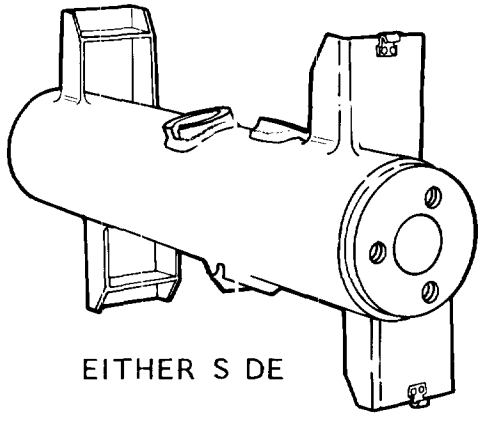
Component	Possible Defect	Remedy
Ammunition Box and Cover Assembly	Dents, bends, or cracks restricting flow of linked cartridges	Repair and replace.
Base Tube Assembly	Cracked or broken	Replace.
Chute Brace Assembly	Kinked or distorted	Repair or replace.
Flexible Chute Assembly	Bent or deformed links	Repair or replace.
Forward and Rear Mounting Beams	Cracked and distorted	Replace.
Post and Pintle Assembly	Cracked, bent, and distorted	Repair or replace.

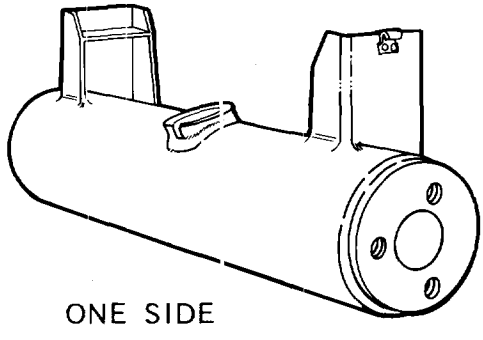
ASSEMBLY

9. INSTALL FORWARD MOUNTING BEAM (1) AND REAR MOUNTING BEAM (2),

NOTE

There are two configurations of the base tube assembly; one for use on either side and one for use on one side only, The base tube assembly used on either side is marked "TOP FRONT FOR RH ASSY" on one side near one end and the opposite side is marked "TOP FRONT FOR LH ASSY." The base tube assembly for use on one side only is marked "RIGHT" or "LEFT" as applicable. The following procedures maybe used for either a RH or LH assembly, as noted.





ASSEMBLY (cont)

9. INSTALL FORWARD MOUNTING BEAM (1) AND REAR MOUNTING BEAM (2) (cont).

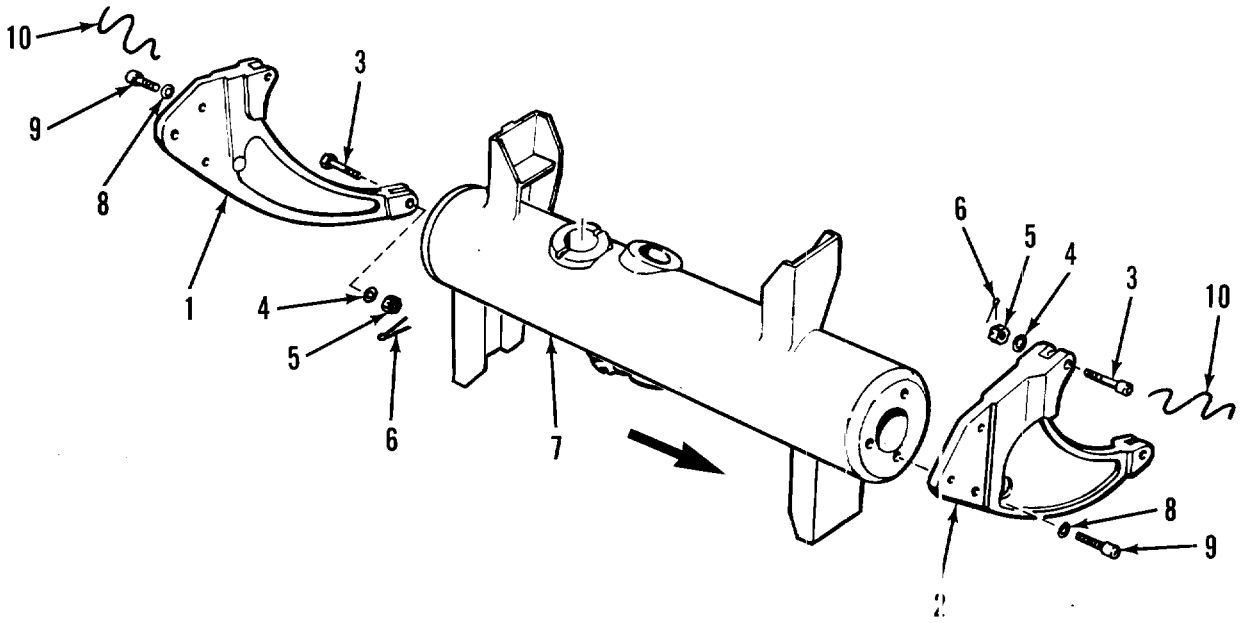
a. Loosely install four clevis bolts (3), flat washers (4), castellated plain nuts (5), and cotter pins (6) into forward and rear mounting beams (1 and 2) to mount M23 pintle mount.

NOTE

Although similar in appearance, the forward and rear mounting beams are not interchangeable. The rear beam is the longer and bulkier of the two.

b. Position base tube assembly (7) for RH or LH mounting and, with clevis-like ends inboard, attach forward mounting beam (1) and rear mounting beam (2) using six flat washers (8) and socket head cap screws (9).

c. Install lockwire (10) on six socket head cap screws (9). See General Repair Instructions, para 4-13, for lockwiring procedures.



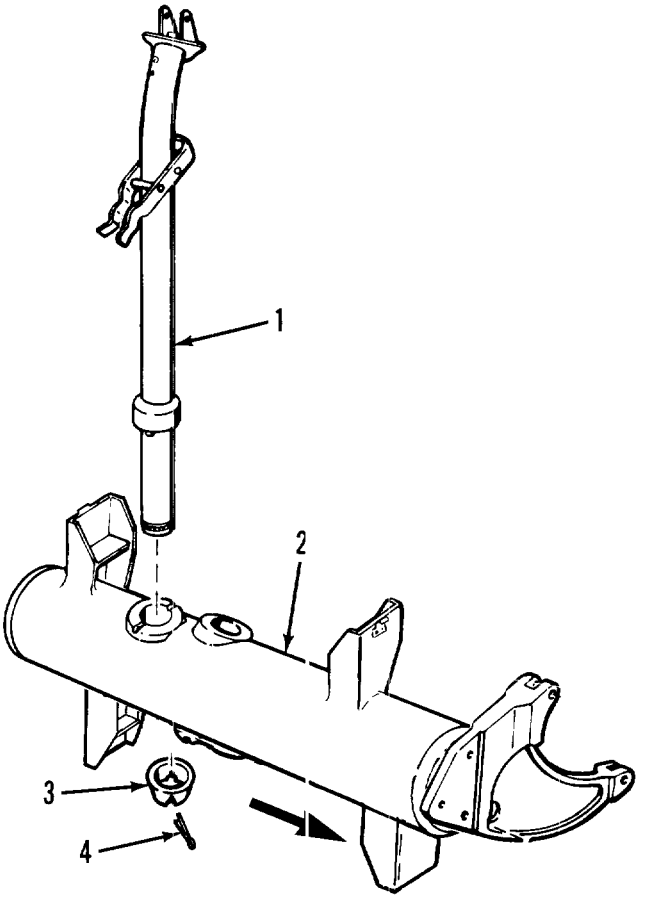
ASSEMBLY (cont)

10. INSTALL PINTLE POST ASSEMBLY (1).

NOTE

The pintle post assembly is inserted through the opening in the base tube assembly which has recesses to receive the locating bosses on pintle post collar. The pintle post assembly is positioned so that the traversing spring tension clip is outboard.

Insert pintle post assembly (1) through appropriate opening in base tube assembly (2), and secure with slotted nut (3) and cotter pin (4).

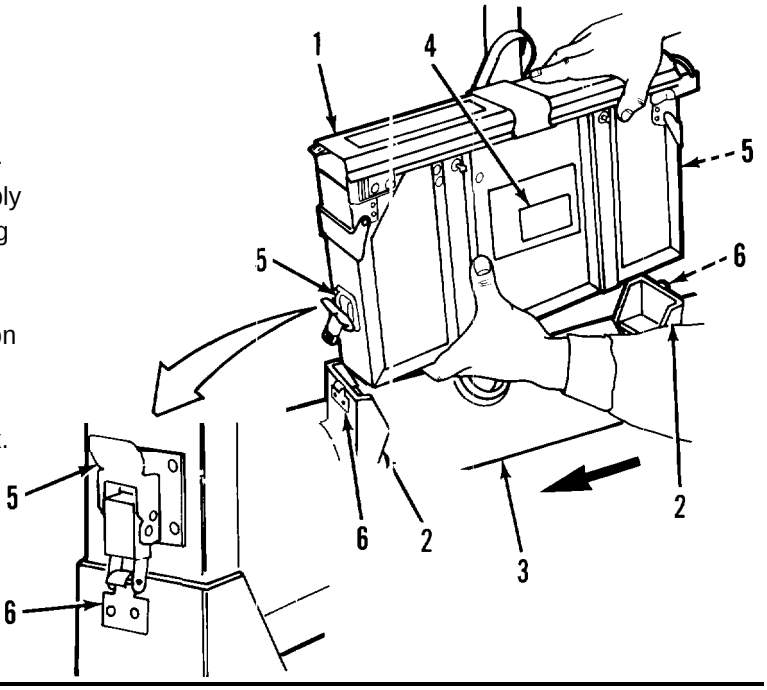


11. INSTALL AMMUNITION BOX AND COVER ASSEMBLY (1).

a. Position ammunition box and cover assembly (1) in brackets (2) on base tube assembly (3) with loading instructions decal (4) facing inboard.

b. Mate latches (5), on each end of ammunition box, with strikes (6) on brackets (2).

c. Close latches (5) to secure ammunition box.



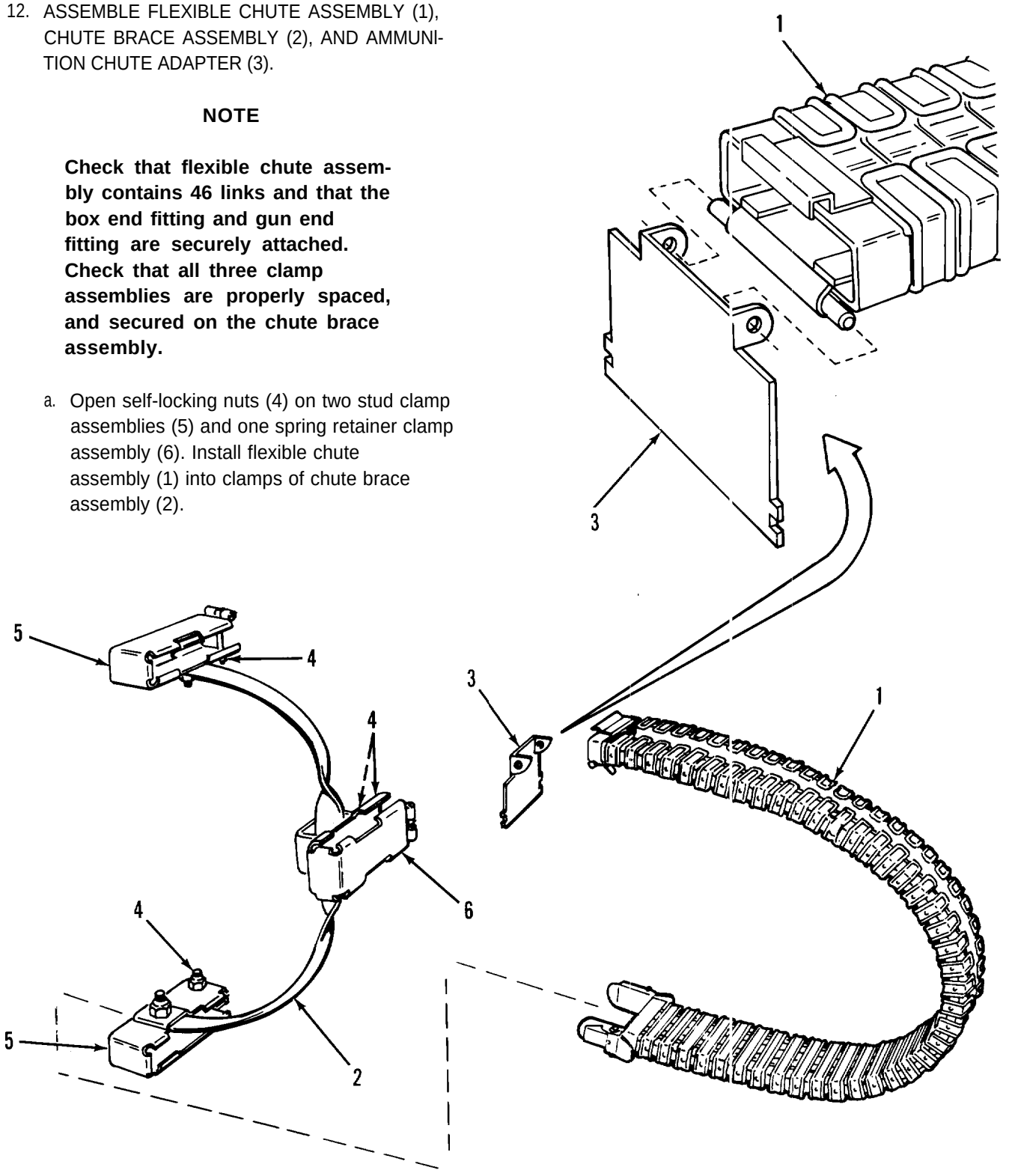
ASSEMBLY (cont)

12. ASSEMBLE FLEXIBLE CHUTE ASSEMBLY (1), CHUTE BRACE ASSEMBLY (2), AND AMMUNITION CHUTE ADAPTER (3).

NOTE

Check that flexible chute assembly contains 46 links and that the box end fitting and gun end fitting are securely attached. Check that all three clamp assemblies are properly spaced, and secured on the chute brace assembly.

a. Open self-locking nuts (4) on two stud clamp assemblies (5) and one spring retainer clamp assembly (6). Install flexible chute assembly (1) into clamps of chute brace assembly (2).

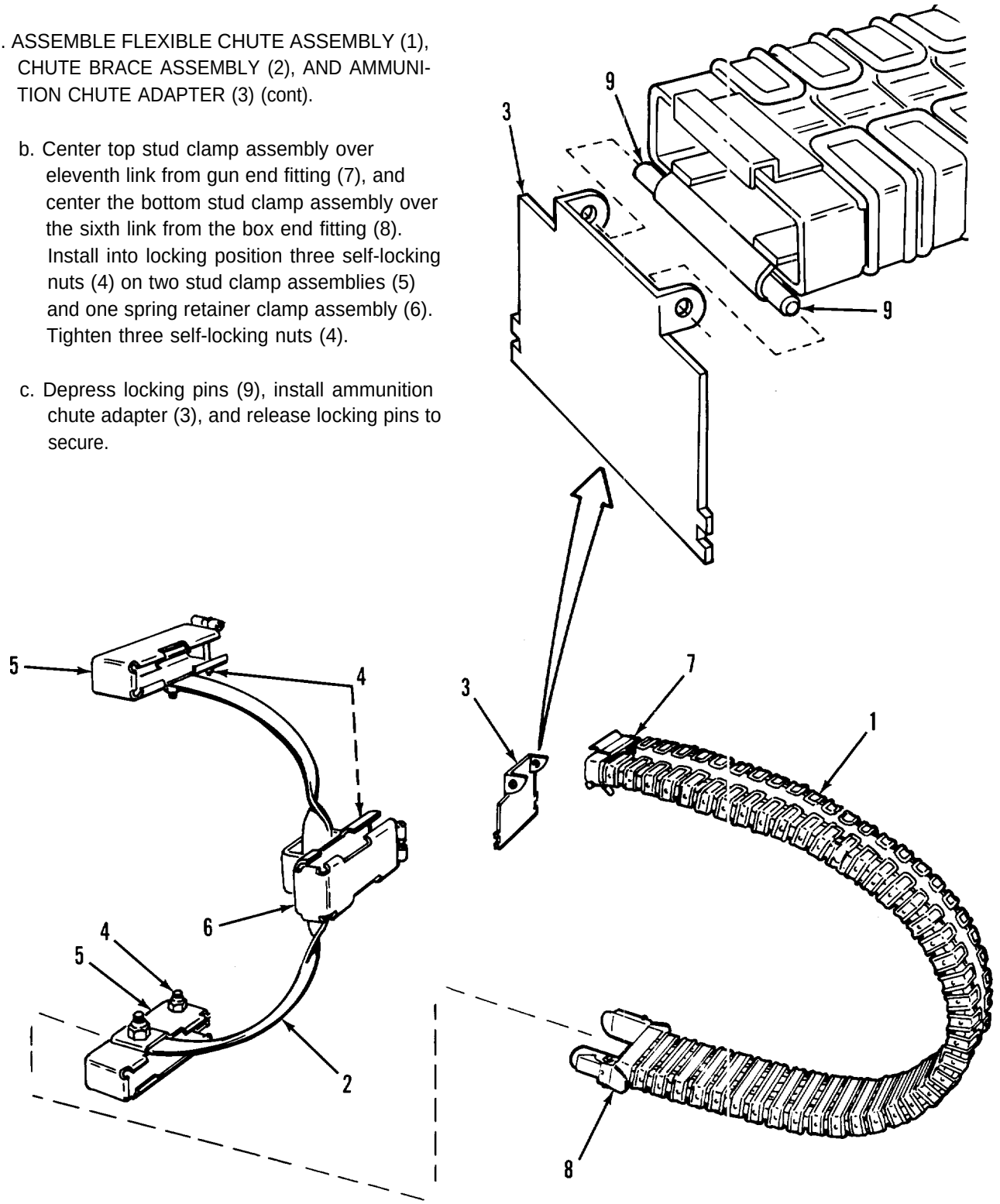


ASSEMBLY (cont)

12. ASSEMBLE FLEXIBLE CHUTE ASSEMBLY (1), CHUTE BRACE ASSEMBLY (2), AND AMMUNITION CHUTE ADAPTER (3) (cont).

    b. Center top stud clamp assembly over eleventh link from gun end fitting (7), and center the bottom stud clamp assembly over the sixth link from the box end fitting (8). Install into locking position three self-locking nuts (4) on two stud clamp assemblies (5) and one spring retainer clamp assembly (6). Tighten three self-locking nuts (4).

    c. Depress locking pins (9), install ammunition chute adapter (3), and release locking pins to secure.



