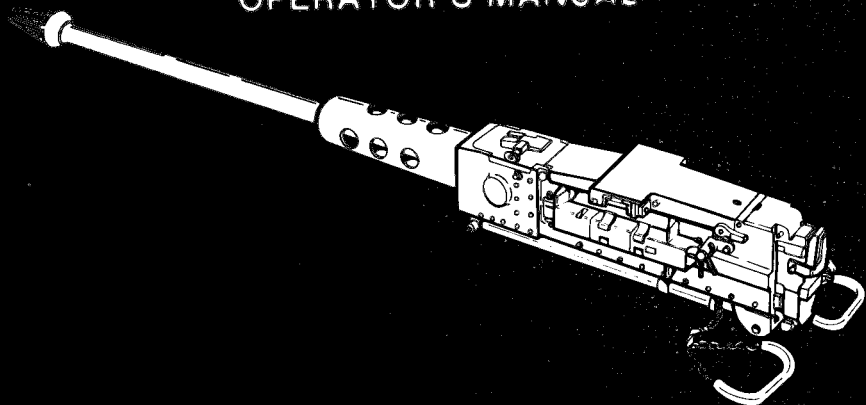


TM 9-1005-231-10

# OPERATOR'S MANUAL



## MACHINE GUN, CALIBER .50, FIXED, M85 (1005-00-690-2790)

HEADQUARTERS, DEPARTMENT OF THE ARMY

November 1984



## **WARNING**

- **Be sure weapon is clear of ammunition before removing it from vehicle for any maintenance procedure.**
- **Make sure the bore and chamber are dry and free of obstructions before loading the weapon.**
- **The bolt assembly must be forward when loading.**
- **You can get a cookoff from a stuck cartridge in a hot chamber (150 to 200 rounds fired in 2 minutes; or a long continuous burst or repeated use of the weapon with less than 200 rounds). If your weapon quits firing and immediate action doesn't cure it, leave cover assembly closed and let weapon cool for 15 minutes before opening cover assembly. Do NOT open cover assembly until weapon has cooled, or a cookoff could occur and result in serious injury or death.**
- **Keep a runaway weapon aimed on target pointed downrange. Do NOT let go of charger handle (black) when clearing weapon. A defective sear assembly may not lock bolt assembly in rear. NEVER reload a runaway weapon until repaired. Make sure weapon is cleared before removing from vehicle.**

### **WARNING (cont)**

- **When removing a stuck cartridge, do NOT stand in front of barrel assembly. Do NOT allow base of cartridge to strike face of bolt assembly or cartridge ejector or it may fire on contact. Do NOT remove barrel assembly from receiver assembly until live round has been removed. Stand off to side when clearing barrel assembly.**
- **Do NOT interchange bolt assemblies, barrel extension assemblies, or barrel assemblies from one weapon to another. Doing so may cause the headspace to change and result in serious injury or death.**
- **Use only authorized ammunition shown in chapter 4.**
- **For further information on safety, care, and handling of ammunition, refer to TM 9-1300-206.**
- **For further information on first aid, refer to FM 21-11 (TEST).**

**TECHNICAL MANUAL )**  
**)**  
**TM 9-1005-231-10 )**

**HEADQUARTERS**  
**DEPARTMENT OF THE ARMY**  
**Washington, DC, 20 November 1984**

**OPERATOR'S MANUAL**

**MACHINE GUN, CALIBER .50, FIXED, M85**

**(1005-00-690-2790)**

**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 or DA Form 2028 (Recommended Changes to Equipment Publications and Blank Forms) direct to: Commander, US Army Armament, Munitions and Chemical Command, ATTN: DRSMC-MAS(R), Rock Island, IL 61299. A reply will be furnished to you.

---

\* This manual supersedes TM 9-1005-231-10, 1 May 1974, including changes.