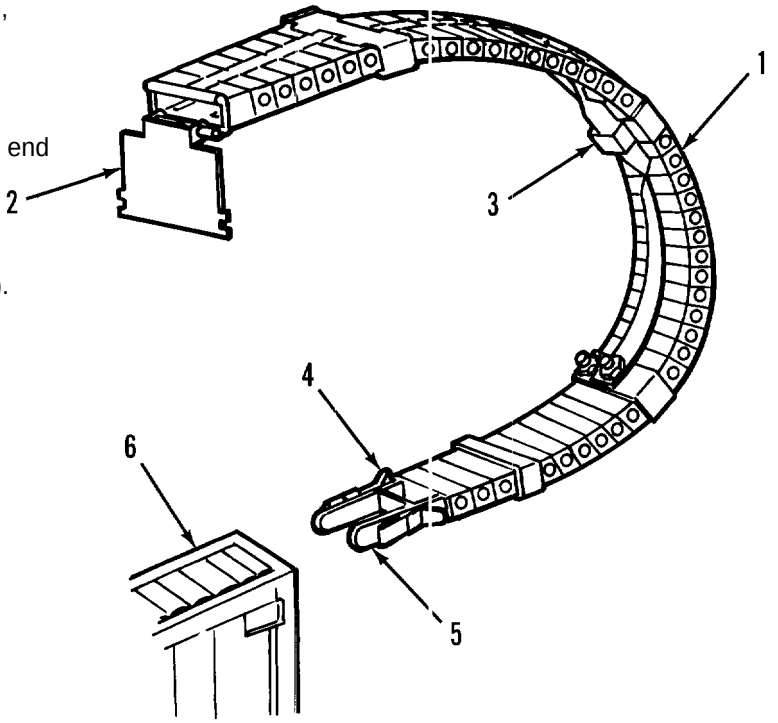
ASSEMBLY (cont)

13. INSTALL FLEXIBLE CHUTE ASSEMBLY (1), AMMUNITION CHUTE ADAPTER (2), AND CHUTE BRACE ASSEMBLY (3) AS A UNIT.

    a. Press to open locking latches (4) on box end fitting (5).

    b. Align and push box end fitting (5) onto ammunition box and cover assembly (6).

    c. Release locking latches (4) to secure.



END OF TASK

4-18. REPAIR OF PINTLE POST ASSEMBLY AND POST AND PINTLE SUBASSEMBLY

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Oil, Lubricating (LSA)
(Item 5, App D)
Solvent, Mineral Spirit
(Item 8, App D)

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Equipment Condition:
Pintle Post Assembly removed from M23 Pintle Mount, see para 4-17.

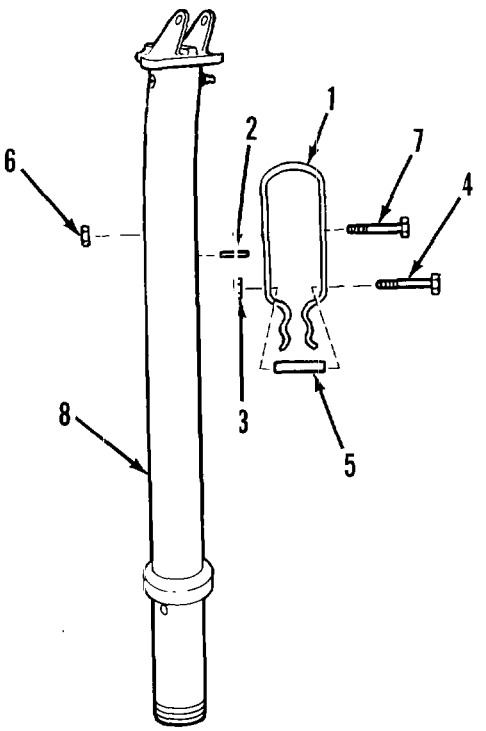
DISASSEMBLY

1. REMOVE TRAVERSING SPRING TENSION CLIP (1) AND SPRING PIN (2).

   a. Remove self-locking nut (3), machine bolt (4), and spacer sleeve (5).

   b. Remove self-locking nut (6), cap screw (7), and traversing spring tension clip (1).

   c. Drive out spring pin (2) from post and pintle subassembly (8).



DISASSEMBLY (cont)

2. REMOVE PINTLE PIVOT (1).

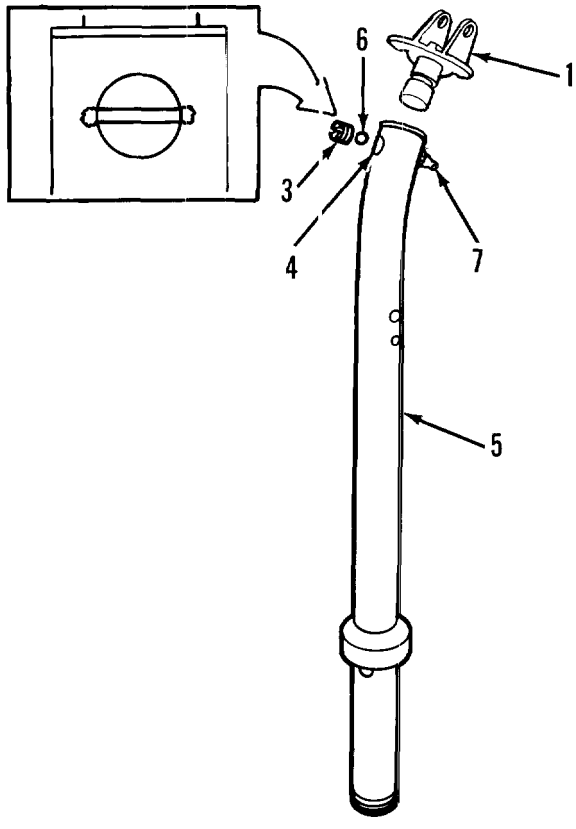
a. Relieve staking (2) and remove setscrew (3).

b. Remove any grease blocking setscrew hole (4), and position setscrew hole over a small container.

c. With a soft faced hammer, lightly tap post subassembly (5) to remove twelve ball bearings (6), Rotate post subassembly (5), as necessary, to remove all ball bearings (6).

d. Remove pintle pivot (1).

e. Remove fitting (7).



CLEANING

3. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

4. PERFORM GENERAL INSPECTION AND GENERAL REPAIR PROCEDURES IN ACCORDANCE WITH SECTION IV.

5. INSPECT AND REPAIR PARTS IN ACCORDANCE WITH TABULATED DATA.

Component	Possible Defect	Remedy
Traversing Spring Tension Clip	Cracked, bent, or distorted	Replace traversing spring tension clip.
Post Subassembly	Cracked or bent	Replace next higher assembly.
Pintle Pivot	Worn, cracked, or distorted	Replace next higher assembly.

ASSEMBLY

6. INSTALL PINTLE PIVOT (1).

a. Lubricate bearing surfaces of pintle (1) with lubricating oil and install into post subassembly (2).

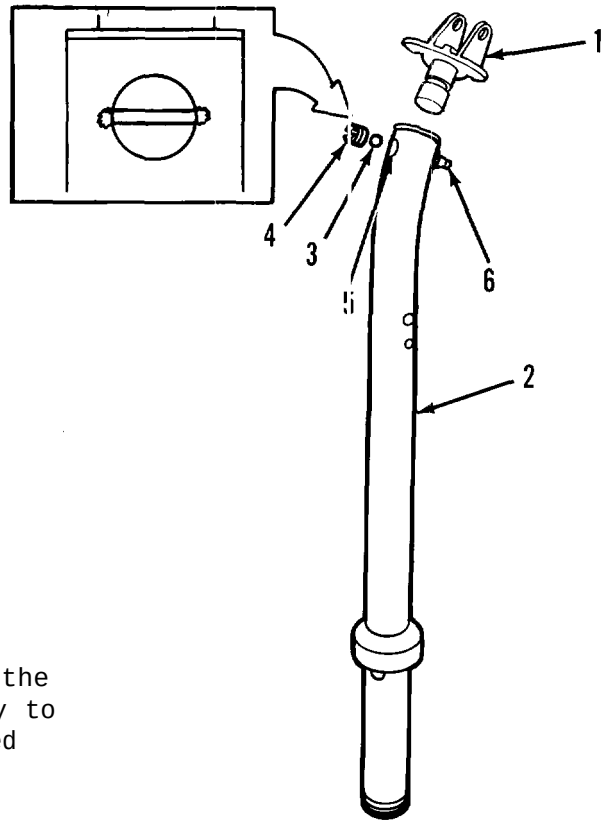
b. Apply lubricating oil to twelve ball bearings (3), and insert them through setscrew hole (5) in post subassembly (2).

c. Install setscrew (4) and stake in two places 180 degrees apart.

d. Install fitting (6).

NOTE

A modification must be performed on the pintle post of the M23 mount assembly to install a lubrication fitting ("G" added to date box of overhaul data plate) .



ASSEMBLY (cont)

7. INSTALL SPRING PIN (1) AND TRAVERSING SPRING TENSION CLIP (2).

   a. Install spring pin (1) into post and pintle subassembly (3) leaving 1/4-inch protruding.

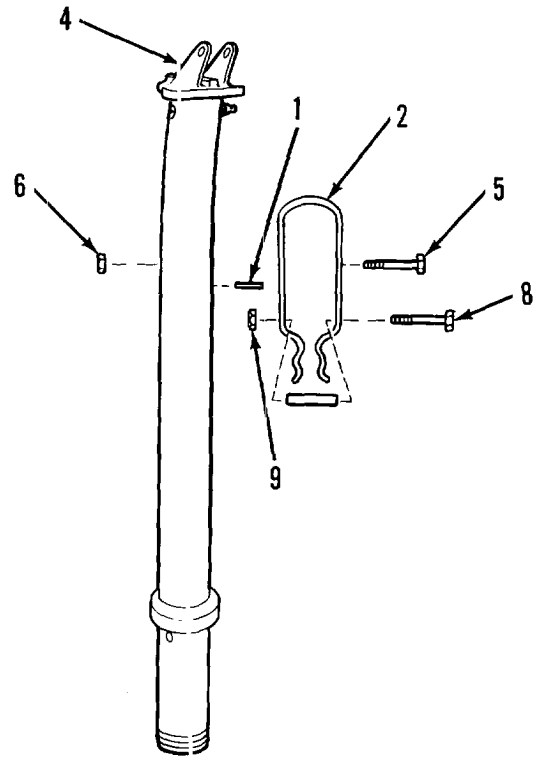
   b. Position traversing spring tension clip (2) on post and pintle subassembly (3) so prongs align with extensions on pintle pivot (4), as shown.

NOTE

Cap screw (5) and machine bolt (8) will be assembled with heads on same side as the protruding spring pin.

   c. Install cap screw (5) and fasten with self-locking nut (6).

   d. Position spacer sleeve (7), and secure with machine bolt (8) and self-locking nut (9).



END OF TASK

4-19. REPAIR OF FLEXIBLE CHUTE ASSEMBLY

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Solvent, Mineral Spirit
(Item 8, App D)

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

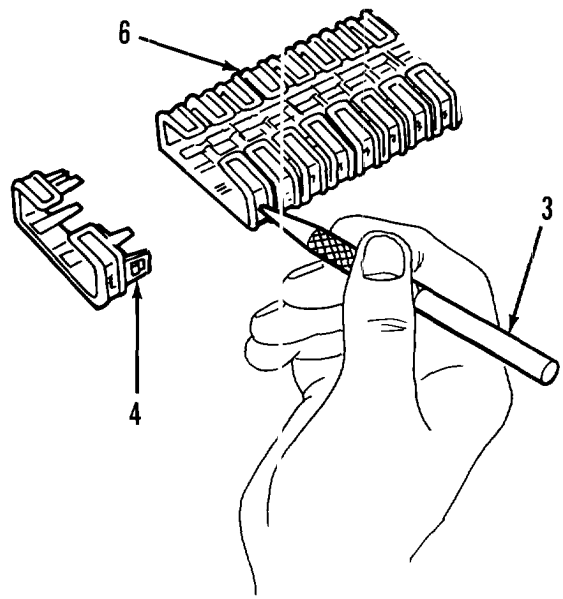
Equipment Condition:
Flexible chute assembly separated from chute brace assembly, see para 4-17.

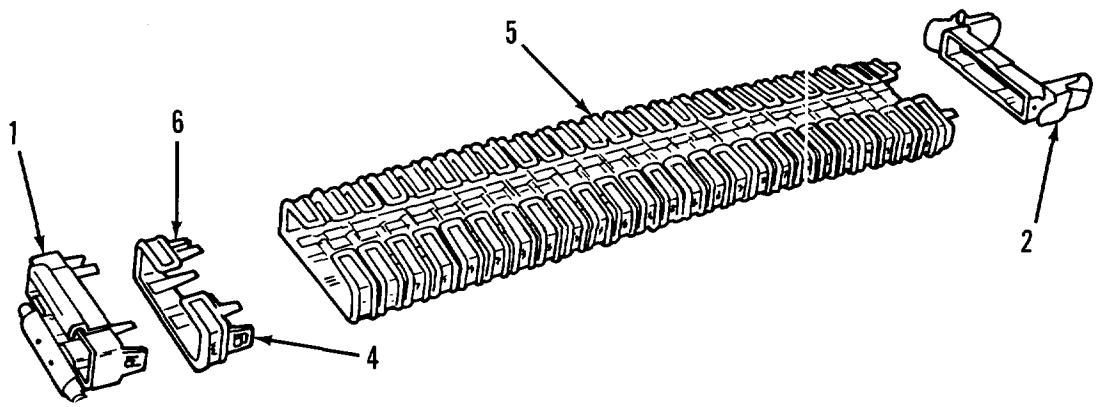
DISASSEMBLY

1. REMOVE GUN END FITTING (1) AND BOX END FITTING (2).

   a. Using a small punch (3) inserted through link access holes, press to relieve spring tab (4) tension and pull gun end fitting (1) and box end fitting (2) off each end of flexible chute assembly (5).

   b. Using the same procedure, separate 46 ammunition chute links (6).





CLEANING

2. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

3. INSPECT AND REPAIR PARTS IN ACCORDANCE WITH TABULATED DATA.

Component	Possible Defect	Remedy
Gun End or Box End Fittings	Bent or deformed	Replace fittings.
Ammunition Chute Links	Bent or deformed	Replace ammunition chute links.

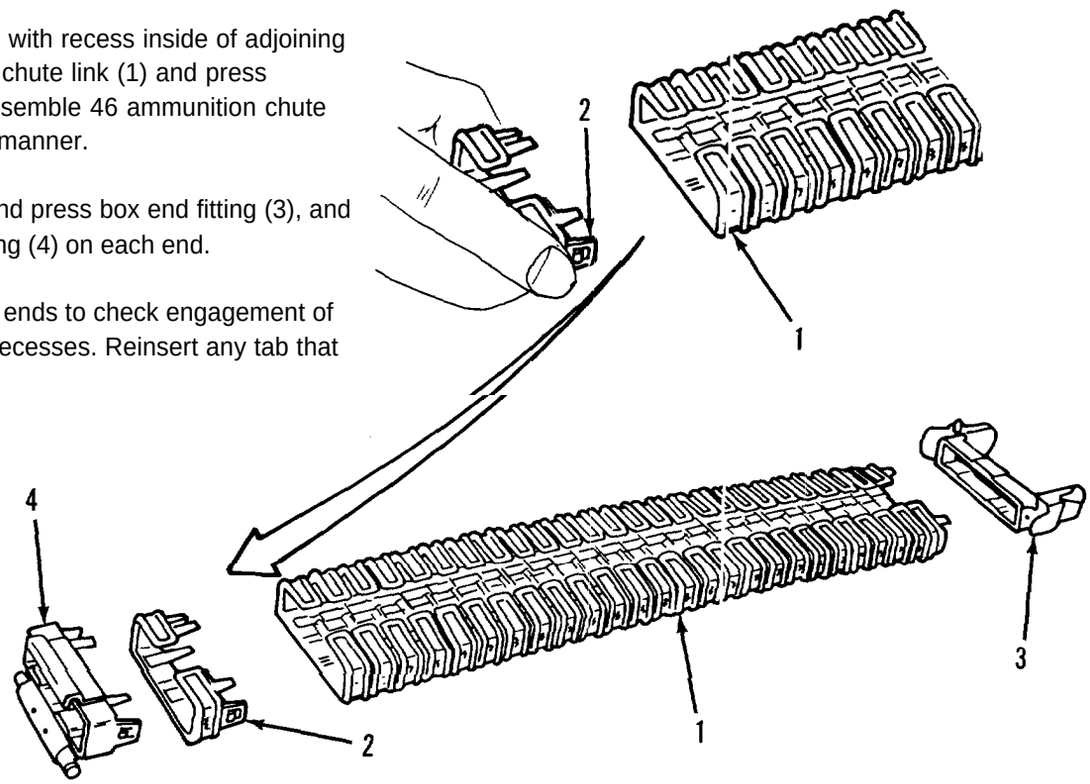
ASSEMBLY

4. ASSEMBLE AMMUNITION CHUTE LINKS (1).

a. Align tab (2) with recess inside of adjoining ammunition chute link (1) and press together. Assemble 46 ammunition chute links in this manner.

b. Align tabs and press box end fitting (3), and gun end fitting (4) on each end.

c. Pull on both ends to check engagement of tabs in link recesses. Reinsert any tab that pulls free.



END OF TASK

4-20. REPAIR OF CHUTE BRACE ASSEMBLY

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Solvent, Mineral Spirit
(Item 8, App D)

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Equipment Condition:
Chute brace assembly separated from flexible chute assembly, see para 4-17.