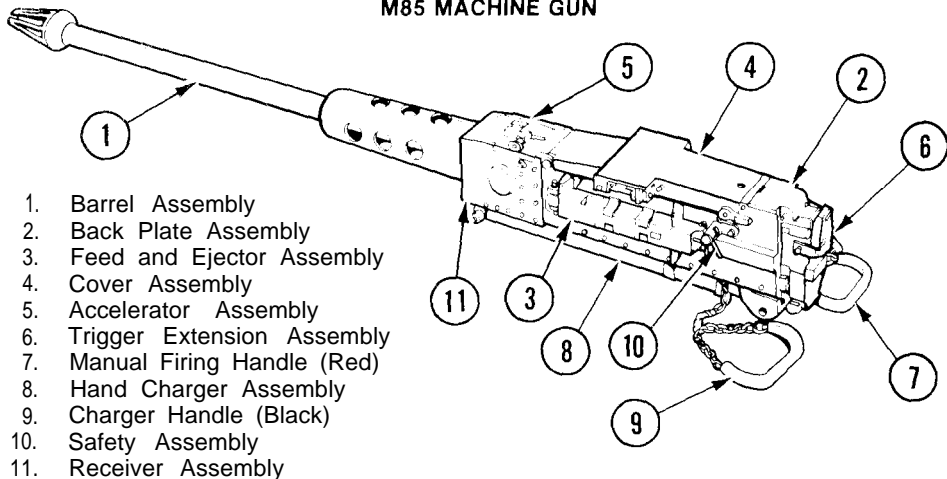
|                 |           |  |      |
|-----------------|-----------|--|------|
| <b>CHAPTER</b>  | <b>1.</b> | <b>INTRODUCTION</b>  |      |
| Section         | I.        | General information . . . . .                                  | 1-0  |
| Section         | II.       | Equipment Description . . . . .                                | 1-2  |
| <b>CHAPTER</b>  | <b>2.</b> | <b>OPERATING INSTRUCTIONS</b>                                  |      |
| Section         | I.        | Preventive Maintenance Checks<br>and Services (PMCS) . . . . . | 2-1  |
| Section         | II.       | Operation Under Usual Conditions . . . . .                     | 2-15 |
| Section         | III.      | Operation Under Unusual Conditions . . . . .                   | 2-25 |
| <b>CHAPTER</b>  | <b>3.</b> | <b>MAINTENANCE INSTRUCTIONS</b>                                |      |
| Section         | I.        | Lubrication Instructions . . . . .                             | 3-0  |
| Section         | II.       | Troubleshooting Procedures. . . . .                            | 3-0  |
| Section         | III.      | Maintenance Procedures . . . . .                               | 3-7  |
| <b>CHAPTER</b>  | <b>4.</b> | <b>AMMUNITION</b> . . . . .                                    | 4-0  |
| <b>APPENDIX</b> | <b>A.</b> | <b>REFERENCES</b> . . . . .                                    | A-0  |

|                 |           |   |     |
|-----------------|-----------|---|-----|
| <b>APPENDIX</b> | <b>B.</b> | <b>COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS<br/>LISTS</b> |     |
| Section         | I.        | Introduction . . . . .  | B-0 |
| Section         | II.       | Components of End Item . . . . .                              | B-1 |
| Section         | III.      | Basic Issue Items . . . . .                                   | B-2 |
| <b>APPENDIX</b> | <b>C.</b> | <b>ADDITIONAL AUTHORIZATION LIST</b>                          |     |
| Section         | I.        | Introduction . . . . .  | C-1 |
| Section         | II.       | Additional Authorization List. . . . .                        | C-2 |
| <b>APPENDIX</b> | <b>D.</b> | <b>EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST</b>         |     |
| Section         | I.        | Introduction . . . . .  | D-1 |
| Section         | II.       | Expendable/Durable Supplies and<br>Materials List . . . . .   | D-3 |

# CHAPTER 1 INTRODUCTION

## Section I. GENERAL INFORMATION

### M85 MACHINE GUN





## 1-1. **SCOPE.**

- a. Type of Manual. Operator's manual,
- b. Model Number and Equipment Name. M85 fixed caliber .50 machine gun.
- c. Purpose of Equipment. Provides protection for armored vehicle crews against enemy ground troops or low-flying aircraft.

## 1-2. **MAINTENANCE FORMS AND RECORDS.**

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS).

## 1-3. **HAND RECEIPT (-HR) MANUALS.**

This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt), The TM 9-1005-231-10-HR consists of pre-printed hand receipts (DA Form 2062) that list end item related equipment (i.e., COEI, BII, and AAL) you must account for. As an aid to property accountability, additional HR manuals may be requisitioned from the following source in accordance with procedures in chapter 3, AR 310-2: Commander, US Army AG Publications Center, 2800 Eastern Boulevard, Baltimore, MD 21220,

#### **1-4. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S).**

If your M85 machine gun needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at Commander, US Army Armament, Munitions and Chemical Command, ATTN: DRSMC-MAO(R), Rock Island, IL 61299 We'll send you a reply.