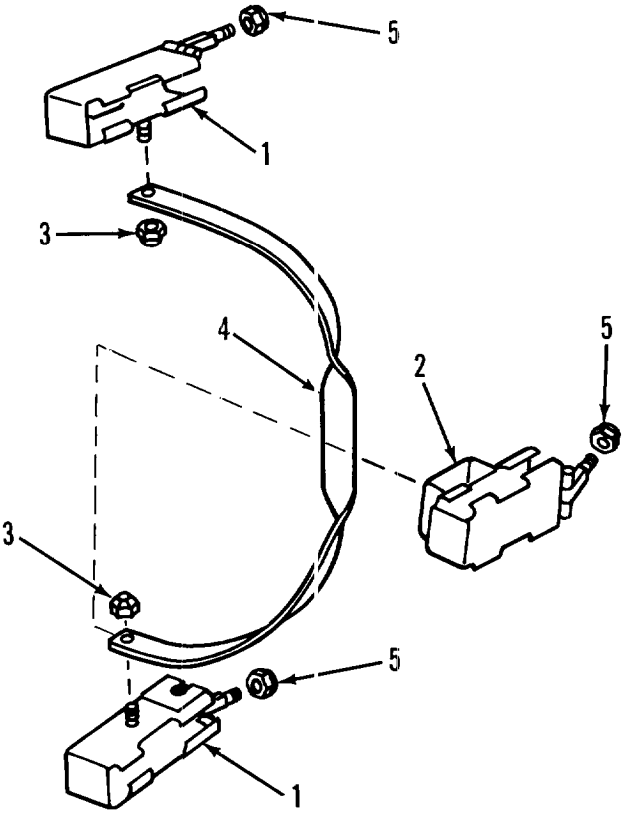
DISASSEMBLY

1. REMOVE STUD CLAMP ASSEMBLIES (1) AND SPRING RETAINER CLAMP ASSEMBLY (2).

   a. Remove two self-locking nuts (3), and two stud clamp assemblies (1).

   b. Turn and slide spring retainer clamp assembly (2) off chute brace assembly flat spring (4).

   c. Remove three self-locking nuts (5).



CLEANING

2. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

3. INSPECT AND REPAIR PARTS IN ACCORDANCE WITH TABULATED DATA.

Component	Possible Defect	Remedy
Stud Clamp Assemblies	Bent, cracked, or distorted	Replace stud clamp assemblies.
Spring Retainer Clamp Assembly	Bent, cracked, or distorted	Replace spring retainer assembly.
Chute Brace Assembly Flat Spring	Bent or distorted	Replace flat spring

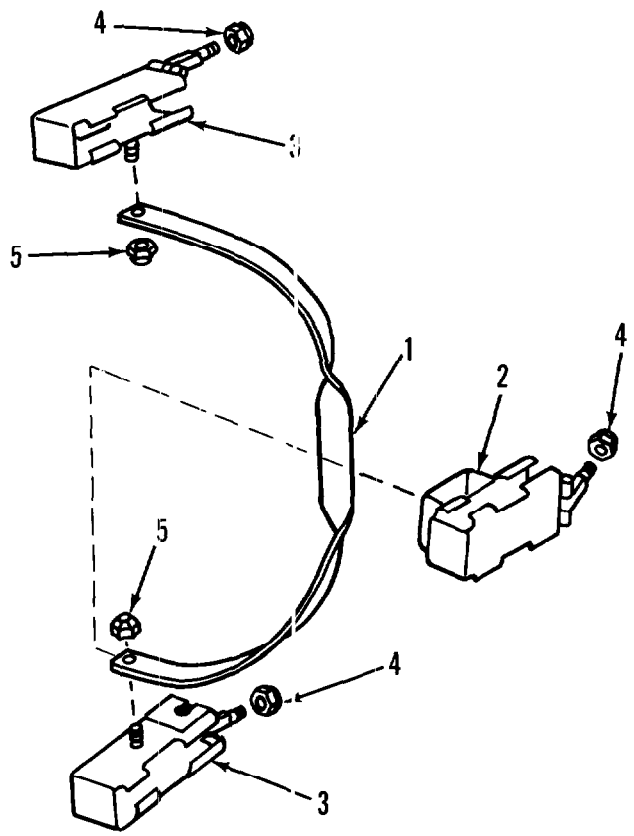
ASSEMBLY

4. ASSEMBLE CHUTE BRACE ASSEMBLY FLAT SPRING (1), SPRING RETAINER CLAMP ASSEMBLY (2), AND STUD CLAMP ASSEMBLIES (3).

   a. Screw one self-locking nut (4) onto spring retainer clamp assembly (2) and one self-locking nut (4) onto each stud clamp assembly (3).

   b. Slide spring retainer clamp assembly (2) onto flat spring (1). Turn and position spring retainer clamp assembly (2) at center of flat spring (1).

   c. Install one stud clamp assembly (3) on each end of flat spring (1), and secure with two self-locking nuts (5).



END OF TASK

4-21. REPAIR OF EJECTION CONTROL BAG AND FRAME ASSEMBLY

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Solvent, Mineral Spirit
(Item 8, App D)

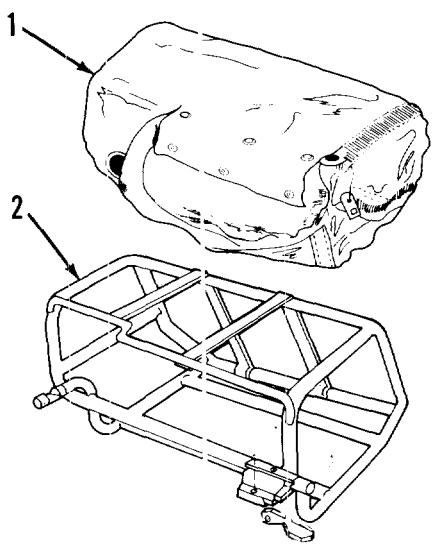
Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Equipment Condition:
Ejection control bag and frame assembly removed from M60D machine gun, para 4-16.

DISASSEMBLY

1.REMOVE CARTRIDGE BAG (1).

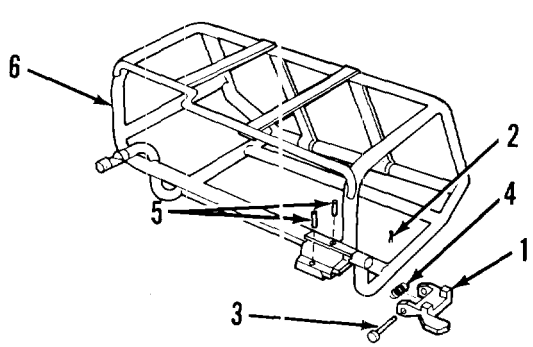
Unzip cartridge bag (1) and unsnap to remove from cartridge frame assembly (2).



2. REMOVE REAR BRACKET SAFETY LATCH (1).

a. Remove cotter pin (2), pin (3), torsion helical spring (4), and rear bracket safety latch (1).

b. Remove two spring pins (5) from frame sub-assembly (6).



CLEANING

3. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

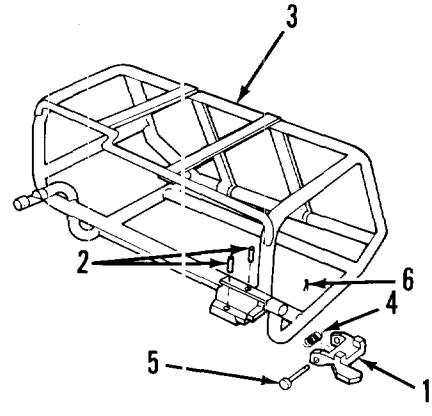
4. PERFORM GENERAL INSPECTION AND GENERAL REPAIR PROCEDURES IN ACCORDANCE WITH SECTION IV.

ASSEMBLY

5. INSTALL REAR BRACKET SAFETY LATCH (1).

   a. install two spring pins (2) flush with bracket of frame subassembly (3).

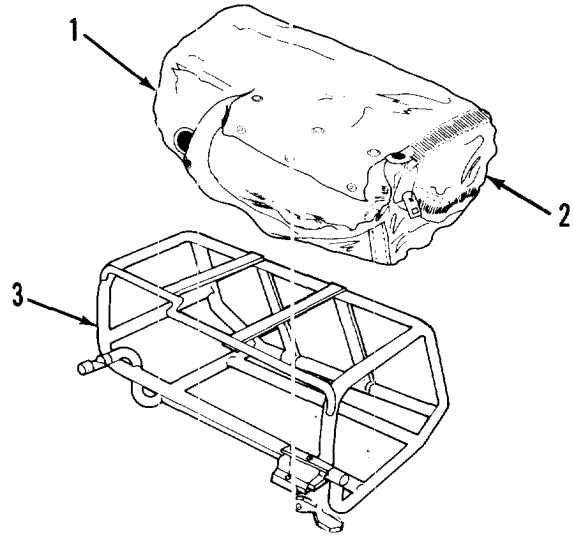
   b. Position rear bracket satety latch (1) and torsion helical spring (4) on frame subassembly (3). Fasten with pin (5) and cotter pin (6).



6. INSTALL CARTRIDGE BAG (1).

   a. With zipper (2) of empty cartridge bag (1) open, snap cartridge frame assembly (3) inside.

   b. Close zipper (2).



END OF TASK

4-22. REPAIR OF AMMUNITION BOX AND COVER ASSEMBLY

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Solvent, Mineral Spirit
(Item 8, App D)

Personnel:
MOS 45J A/C Armament
Repairman (2)

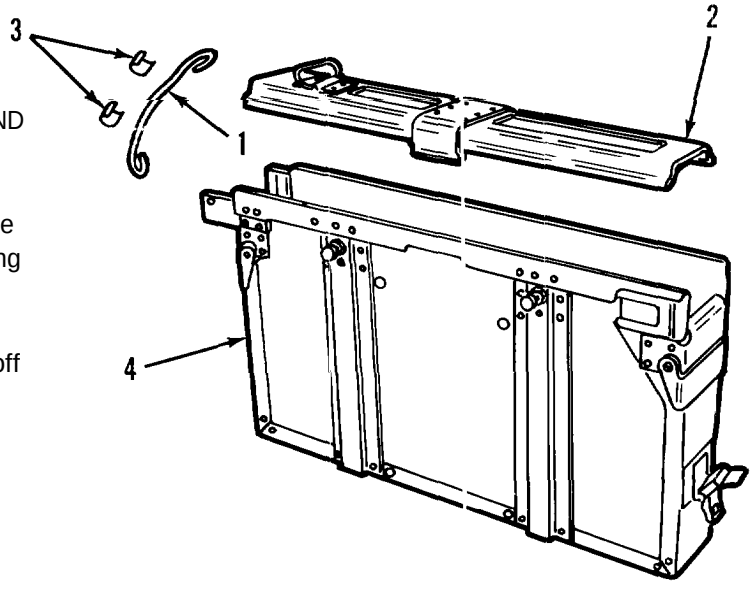
Equipment Condition:
Ammunition Box and Cover Assembly removed from M23 Mount, see para 4-17.

DISASSEMBLY

1. REMOVE WIRE ROPE ASSEMBLY (1) AND AMMUNITION COVER ASSEMBLY (2).

   a. If damaged, cut both ends of wire rope assembly (1) and discard with swaging sleeves (3) attached.

   b. Lift ammunition cover assembly (2) off ammunition box (4).



CLEANING

2. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV IN CHAPTER 4.

INSPECTION/REPAIR

3. PERFORM GENERAL INSPECTION AND GENERAL REPAIR PROCEDURES IN ACCORDANCE WITH SECTION IV IN CHAPTER 4.

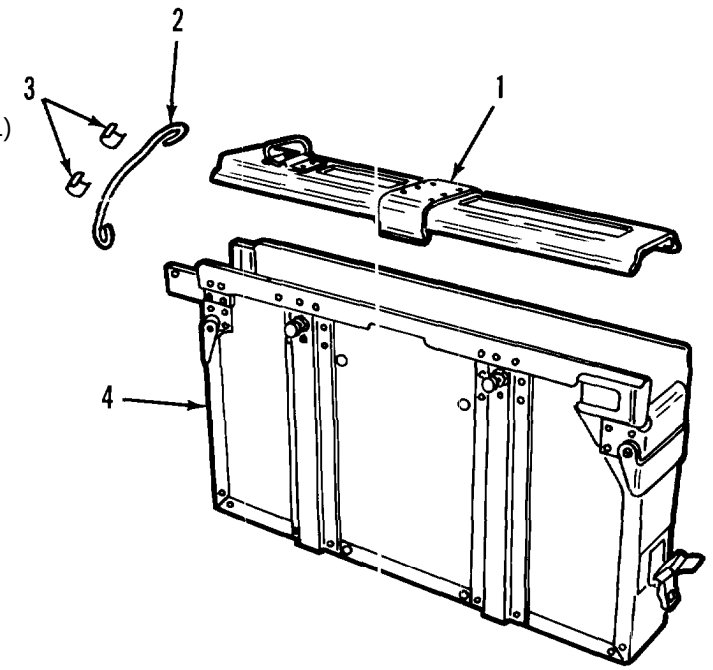
ASSEMBLY

4. INSTALL AMMUNITION COVER ASSEMBLY (1) AND WIRE ROPE ASSEMBLY (2).

   a. Thread one end of wire rope assembly (2) through hole in ammunition cover assembly (1), and secure with one swaging sleeve (3) using a swaging tool.

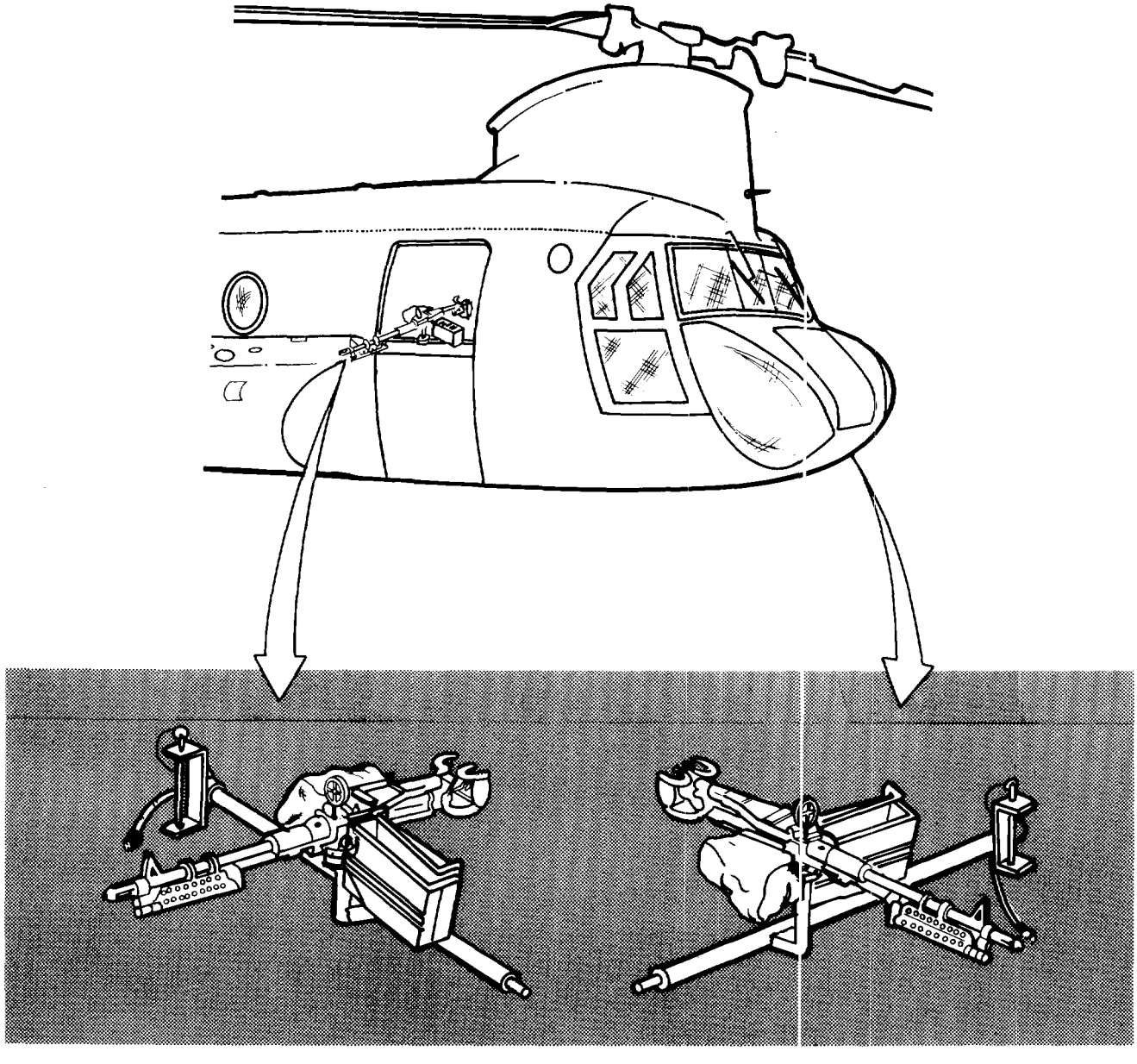
   b. Snap ammunition cover assembly (1) onto ammunition box (4).

   c. Thread other end of wire rope assembly (2) through hole in ammunition box (4), and secure with one swaging sleeve (3) using a swaging tool.



END OF TASK

Section VII. MAINTENANCE OF M24 ARMAMENT SUBSYSTEM



4-23. REMOVAL/INSTALLATION OF M24 ARMAMENT SUBSYSTEM

DESCRIPTION

This task covers: Removal and installation.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Equipment Condition:
Ejection control bag removed and installed, see REMOVAL/INSTALLATION OF M23 ARMAMENT SUBSYSTEM, para 4-16.

Ejection control bag repaired, see REPAIR OF EJECTION CONTROL BAG AND FRAME ASSEMBLY, para 4-21.

M60D machine gun removed and repaired, see REMOVAL/INSTALLATION OF M23 ARMAMENT SUBSYSTEM, para 4-16.

NOTE

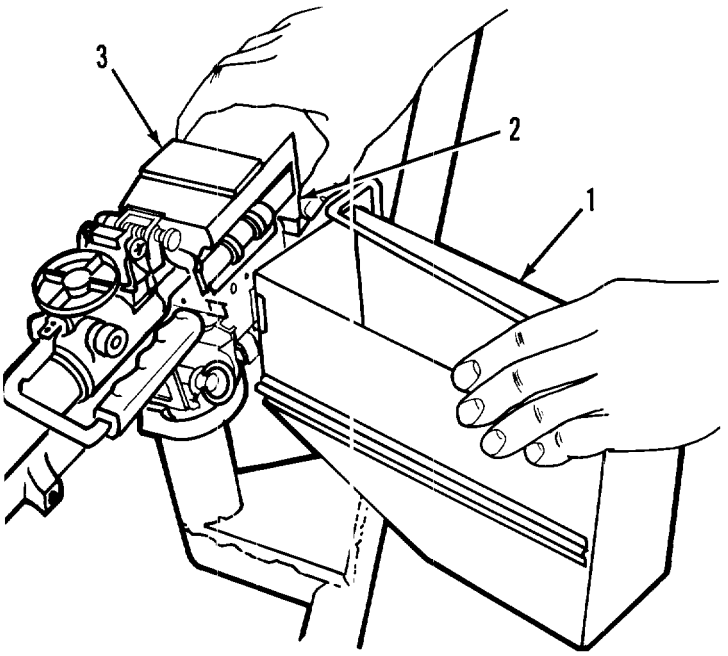
These procedures may be used for either a right side or left side subsystem.

REMOVAL

1. REMOVE AMMUNITION CAN ASSEMBLY (1).

   a. Support ammunition can assembly (1) and press on release latch (2) of M60D machine gun (3).

   b. Remove ammunition can assembly (1).



REMOVAL (cont)

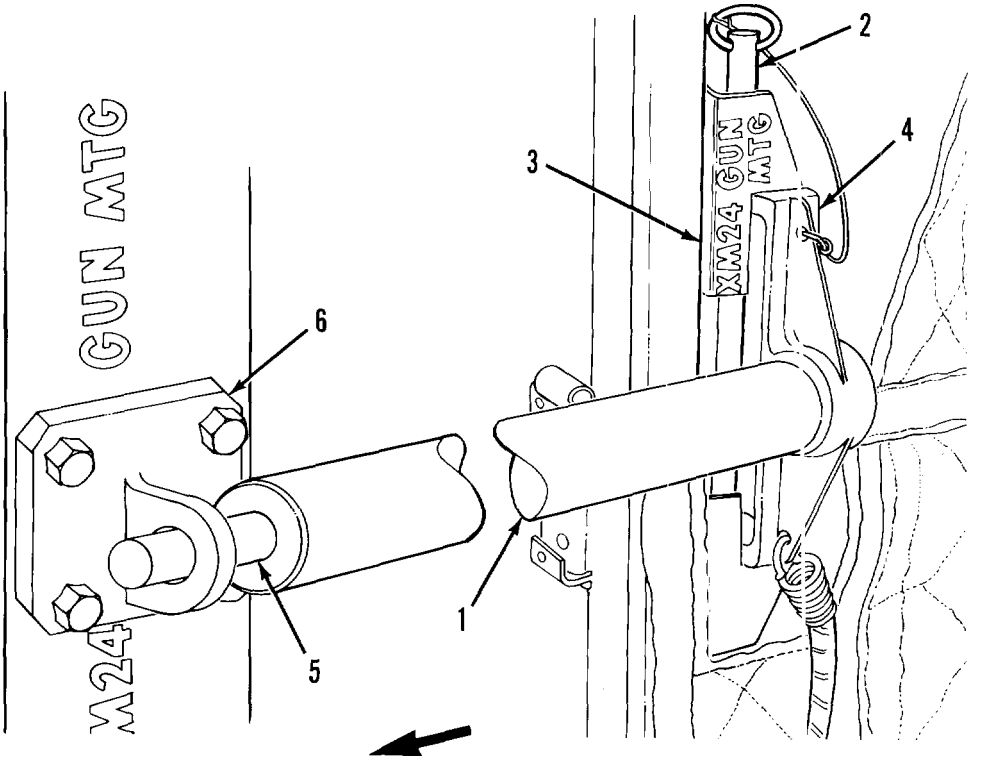
2. REMOVE M24 MOUNT ASSEMBLY (1).

a. Pull quick release pin (2) from aft mounting bracket (3).

b Swing mount bracket (4) end of M24 mount assembly (1) out, and remove mount pin (5) end from forward mount bracket (6).

NOTE

Arrow points to front of aircraft.



INSTALLATION

3. INSTALL M24 MOUNT ASSEMBLY (1).

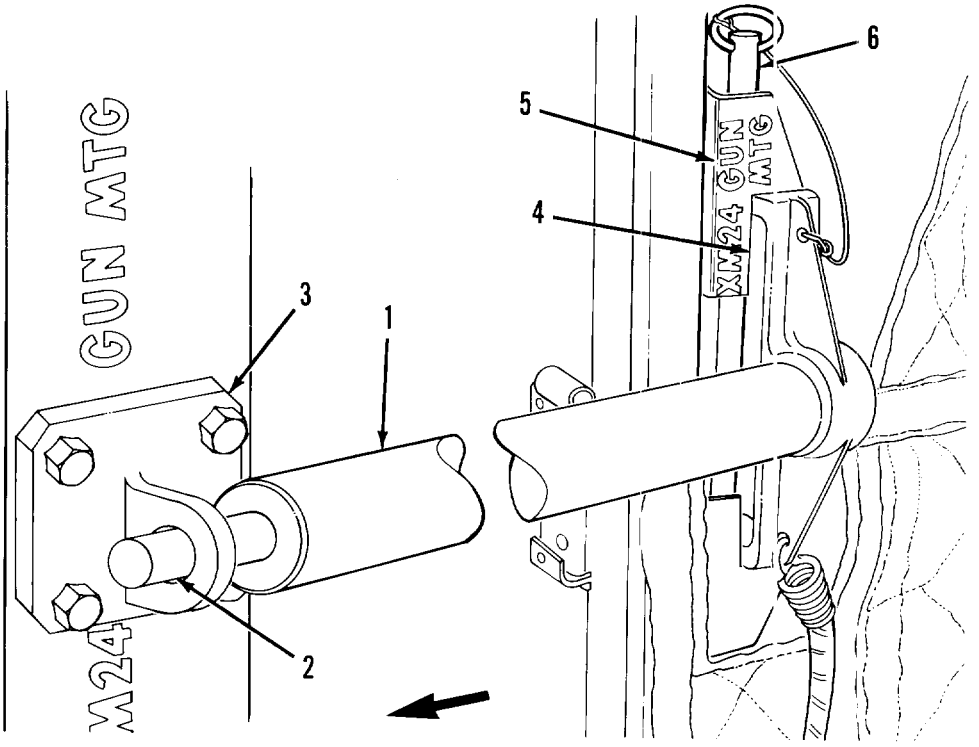
NOTE

The right side and left side M24 mount assemblies are similar in appearance. They are stamped either "FOR LH" or "FOR RH" on the apron between the cross member and pintle.

a. Using a M24 mount assembly (1) stamped "FOR RH, " insert mount pin (2) end into forward mounting bracket (3) on right hand side of helicopter.

b. Position mount bracket (4) end onto aft mounting bracket (5), and install quick release pin (6).

c. Using an M24 mount assembly (1) stamped "FOR LH, " install it on left hand escape hatch side of the helicopter in the same manner as steps (a) and (b) above.



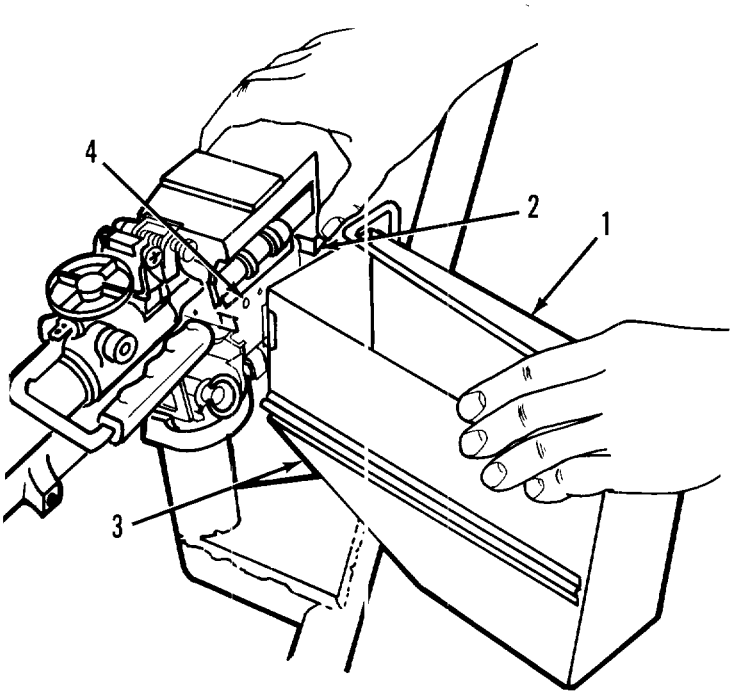
INSTALLATION (cont)

4. INSTALL AMMUNITION CAN ASSEMBLY (1).

   a. Hold open release latch (2).

   b. Position bracket end (3) of ammunition can assembly (1) against machine gun magazine bracket (4).

   c. Release latch (2) to lock ammunition can assembly (1) in place.



END OF TASK

4-24. REPAIR OF M24 LEFT SIDE AND RIGHT SIDE MOUNT ASSEMBLY

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Materials:
Oil, Lubricating (LSA)
(Item 5, App D)

Equipment Condition:
M24 mount assembly removed from helicopter, para 4-23.

DISASSEMBLY

NOTE

These procedures may be used for either a LH or RH mount assembly.

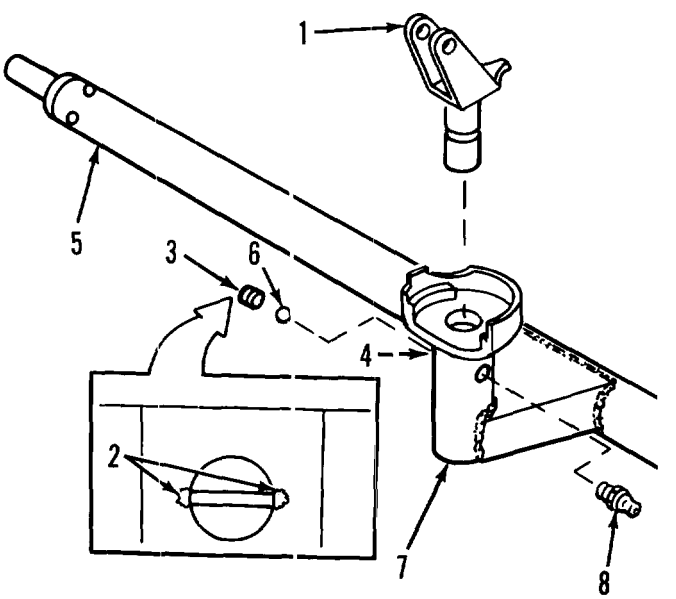
1. REMOVE PINTLE (1).

   a. Relieve staking (2), and remove ball bearing setscrew (3).

   b. Remove grease from setscrew hole (4) and position hole over a small container. Lightly tap mount subassembly (5) with a soft faced hammer to remove twelve ball bearings (6).

   c. Remove pintle (1). If pintle is not easily removed, turn mount subassembly (5) over, and carefully tap base of pintle through center of post (7) using a brass drift and hammer.

   d. Remove fitting (8).

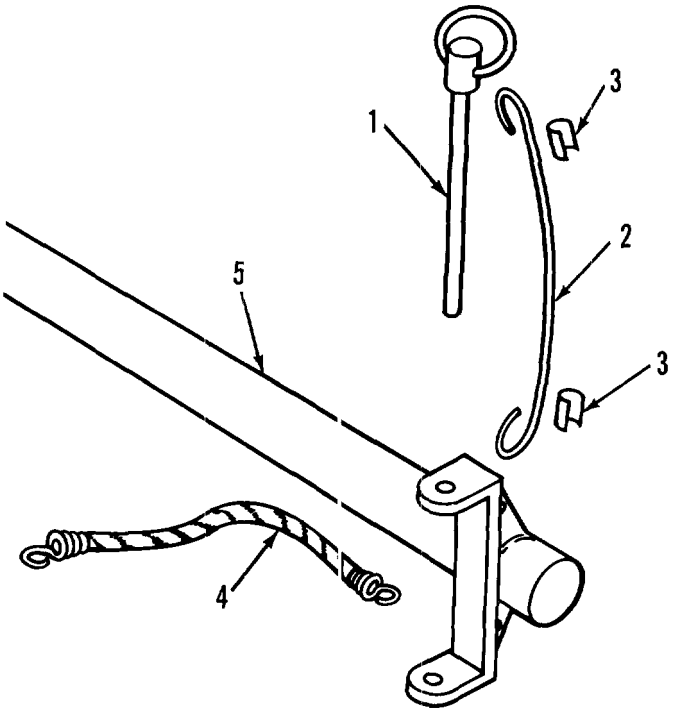


DISASSEMBLY (cont)

2. REMOVE QUICK RELEASE PIN (1), WIRE ROPE ASSEMBLY (2), SWAGING SLEEVES (3), AND SHOCK CORD ASSEMBLY (4).

   a. If damaged, cut each end of wire rope assembly (2) and remove quick release pin (1) and wire rope assembly (2). Discard wire rope assembly (2) and swaging sleeves (3).

   b. Pry hook open and remove shock cord assembly (4) from mount subassembly (5).



CLEANING

3. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

4. PERFORM GENERAL INSPECTION AND GENERAL REPAIR PROCEDURES IN ACCORDANCE WITH SECTION IV.

5. INSPECT AND REPAIR PARTS IN ACCORDANCE WITH TABULATED DATA.

Component	Possible Defect	Remedy
Pintle	Cracked or distorted	Replace pintle.
	Ball race has galling	Replace pintle.
Quick Release Pin	Broken wire rope assembly	Replace wire rope assembly.
	Loose swaging sleeves	Replace swaging sleeves.
Shock Cord Assembly	Weak elastic	Replace shock cord assembly.
	Attaching ends loose or missing	Replace shock cord assembly.
Mount Subassembly, Left Side or Right Side	Bent or distorted	Replace with next higher assembly.
	Welds cracked	Return to AVIM for weld repair.
	Positive stops badly worn, distorted, or missing	Return to AVIM for weld repair.

ASSEMBLY

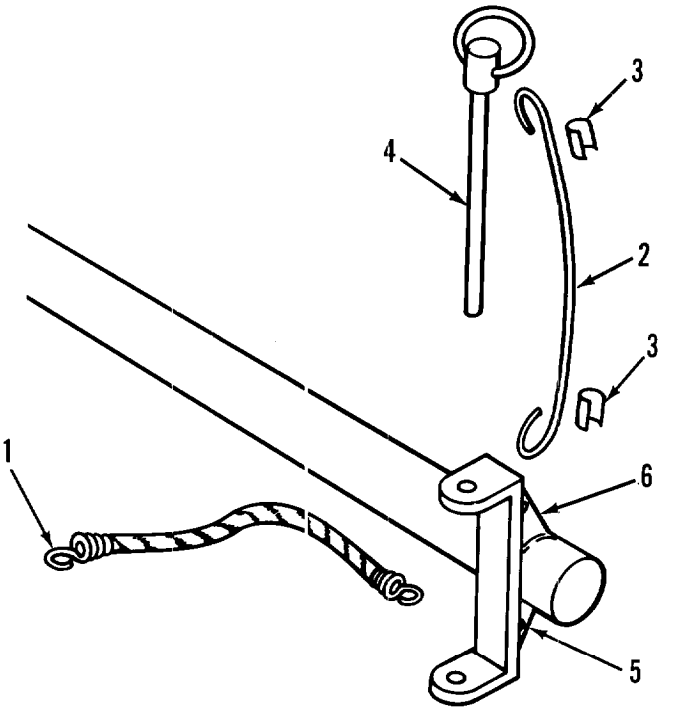
6. INSTALL SHOCK CORD ASSEMBLY (1), WIRE ROPE ASSEMBLY (2), SWAGING SLEEVES (3), AND QUICK RELEASE PIN (4).

   a. Hook one end of shock cord assembly (1) through hole (5).

   b. Bend hook closed to prevent loss. Hook shall be loose enough to allow hook on opposite end to pivot at 30 degrees above horizontal.

   c. If removed, thread one end of wire rope assembly (2) through ring of quick release pin (4). Fold and secure with one swaging sleeve (3) using swaging tool.

   d. Thread other end of wire rope assembly (2) through hole in aft mounting bracket (6). Fold and secure with other swaging sleeve (3) using swaging tool.



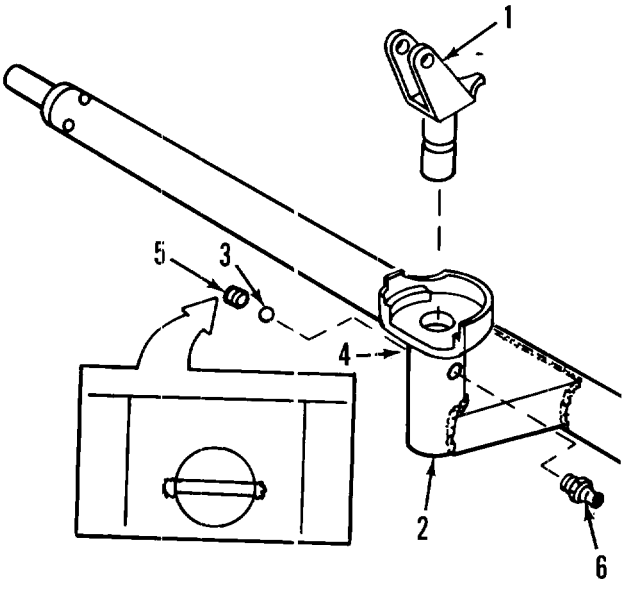
7. INSTALL PINTLE (1).

   a. Lubricate bearing surfaces of pintle (1) with lubricating oil and install into pintle post (2). Pintle (1) must turn freely.

   b. Apply lubricating oil to twelve ball bearings (3), and insert them through setscrew hole (4).

   c. Install ball bearing setscrew (5) and stake in two places 180 degrees apart. Pintle (1) must turn freely.

   d. Install fitting (6).



NOTE

A modification must be performed on the pintle post of the M24 mount assembly to install a lubrication fitting ("G" added to date box of overhaul data plate)

END OF TASK

4-25. REPAIR OF AMMUNITION CAN ASSEMBLY

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Solvent, Mineral Spirit
(Item 8, App D)

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

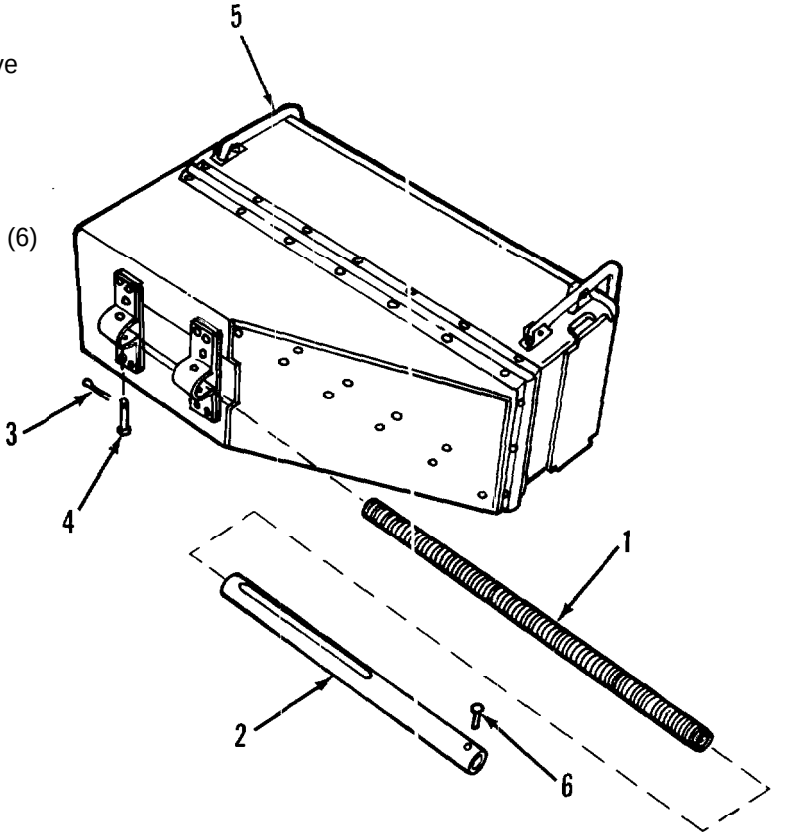
Equipment Condition:
In shop, on bench.

DISASSEMBLY

1. REMOVE COMPRESSION SPRING (1) AND HOLDING PLUNGER (2).

   a. Remove cotter pin (3) and carefully remove headed straight pin (4), compression spring (1), and holding plunger (2) from body (5).

   b. If damaged, drill and punch out solid rivet (6) from holding plunger (2).



CLEANING

2. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

3. PERFORM GENERAL INSPECTION AND GENERALREPAIR PROCEDURES IN ACCORDANCE WITH SECTION IV.

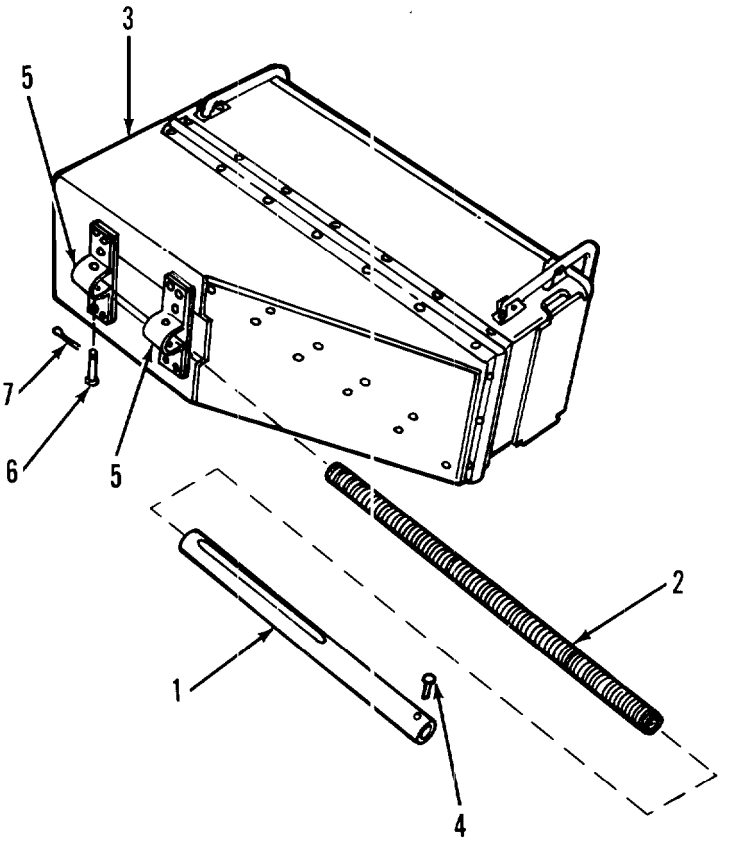
ASSEMBLY

4. INSTALL HOLDING PLUNGER (1) AND COMPRESSION SPRING (2) INTO BODY (3).

   a. If removed, insert a new solid rivet (4) into holding plunger (1) and carefully rivet over. Holding plunger (1) must be round within 0.010 inch after solid rivet is installed.

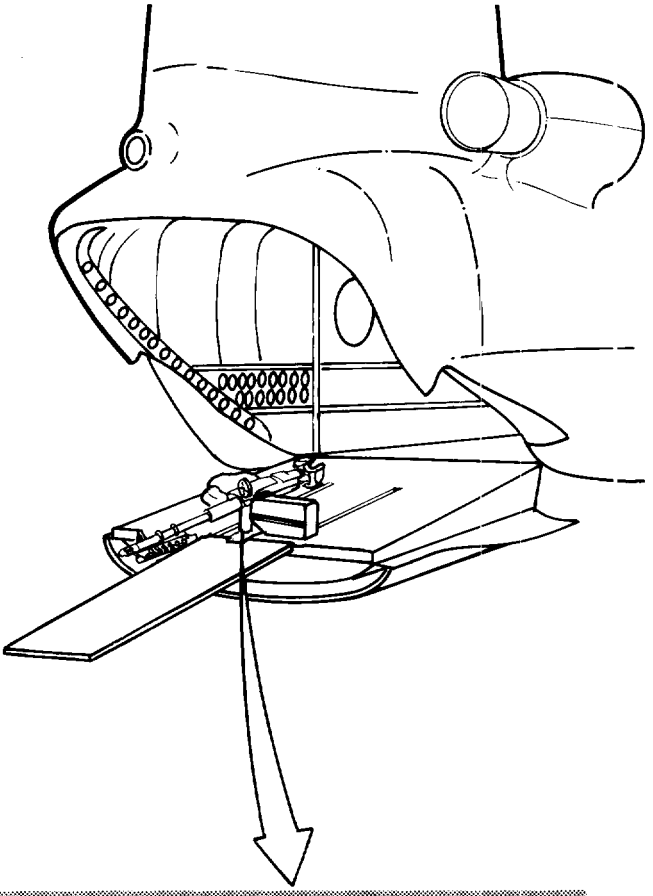
   b. Insert holding plunger (1) into compression spring (2), and install into brackets (5) on body (3).

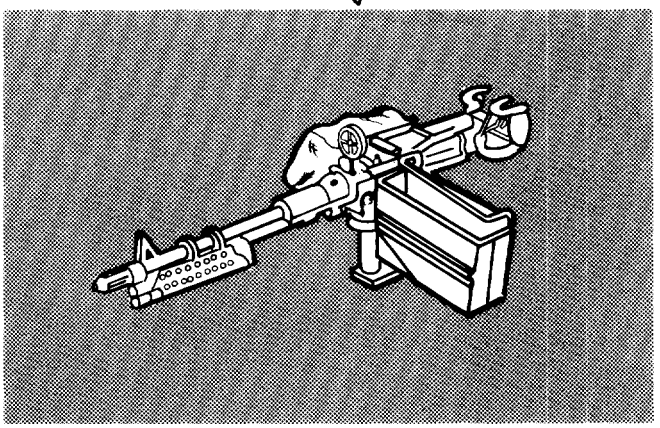
   c. Align slot of holding plunger (1) with hole in bracket, and install headed straight pin (6) and cotter pin (7).



END OF TASK

Section VIII. MAINTENANCE OF M41 ARMAMENT SUBSYSTEM





4-26. REMOVAL/INSTALLATION OF M41 ARMAMENT SUBSYSTEM

DESCRIPTION

This task covers: Removal and installation.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

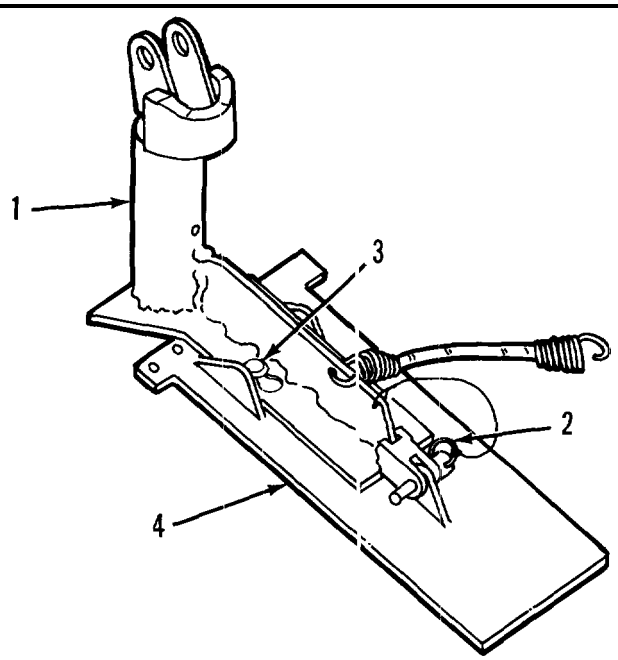
Equipment Condition:
Helicopter positioned in designated maintenance area.
Ejection control bag removed and installed, see REMOVAL/INSTALLATION OF M23 ARMAME NT SUBSYSTEM, para 4-16.
Ejection control bag required, see REPAIR OF EJECTION CONTROL BAG AND FRAME ASSEMBLY, para 4-21.
M60D machine gun removed and repaired, see REMOVAL/INSTALLATION OF M23 ARMAMENT SUBSYSTEM, para 4-16.
Ammunition can assembly removed and installed, see REM OVAL/iNSTALLATION OF M24 ARMAMENT SUBSYSTEM, para 4-23.
Ammunition can assembly repaired, see REPAIR OF AMMUNITION CAN ASSEMBLY, para 4-25.

REMOVAL

1. REMOVE M41 REAR RAMP MOUNT ASSEMBLY (1).

   a. Pull quick release pin (2),

   b. Slide M41 rear ramp mount assembly (1) up, and lift it off locating pins (3) of base plate (4) .



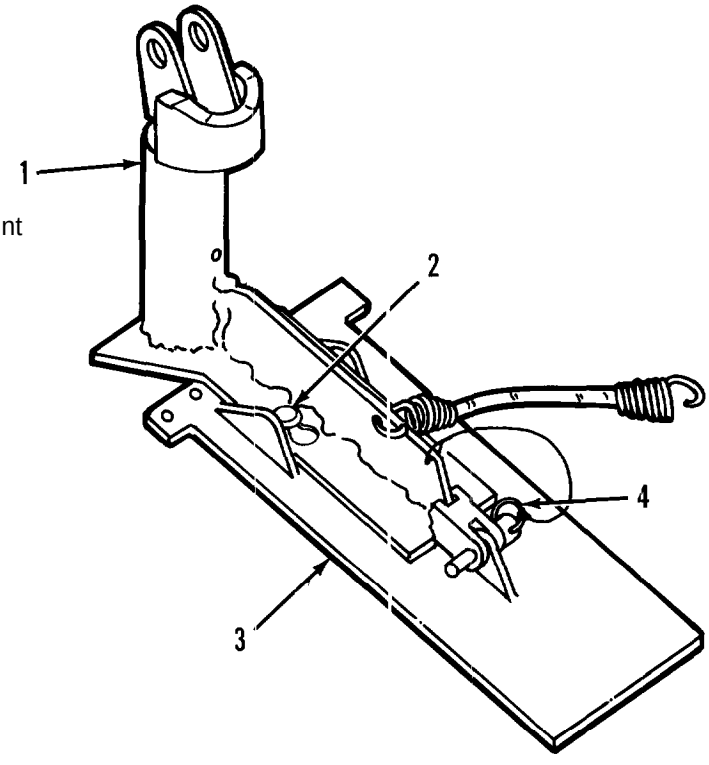
INSTALLATION

2. INSTALL M41 REAR RAMP MOUNT ASSEMBLY (1).

   a. Place holes in base of M41 rear ramp mount assembly (1) over locating pins (2) in base plate (3).

   b. Slide rear ramp mount assembly (1) down under heads of locating pins (2) to lock in operating position.

   c. Install quick release pin (4).



END OF TASK

4-27. REPAIR OF M41 REAR RAMP MOUNT ASSEMBLY

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Oil, Lubricating (LSA)
(Item 5, App D)
Solvent, Mineral Spirit
(Item 8, App D)

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Equipment Condition:
M41 rear ramp mount assembly removed from helicopter, para 4-25.

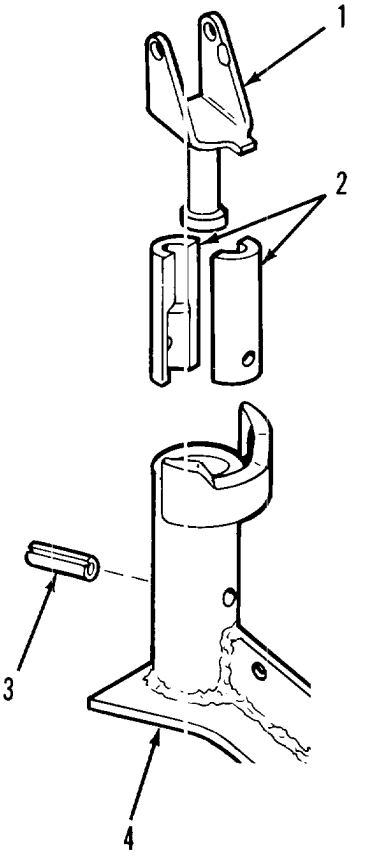
DISASSEMBLY

NOTE

Sleeve bearings must be replaced in the same position or restriction of pintle movement may occur.

1. REMOVE MOUNT PINTLE (1) AND SLEEVE BEARING (2).

Punch out spring pin (3) and lift out mount pintle (l), and two halves of sleeve bearing (2) from pintle post assembly (4).

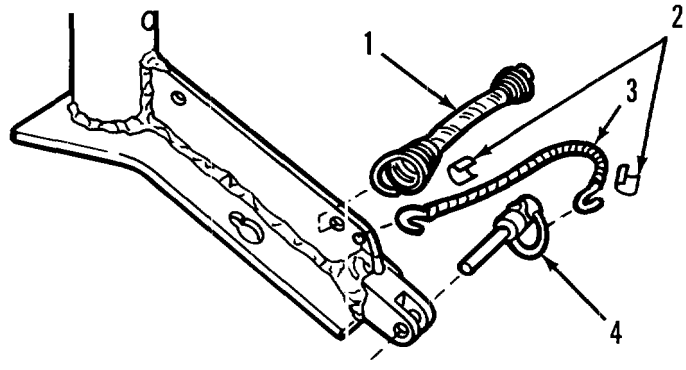


DISASSEMBLY (cont)

2. REMOVE ELASTIC CORD ASSEMBLY (1), SWAGING SLEEVES (2), SAFETY WIRE ROPE (3), AND QUICK RELEASE PIN (4).

   a. Pry hook open and remove elastic cord assembly (1).

   b. If damaged, cut each end of safety wire rope (3), and remove quick release pin (4) and safety wire rope (3). Discard safety wire rope (3) and swaging sleeves (2).



CLEANING

3. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

4. INSPECT AND REPAIR IN ACCORDANCE WITH TABULATED DATA.

Component	Possible Defect	Remedy
Mount Pintle	Cracked or distorted	Replace mount pintle.
Sleeve Bearings	Damaged bearing surfaces	Replace sleeve bearings.
Quick Release Pin	Badly bent	Replace quick release pin.
	Improper operation	Replace quick release pin.
Safety Wire Rope	Broken safety wire rope	Replace safety wire rope.
	Loose swaging sleeves	Replace swaging sleeves.
Elastic Cord Assembly	Weak elastic	Replace elastic cord assembly.
	Attaching ends loose or missing	Replace elastic cord assembly.
Pintle Post Assembly	Welds cracked	Return to AVIM for weld repair.

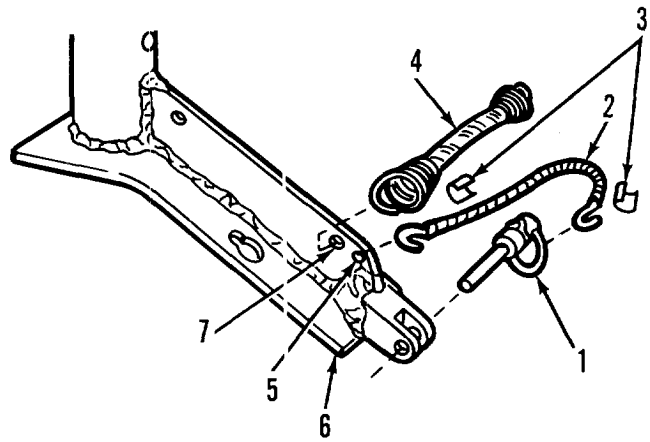
ASSEMBLY

5. INSTALL QUICK RELEASE PIN (1), SAFETY WIRE ROPE (2), SWAGING SLEEVES (3), AND ELASTIC CORD ASSEMBLY (4).

   a. If removed, thread one end of safety wire rope (2) through quick release pin (1). Fold and secure with one swaging sleeve (3) using swaging tool.

   b. Thread other end of safety wire rope (2) through hole (5) in pintle post assembly (6). Fold and secure with other swaging sleeve (3) using swaging tool.

   c. Hook one end of elastic cord assembly (4) through hole (7) in pintle post assembly (6), and bend hook closed to prevent loss.



NOTE

Sleeve bearings must be replaced in the same position or restriction of pintle movement may occur.

6. INSTALL MOUNT PINTLE (1) AND SLEEVE BEARING (2).

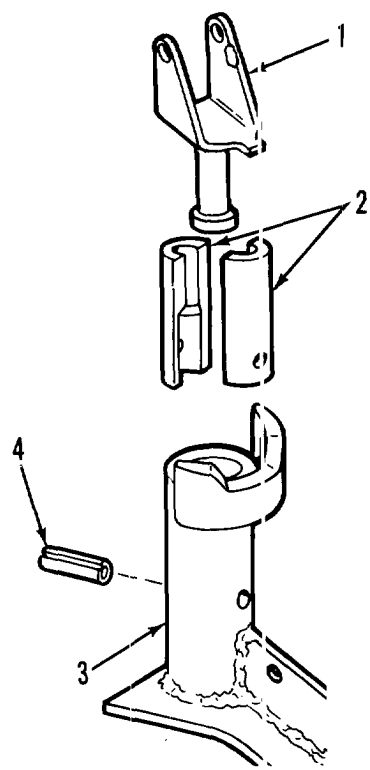
NOTE

Go to step 7 if new sleeve bearing halves are required.

   a. Coat inner surface of sleeve bearing (2) and bearing surface of mount pintle (1) with lubricating oil.

   b. Assemble sleeve bearing (2) around mount pintle (1) and install as a unit in pintle post assembly (3).

   c. Align holes and install spring pin (4).



ASSEMBLY (cont)

7. INSTALLING NEW SLEEVE BEARING (1).

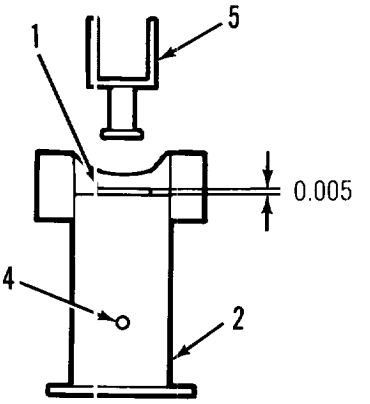
a. Place new sleeve bearing (1) halves in pintle post assembly (2). Sleeve bearing (1) shall not protrude more than 0.005 inch above pintle post assembly (2).

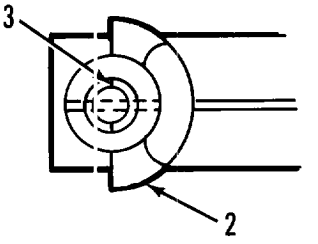
b. Position split line (3) in sleeve bearing (1) 90° from direction of drilling, Secure pintle post assembly (2) for drilling.

c. Using pin hole (4) as a guide, drill a 3/8 inch hole through sleeve bearing (1) halves.

d. Remove sleeve bearing (1) halves after drilling and remove any sharp edges. Hole should measure 0.375 inches in diameter.

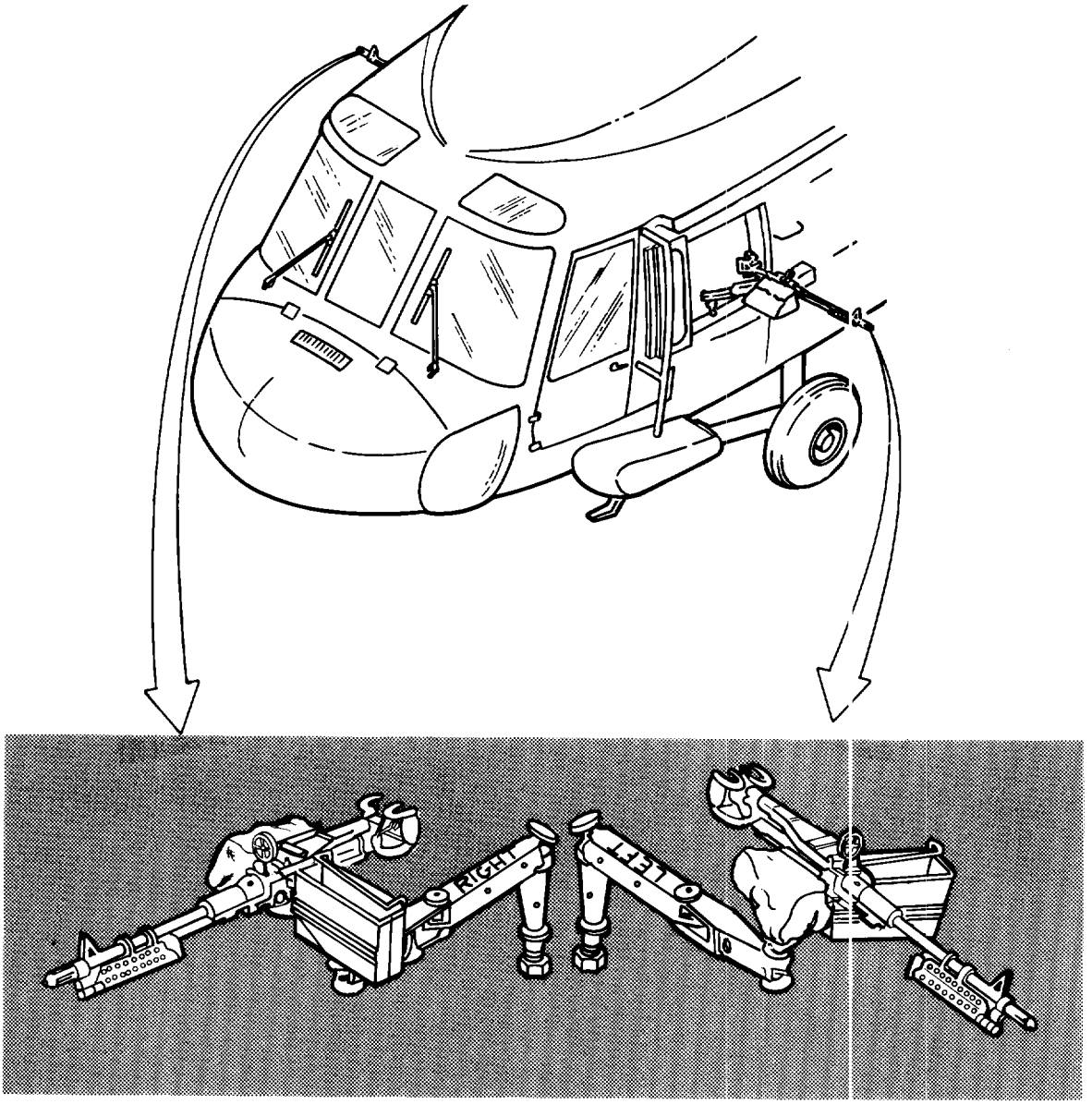
e. Install mount pintle (5) and new sleeve bearing (1) in accordance with step 6 above.





END OF TASK

Section IX. MAINTENANCE OF M144 ARMAMENT SUBSYSTEM



4-28. REMOVAL/INSTALLATION OF M144 ARMAMENT SUBSYSTEM

DESCRIPTION

This task covers: Removal and installation.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Oil, Lubricating (LSA)
(Item 5, App D)

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

References:
TM 9-1005-224-24

Equipment Condition:
Helicopter positioned in designated maintenance area.
M60D machine gun removed and repaired, see REMOVAL/INSTALLATION OF M23 ARMAMENT SUBSYSTEM, para 4-16.
Ejection control bag removed and installed, see REMOVAL/INSTALLATION OF M23 ARMAMENT SUBSYSTEM, para 4-16.
Ejection control bag repaired, see REPAIR OF EJECTION CONTROL BAG AND FRAME ASSEMBLY, para 4-21.
Ammunition can assembly removed and installed, see REMOVAL/INSTALLATION OF M24 ARMAMENT SUBSYSTEM, para 4-23.
Ammunition can assembly repaired, see REPAIR OF AMMUNITION CAN ASSEMBLY para 4-25.

NOTE

These procedures may be used for either a right or left side subsystem.

REMOVAL

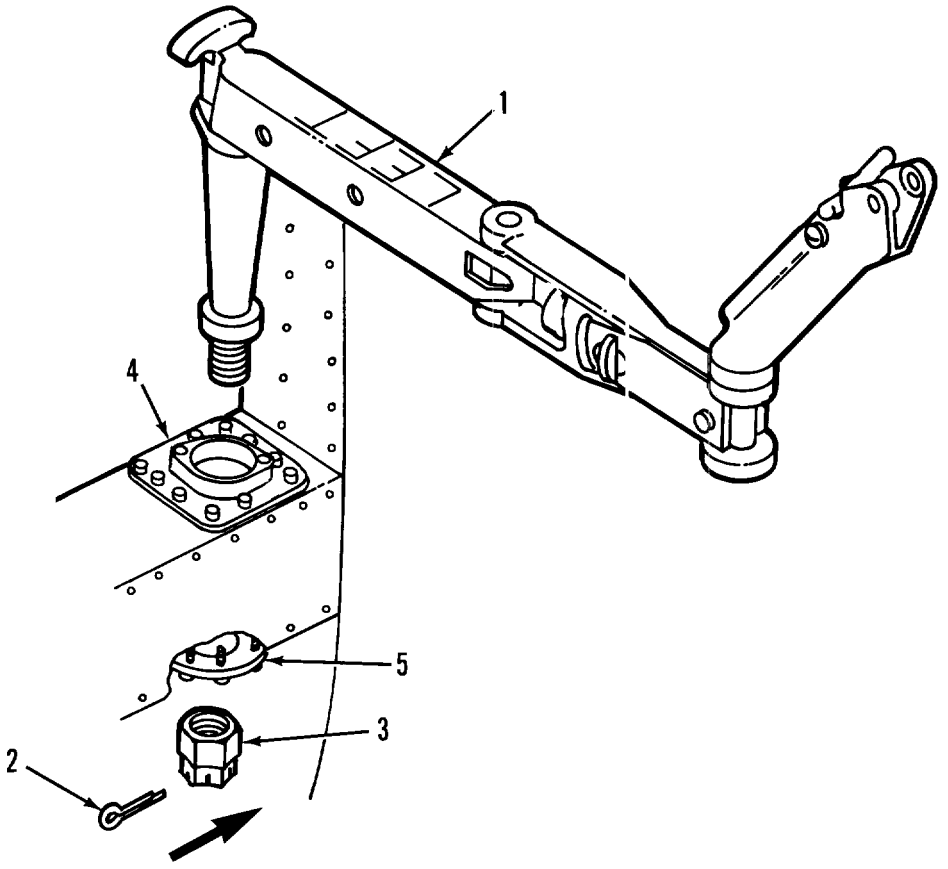
1. REMOVE M144 LEFT HAND AND RIGHT HAND GUN MOUNT ASSEMBLY (1).

   a. Remove cotter pin (2) and slotted plain nut (3).

   b. Lift M144 gun mount assembly (1) out of upper support bushing (4), and lower support bushing (5) on helicopter fuselage.

NOTE

Arrow points to front of aircraft.



INSTALLATION

2. INSTALL M144 LEFT HAND AND RIGHT HAND GUN MOUNT ASSEMBLY (1).

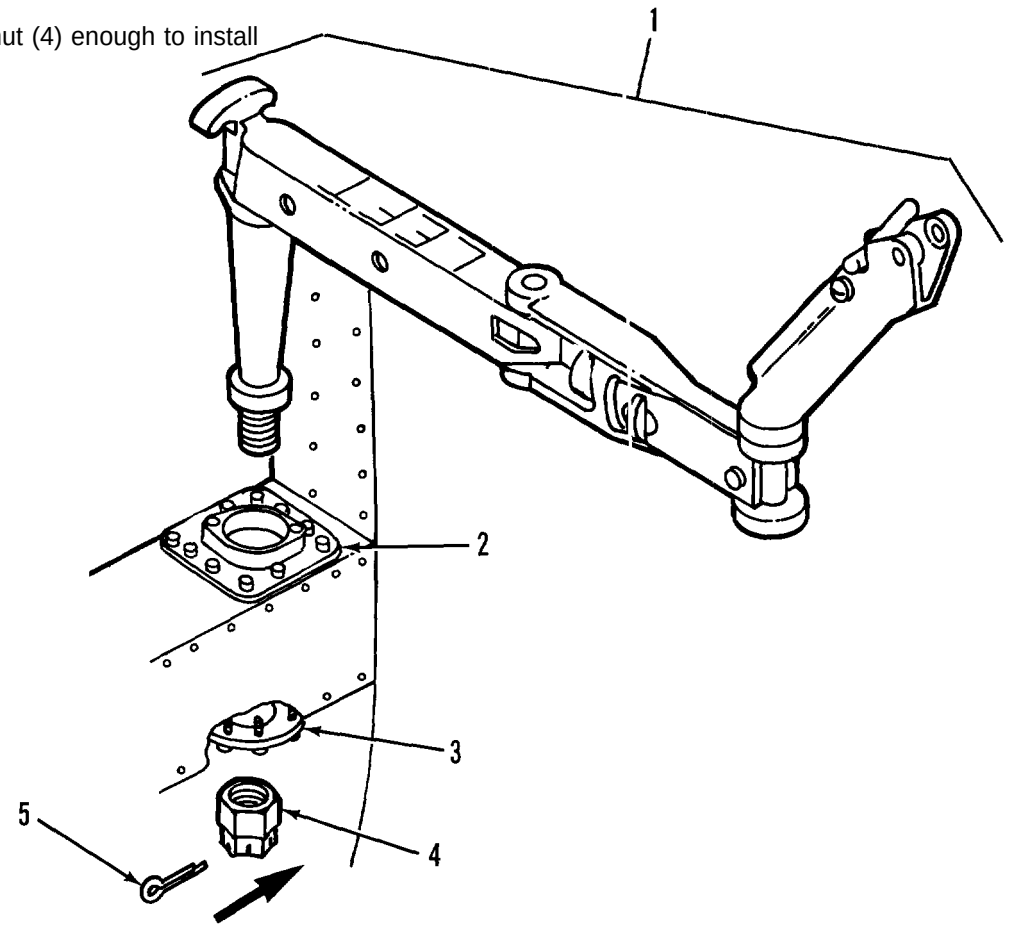
NOTE

The right side and left side M144 gun mount assemblies are similar in appearance. They are stamped either RIGHT or LEFT on the mount support.

a. Install M144 gun mount assembly (1) through upper support bushing (2), and lower support bushing (3).

b. Lubricate face of slotted plain nut (4) with lubricant oil, and install fingertight.

c. Back off slotted plain nut (4) enough to install cotter pin (5).



END OF TASK

4-29. REPAIR OF M144 LEFT HAND AND RIGHT HAND GUN MOUNT ASSEMBLY

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Lubricant, Solid Film
(Item 4, App D)
Solvent, Mineral Spirit
(Item 8, App D)

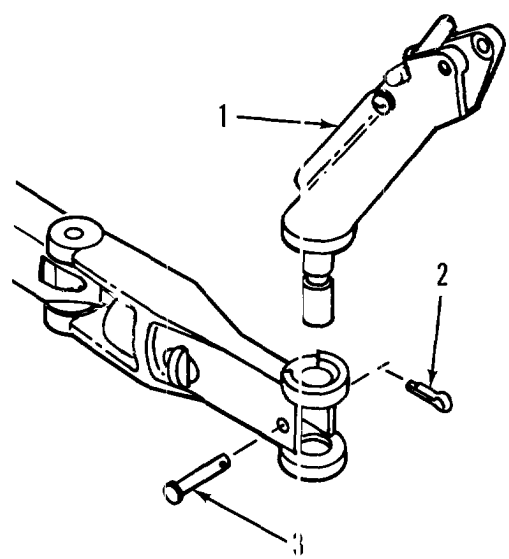
Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Equipment Condition:
On bench, in shop.

DISASSEMBLY

1. REMOVE MOUNT PINTLE ASSEMBLY (1).

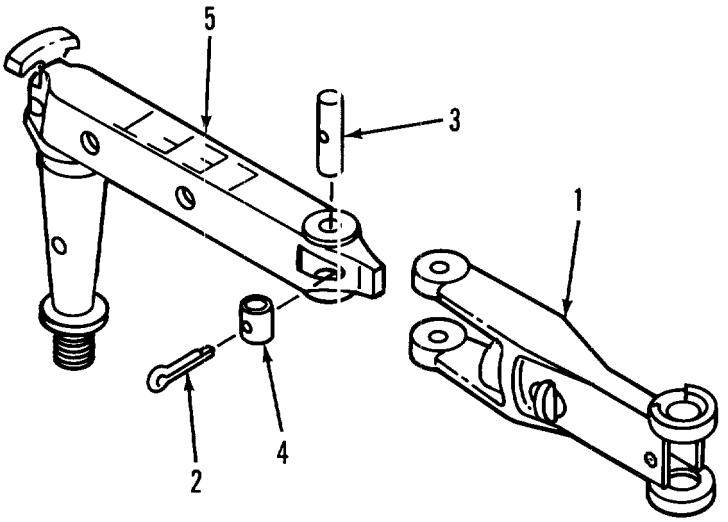
Remove cotter pin (2), headed straight pin (3), and mount pintle assembly (1).



DISASSEMBLY (cont)

2. REMOVE LEFT HAND OR RIGHT HAND ARM ASSEMBLY RELEASE (1).

   Remove cotter pin (2), headless straight pin (3), pivot pin sleeve (4), and arm assembly release (1) from LH or RH inboard fitting (5).

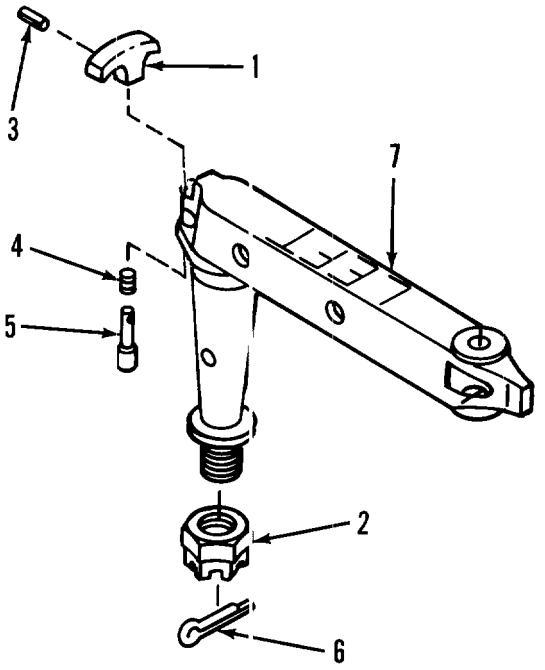


3. REMOVE KNOB (1) AND SLOTTED PLAIN NUT (2).

   a. Remove spring pin (3).

   b. Remove hand knob (1), compression helical spring (4), and plunger mount lock (5).

   c. Remove cotter pin (6) and slotted plain nut (2) from LH or RH inboard fitting (7).



CLEANING

4. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

5. PERFORM GENERAL INSPECTION AND GENERAL REPAIR PROCEDURES IN ACCORDANCE WITH SECTION IV.

6. INSPECT AND REPAIR IN ACCORDANCE WITH TABULATED DATA.

Component	Possible Defect	Remedy
Mount Pintle Assembly	Cracked or distorted	Replace mount pintle.
Arm Assembly Release	Cracked or distorted	Replace arm assembly release.
Inboard Fitting	Cracked or distorted	Replace inboard fitting.

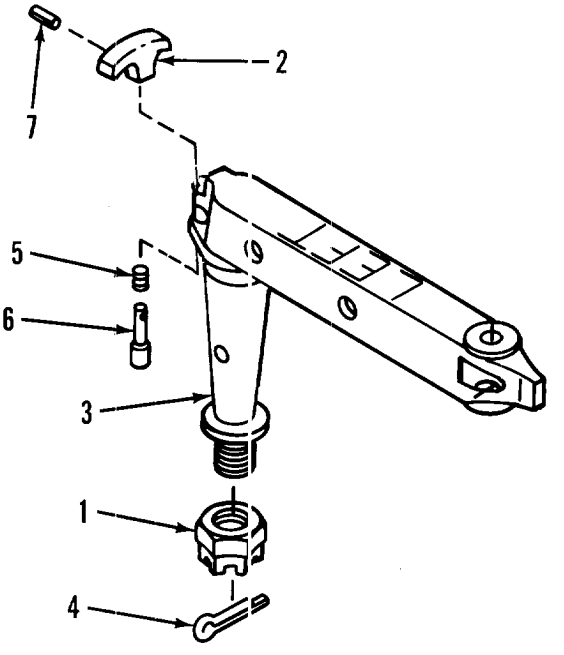
ASSEMBLY

7. REPLACE SLOTTED PLAIN NUT (1) AND KNOB (2).

   a. Install slotted plain nut (1) loosely on inboard fitting (3), and fasten with cotter pin (4).

   b. Position compression helical spring (5) on plunger mount lock (6), and install into inboard fitting (3).

   c. Place knob (2) down over plunger mount lock (6), aline holes, and install spring pin (7).

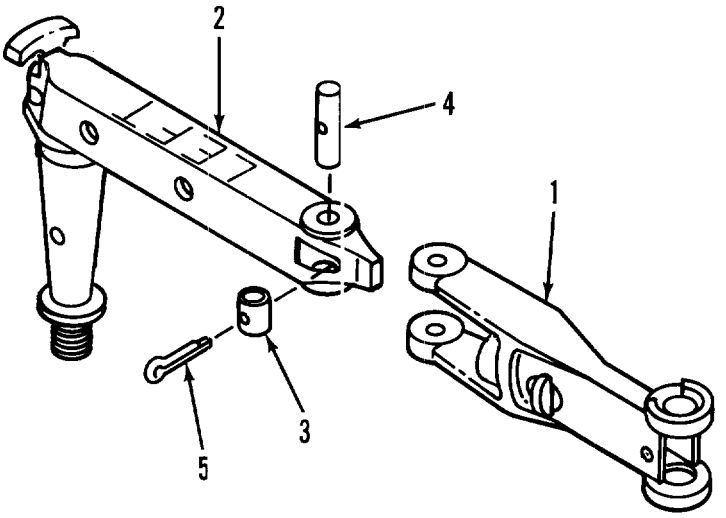


ASSEMBLY (cont)

8. INSTALL LEFT HAND OR RIGHT HAND ARM ASSEMBLY RELEASE (1).

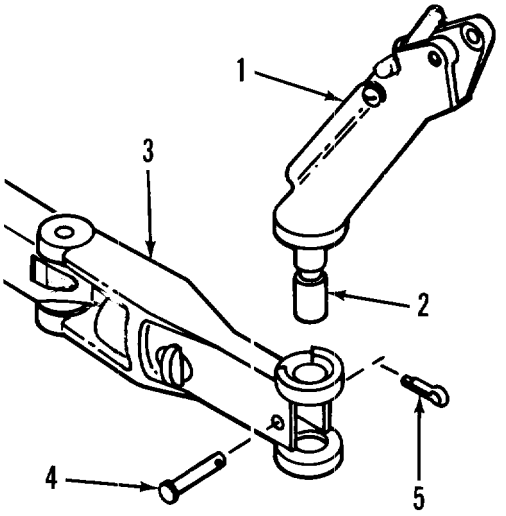
   a. Install arm assembly release (1) on inboard fitting (2), aline holes, and insert pivot pin sleeve (3) and headless straight pin (4).

   b. Secure with cotter pin (5).



9. INSTALL MOUNT PINTLE ASSEMBLY (1).

   Apply solid film lubricant to bearing surface (2) of mount pintle (1). Install mount pintle (1) into arm assembly release (3), and secure with headed straight pin (4) and cotter pin (5).



END OF TASK

4-30. REPAIR OF MOUNT PINTLE

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Sealing Compound
(Item 7, App D)
Solvent, Mineral Spirit
(Item 8, App D)

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

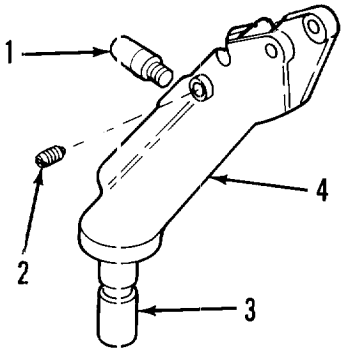
Equipment Condition:
Mount pintle removed from M144 gun mount assembly, para 4-29.

DISASSEMBLY

1. REMOVE HANDLE (1)

a. Loosen and remove ball plunger (2) . Move handle (1) to position in slot nearest swivel fitting end (3) of mount pintle (4).

b. Unscrew and remove handle (1).

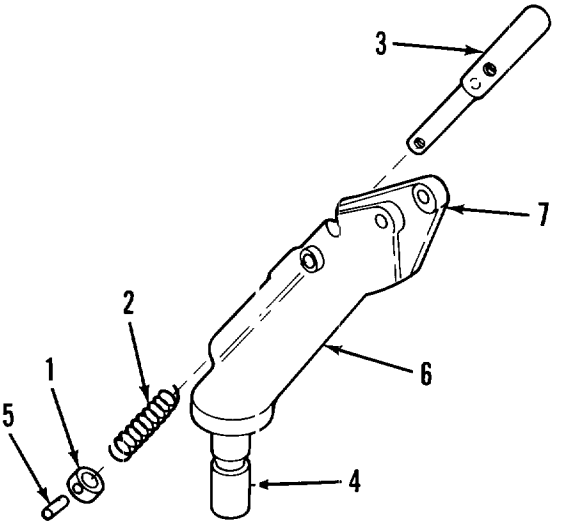


2. REMOVE STOW LOCK PLUNGER RETAINER (1), COMPRESSION HELICAL SPRING (2), AND DETENT LOCK PLUNGER (3).

a. Move detent lock plunger (3) toward swivel fitting end (4) to expose spring pin (5) and stow lock plunger retainer (1).

b. Remove spring pin (5), stow lock plunger retainer (1), and compression helical spring (2) from mount pintle (6).

c. Slide detent lock plunger (3) toward gun mount end (7) of mount pintle mount (6), and remove detent lock plunger (3).



CLEANING

3. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

4. PERFORM GENERAL INSPECTION AND GENERAL REPAIR PROCEDURES IN ACCORDANCE WITH SECTION IV.

5. INSPECT AND REPAIR IN ACCORDANCE WITH TABULATED DATA,

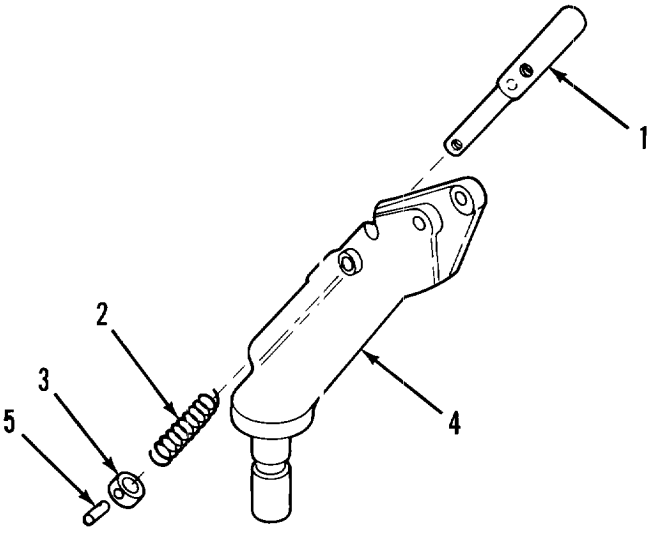
Component	Possible Defect	Remedy
Mount Pintle	Cracked or broken	Replace mount pintle.
Mount Pintle	0.3155 - 0.3170 inch diameter gun mounting holes measure larger than O.3280 inch ID maximum or out-of-roundness is more than 0.010 inch maximum.	Replace mount pintle

ASSEMBLY

6. INSTALL DETENT LOCK PLUNGER (1), COMPRESSION HELICAL SPRING (2), AND STOW LOCK PLUNGER RETAINER (3).

   a. Install detent lock plunger (1) into mount pintle (4), and seat fully to expose small end of detent lock plunger (1).

   b. install compression helical spring (2) and stow lock plunger retainer (3) over small end of detent lock plunger (1). Aline holes and install spring pin (5) through stow lock plunger retainer (3) and detent lock plunger (1).

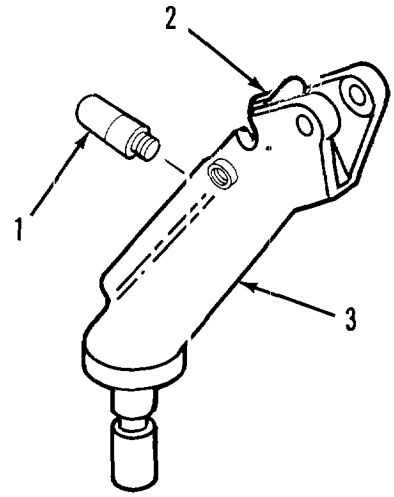


ASSEMBLY (cont)

7. INSTALL HANDLE (1).

   a. Press down and turn detent lock plunger (2) in pintle bore to press compression helical spring and aline handle hole in detent lock plunger (2) to mount pintle (3) slot.

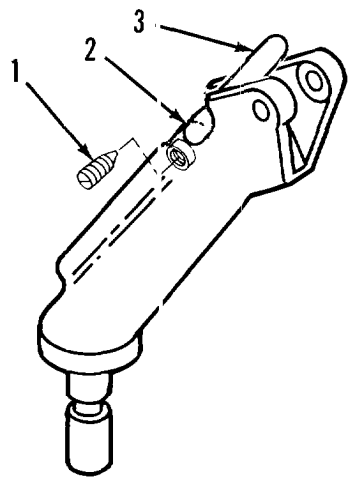
   b. Coat threads on handle (1) with sealing compound, and install handle (1) into detent lock plunger (2).



8. INSTALL BALL PLUNGER (1).

   a. Move handle (2) up slot into locked position.

   b. Install ball plunger (1) to secure detent lock plunger (3) in locked position.



END OF TASK

4-31. REPAIR OF LEFT HAND AND RIGHT HAND ARM ASSEMBLY RELEASE

DESCRIPTION

This task covers: Disassembly, cleaning, inspection/repair, and assembly.

INITIAL SETUP

Tools/Test and Support Equipment:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Materials:
Solvent, Mineral Spirit
(Item 8, App D)

Personnel Required:
MOS 45J A/C Armament
Repairman (2)

Equipment Condition:
Arm assembly release removed from inboard fitting, para 4-29.

DISASSEMBLY

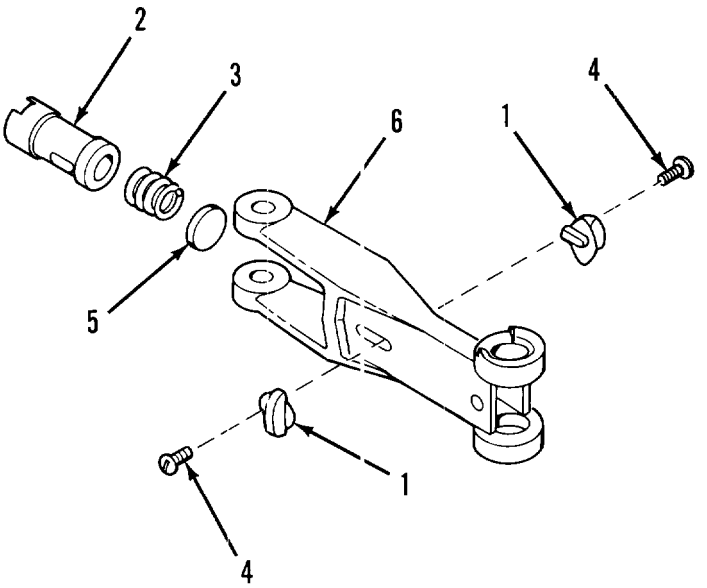
WARNING

Helical retainer is under spring tension. Do not remove slide restrictors, releasing spring, before helical retainer is trapped or injury to personnel may result.

1. REMOVE TWO SLIDE RESTRICTORS (1), HELICAL RETAINER (2), AND COMPRESSION HELICAL SPRING (3).

   a. With restraining pressure on helical retainer (2) remove two self-locking screws (4) and two slide restrictors (1).

   b. Remove helical retainer (2), compression helical spring (3), and disk (5) from support arm (6) LH or RH.



CLEANING

2. PERFORM GENERAL CLEANING PROCEDURES IN ACCORDANCE WITH SECTION IV.

INSPECTION/REPAIR

3. PERFORM GENERAL INSPECTION AND GENERAL REPAIR PROCEDURES IN ACCORDANCE WITH SECTION IV.

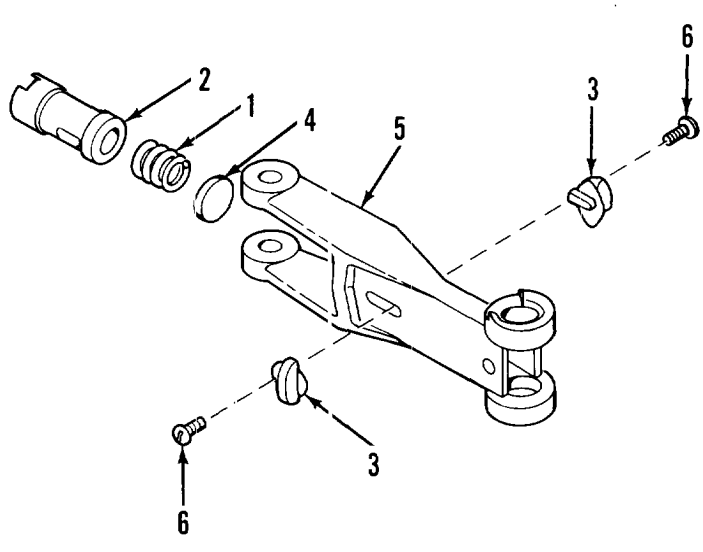
ASSEMBLY

1. INSTALL COMPRESSION HELICAL SPRING (1), HELICAL RETAINER (2), AND TWO SLIDE RESTRICTORS (3).

   a. Install disk (4), compression helical spring (1), and helical retainer (2) into support arm (5).

   b. Press on helical retainer (2) to compress compression helical spring (1) and aline screw holes in helical retainer (2) with holes in support arm (5).

   c. While maintaining pressure on helical retainer (2), install two slide restrictors (3) and fasten with two self-locking screws (6).



END OF TASK

CHAPTER 5

AVIATION INTERMEDIATE MAINTENANCE INSTRUCTIONS

CHAPTER CONTENTS

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

Section Contents

COMMON TOOLS AND EQUIPMENT

5-1. For authorized common tools and equipment refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

5-2. There are no special tools, Test, Measurement, and Diagnostic Equipment (TMDE) or special support equipment required for the armament subsystems.

REPAIR PARTS

5-3. Repair parts are listed and illustrated in the repair parts and special tools list TM 9-1005-262-23P covering aviation intermediate maintenance for the armament subsystems.

Section II. SERVICE UPON RECEIPT

Section Contents

GENERAL

5-4. Armament subsystems, or components or subassemblies of armament subsystems, that are received by the AVIM shop may be placed in one of two categories:

1. Components or subassemblies that have been taken out of service because of malfunction or damage, and returned from the using organization.
2. New or reconditioned subsystems, components, or subassemblies that are either new from the factory or have been reconditioned at depot.

INSPECTION

5-5. Inspect subsystems, components, or subassemblies returned by using organizations to verify reported malfunction, or damage, and to schedule required repair. New or reconditioned subsystems, components, or subassemblies shall be examined for signs of possible shipping damage. Damaged equipment will be returned to depot or to the factory, as applicable.

Section III. PRE-EMBARKATION INSPECTION OF MATERIEL IN UNITS ALERTED FOR OVERSEAS MOVEMENT

GENERAL

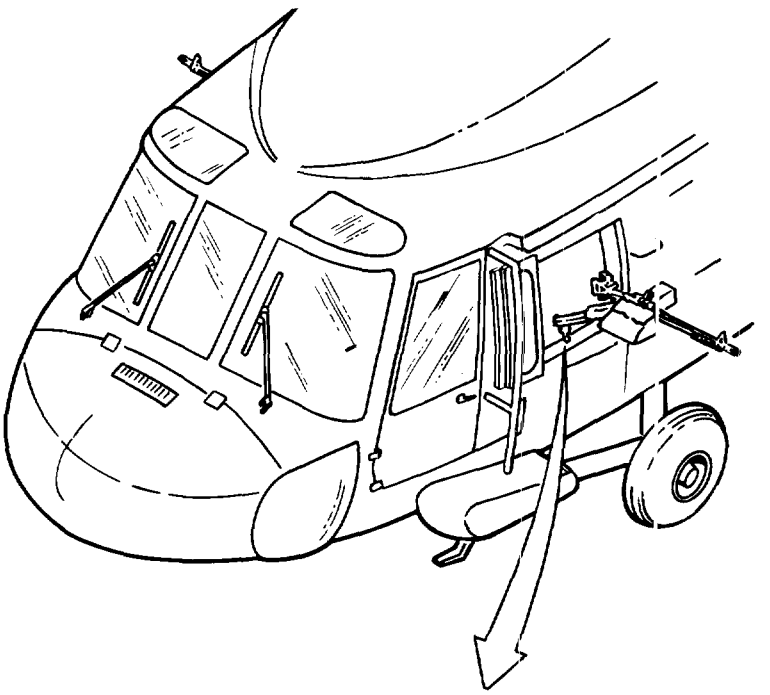
5-6. This inspection is conducted on materiel in alerted units scheduled for overseas duty to make sure that such materiel will not become unserviceable in a relatively short time. The inspection prescribes a higher percentage of remaining usable life in serviceable materiel to meet a specific need beyond minimum serviceability.

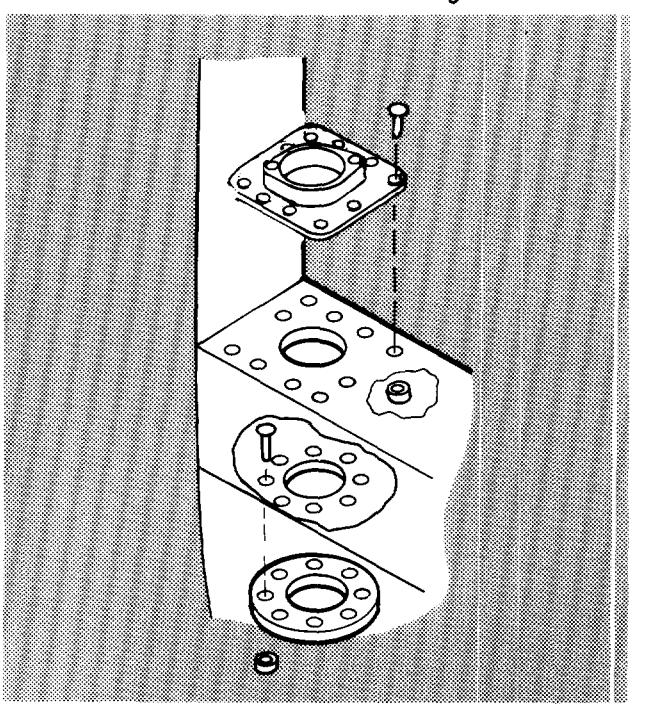
INSPECTION

5-7. The inspection points are listed below.

1. Screw heads must be in serviceable condition, and threads must not be stripped. Internal threads must not be stripped.
2. Materiel must be free of burrs, particularly those on functional surfaces.
3. Parts must not be cracked, bent, distorted, or damaged, and they must be free of detrimental wear.
4. Painted surfaces must be free of bare spots.
5. Operating controls must function smoothly.
6. Identification plates must be present and secured.

Section IV. MAINTENANCE OF M144 ARMAMENT SUBSYSTEM





5-8. REMOVAL/INSTALLATION OF LEFT HAND AND RIGHT HAND UPPER AND LOWER BUSHING SUPPORTS

DESCRIPTION

This task covers: Removal and installation.

INITIAL SETUP

Tools:
Tool Set, A/C Armament
Repairman: MOS 45J Supplemental

Personnel:
MOS 45J A/C Armament
Repairman (2)

Equipment Condition:
M144 gun mount assembly removed from helicopter, see REMOVAL/INSTALLATION OF M144 ARMAMENT SUBSYSTEM, para 4-28.

NOTE

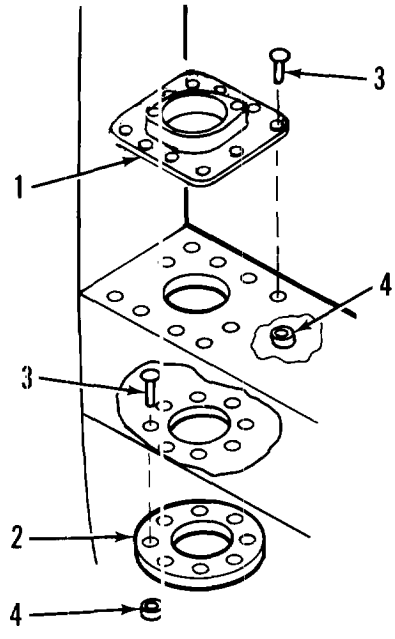
Although the following procedures may be used for either left side or right side bushing supports, left and right side upper bushing supports are different. The same lower bushing supports are used on both sides.

REMOVAL

1. REMOVE UPPER (1) AND LOWER (2) BUSHING SUPPORTS.

   a. Remove ten grooved pin rivets (3), grooved pin collars (4) and upper bushing support (1).

   b. Remove eight grooved pin rivets (3), grooved pin collars (4) and lower bushing support (2).

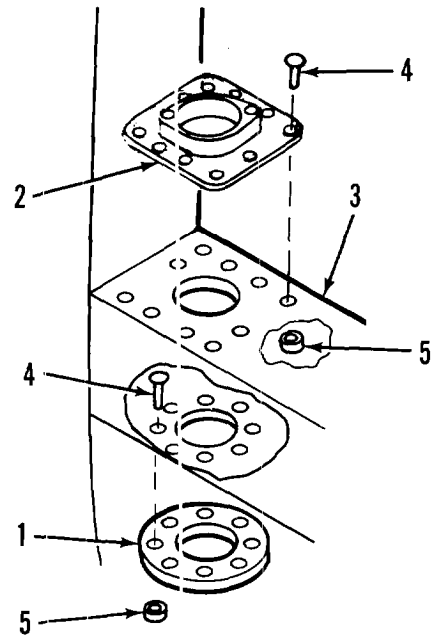


INSTALLATION

2. INSTALL LOWER (1) AND UPPER (2) BUSHING SUPPORTS.

   a. Position lower bushing support (1) on beam (3) and secure with eight grooved pin rivets (4) and grooved pin collars (5).

   b. Position upper bushing support (2) on beam (3), and secure with ten grooved pin rivets (4) and grooved pin collars (5).



END OF TASK

APPENDIX A

REFERENCES

PURPOSE

A-1. This appendix lists publications which apply to maintaining the Armament Subsystems, Helicopter; 7.62 MM Machine Gun: M23, M24, M41, and M144.

ARRANGEMENT

A-2. The publications are arranged by type and then in alphanumeric order by publication number.

ARMY REGULATIONS

AR 95-16	Weight and Balance: Army Aircraft
AR 385-40	Accident Reporting and Records
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CTA 50-970	Expendable Items (Except: Medical, Class V, Repair Parts, and Heraldic Items)

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DA PAM 738-751	Functional Users Manual for the Army Maintenance Management System, Aviation (TAMMS-A)

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FM 5-20	Camouflage
FM 5-25	Explosives and Demolitions
FM 9-6	Ammunition Service in the Theater of Operations
FM 21-11	(Test) First Aid for Soldiers
FM 31-70	Basic Cold Weather Manual

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DA Form 12-31 A-R	Requirements for Army Aircraft Component Publications
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DA Form 2028-2	Recommended Changes to Publications and Blank Forms
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SC 1305/30-lL	FSC 1305 - Ammunition, thru 30-MM; FSC 1310 - Ammunition, over 30-MM up to 75-MM; FSC 1315 - Ammunition, 75-MM thru 125-MM; FSC 1320 - Ammunition, over 125-MM; FSC 1325 - Bombs and FSC 1330 - Grenades

TECHNICAL BULLETIN

TB 9-1000-247-34	Standards for Overseas Shipment or Domestic Issue of Small Arms, Aircraft Armament, Towed Howitzers, Mortars, Recoilless Rifles, Rocket Launchers and Associated Fire Control Equipment

TECHNICAL MANUALS

TM 9-214	Inspection, Care and Maintenance of Antifriction Bearings
TM 9-237	Operators Manual for Welding Theory and Applications
TM 9-1005-224-10	Operator's Manual for Machine Gun, 7.62-MM, M60 W/E (1005-00-605-7710); Mount, Tripod, Machine Gun, 7.62-MM, M122 (1005-00-710-5599) and Machine Gun, 7.62-MM, M60D W/E (1005-00-909-3002)
TM 9-1005-224-24	Organizational, Direct Support, and General Support Maintenance Manual for Machine Gun, 7.62-MM, M60 W/E (1005-00-605-7710); Mount, Tripod, Machine Gun, 7.62-MM, M122 (1005-00-710-5599) and Machine Gun, 7.62-MM, M60D W/E (1005-00-909-3002)
TM 9-1005-224-24P	Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts) for Machine Gun, 7.62-MM, M60 W/E (1005-00-605-7710) Mount, Tripod, Machine Gun, 7.62-MM, M122 (1005-00-710-5599) and Machine Gun, 7.62-MM, M60D W/E (1005-00-909-3002)

TM 9-1005-262-23P	Aviation Unit and Aviation Intermediate Maintenance Repair Parts and Special Tools List for Armament Subsystem, Helicopter, 7.62 MM Machine Gun Mounts: Door Mounted, Lightweight, Model M23 (NSN 1105-00-907-0720); Door Mounted, Lightweight, Model M24 (NSN 1005-00-763-1404); Ramp Mounted, Lightweight, Model M41 (NSN 1005-00-087-2046) and Window Mounted, Lightweight, Model M144 (NSN 1005-01-193-4878)
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TM 9-1300-206	Ammunition and Explosives Standards
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TM 38-230-2	Packaging of Materiel; Preservation (Vol II)
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TM 743-200-1	Storage and Materials Handling
TM 750-244-7	Procedures for Destruction of Equipment in Federal Supply Classifications 1000, 1005, 1010, 1015, 1020, 1025, 1030, 1055, 1090 and 1095 To Prevent Enemy Use

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

GENERAL

B-1. This section provides an explanation of all maintenance and repair functions authorized at various maintenance levels.

a. The Maintenance Allocation Chart (MAC) in Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

b. Section III lists the special tools and test equipment required for each maintenance function as referenced from Section II.

c. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

MAINTENANCE FUNCTIONS

B-2. Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine serviceability of an item by comparing its physical, mechanical and electrical characteristics with established standards.

b. Test. To verify serviceability by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents and air.

d. Adjust. To maintain mechanical or electrical characteristics to their proper operating range.

e. Aline to adjust specified variable elements of an item to bring to optimum performance.

f. Calibrate. To determine the corrections to be made in the readings of instruments or test equipment used in precise measurement. Consists of the comparison of two installments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument or test equipment being compared with the certified standard.

g. Remove/Install. To remove and install the same item to perform required service or maintenance functions. Install may be emplacing, seating, or positioning a spare, repair part, subassembly, or assembly to allow proper functioning of an equipment or system.

h. Replace. To replace unserviceable items with serviceable assemblies, subassemblies or parts.

i. Repair. To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This includes, but is not limited to, inspection, cleaning, preserving, adjusting, replacing, welding, riveting, and strengthening.

j. Overhaul. To restore an item to a completely serviceable condition as prescribed by maintenance serviceability standards prepared and published for the specific item to be overhauled.

k. Rebuild. To restore an item to a standard as nearly as possible to the original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements (items) using original manufacturing tolerances and specifications, and subsequent reassembly of the item.

EXPLANATION OF COLUMNS IN THE MAC, SECTION II

B-3. The entries required in the MAC are explained below.

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component Assembly. Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2 (for detailed explanation of these functions, see para B-2).

d. Column 4, Maintenance Level. Column 4 specifies, by the listing of a “work time” figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform the maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate “work time” figures will be shown for each level. The number of manhours specified by the “work time” figure represents the average time required to restore an item (assembly, subassembly, component module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance levels are as follows:

O - A V U M
F - A V I M
D - D e p o t

Section II. MAINTENANCE ALLOCATION CHART

FOR

ARMAMENT SUBSYSTEM, HELICOPTER, 7.62 MM, MACHINE GUN MOUNT: M23 W/E, M24 W/E, M41 W/E, AND M144 W/E

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
00	M23 ARMAMENT SUB-SYSTEM, HELICOPTER, 7.62 MM MACHINE GUN, DOOR MOUNTED, LIGHTWEIGHT	Inspect Install Replace Repair Overhaul	0.5 1.0 0.5 2.5		 6.0	 1	A
00	M24 ARMAMENT SUB-SYSTEM, HELICOPTER, 7.62 MM MACHINE GUN, DOOR MOUNTED, LIGHTWEIGHT	Inspect Service Install Replace Repair Overhaul	0.5 0.3 1.0 1.0 2.5		 5.3	 1	B
00	M41 ARMAMENT SUB-SYSTEM, HELICOPTER, 7.62 MM MACHINE GUN, RAMP MOUNTED, LIGHTWEIGHT	Inspect Service Install Replace Repair Overhaul	0.5 0.3 1.0 1.0 2.5		 5.3	 1	C
00	M144 ARMAMENT SUB-SYSTEM, HELICOPTER, 7.62 MM MACHINE GUN, WINDOW MOUNTED, LIGHTWEIGHT	Inspect Service Install Replace Repair Overhaul	0.5 0.3 1.0 1.0 2.5	2.0 1.0	 6.0	 1	D
01	MOUNT PINTLE, M23	Service Remove/ Install Repair	0.3 0.5 1.0				A
0101	Pintle Post Assembly	Replace Repair	0.3 0.3				A
010101	Post and Pintle Subassembly	Service Replace Repair	0.1 0.5 0.1				A

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0102	Ammunition Box and Cover Assembly	Replace Repair	0.2 0.5				A
0103	Flexible Chute Assembly	Replace Repair	0.5 1.0				A
0104	Chute Brace Assembly	Replace Repair	0.4 1.0				A
02	MOUNT ASSEMBLY, LH AND RH	Install Repair	1.0 2.5	 1.0			B
03	REAR RAMP MOUNT ASSEMBLY	Install Repair	1.0 2.5	 1.0			C
04	MOUNT ASSEMBLY, GUN, LH and RH	Install Repair	2.0 2.5				D
0401	Mount Pintle Assembly	Inspect Install Replace Repair	0.1 0.2 0.2 1.5				D
0402	Release Arm Assembly LH and RH	Inspect Install Replace Repair	0.1 0.2 0.2 1.5				D
05	EJECTION CONTROL BAG	Install Replace Repair	0.2 0.3 0.1				A,B,C,D
0501	Frame Assembly	Repair	0.5				
06	AMMUNITION CAN ASSEMBLY	Inspect Install Replace Repair	0.1 0.2 0.2 0.5				B,C,D
07	MACHINE GUN M60D						E,F,G

Section III. Tool and Test Equipment Requirements

Tools or Test Equipment Reference Code	Maintenance Category	Nomenclature	National/NATO Stock Number	Tool Number
1	AVUM/AVIM	Tool Set, Aircraft Armament Repairman: MOS 45J Supplemental	5180-00-994-9242	SC 4933-95-CL-A14

Section IV. Remarks

Reference Code	Remarks/Notes
A	Applicable to M23
B	Applicable to M24
C	Applicable to M41
D	Applicable to M144
E	Refer to TM 9-1005-224-10
F	Refer to TM 9-1005-224-24
G	Refer to TM 9-1005-224-24P

APPENDIX C

REPAIR PARTS AND SPECIAL TOOLS LIST

Refer to TM 9-1005-262-23P for repair parts and special tools.

APPENDIX D

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

SCOPE

D-1. This appendix lists expendable/durable supplies and materials you will reed to operate and maintain the armament subsystems. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

EXPLANATION OF COLUMNS

D-2. An explanation of columns is provided below.

a. Column 1, Item number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., “Use Grease, Aircraft, item 2, App D.)

b. Column 2, Level. This column identifies the lowest level of maintenace that requires the listed item.

O - Aviation Unit Maintenance
F - Aviation Intermediate Maintenance

c. Column 3, National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. Column 4, Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parentheses, if applicable.

e. Column 5, Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea. in. pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS

(1) Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	O	6850-00-224-6663	Compound, Cleaning (81349) MIL-C-372C	OZ
2	O	8145-00-823-7457	Gloves, Chemical and Oil Protective (81348) ZZ-G-381	PR
3	O	9150-00-985-7244	Grease, Aircraft (81349) MIL-G-23827	OZ
4	O	9150-00-168-2000	Lubricant, Solid Film (81349) MIL-L-46147A	OZ
5	O	9150-00-889-3522	Oil, Lubricating (LSA) (81349) MIL-L-46000	OZ
6	O	8010-01-042-9438	Paint (81349) MIL-L-46159A	CN
7	O	8030-00-251-7228	Sealing Compound (81349) MIL-S-11031	CN
8	O	6850-00-264-9039	Solvent, Mineral Spirits (81349) PD-680	GL
9	O	9505-00-293-4208	Wire, Nonelectrical (96906) MS20995C32	LB

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To be distributed in accordance with DA Form 12-31A, Operator, Organizational and Direct and General Support Maintenance requirements for Armament Subsystem: Machine Gun, Door-Mounted, 7.62-MM, M23, M24, M41.

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BE EXACT . . . PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
4-36	10		
4-53	3a		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Change nomenclature of item (3) from "round plain nut (3)" to "slotted nut (3)."

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Lb
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

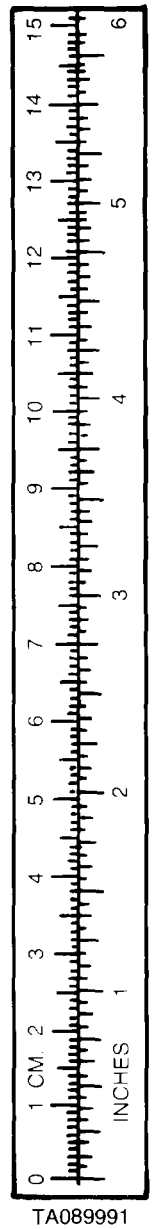
TEMPERATURE

5/9 (°F - 32) = °C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5 C° + 32 = F°

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621



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