#### **1-5. LIST OF ABBREVIATIONS.**

API. . . . . Armor-Piercing incendiary  
APIT.....Armor-Piercing Incendiary Tracer  
CLP . . . . . Cleaner, Lubricant and Preservative

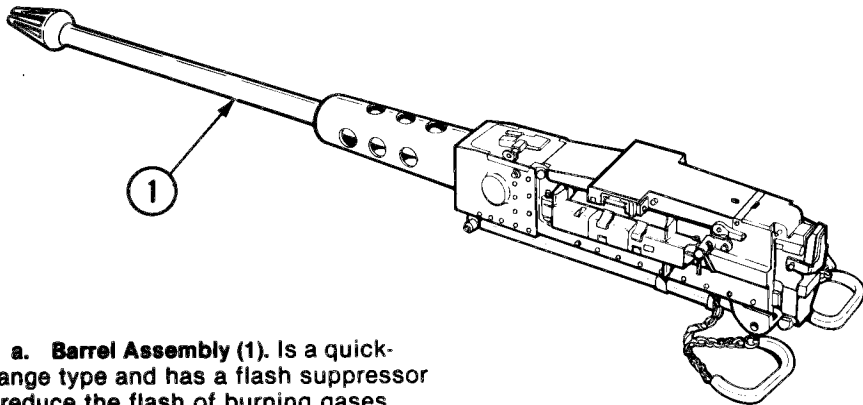
### **Section II. EQUIPMENT DESCRIPTION**

#### **1-6. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES .**

a. The recoil-operated M85 machine gun is designed for cupola mounting in armored vehicles. It can be fired electrically by the solenoid, or manually, at either high or low rates. It has a short receiver assembly, fixed headspace, and a quick-change barrel with flash suppressor.

b. The M85 machine gun has a capability of right- and left-hand feed. The left-hand feed is used on the M60, M60A1, and M60A3 tanks and M728 vehicles. The safety assembly and hand charger assembly are on the left. The right-hand feed is used with the safety assembly and hand charger assembly on the right. If your M85 machine gun needs to be changed from right-hand feed to left-hand feed or vice versa, refer to organizational maintenance.

## 1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.



a. **Barrel Assembly (1).** Is a quick-change type and has a flash suppressor to reduce the flash of burning gases.

## 1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS. (cont)

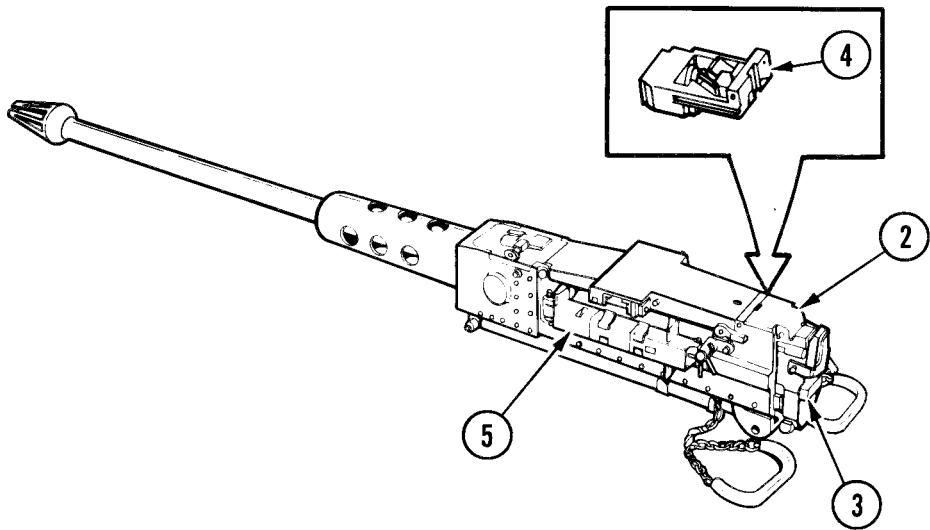
### b. Back Plate Assembly (2).

(1) Acts as a stop for the bolt buffer group.

(2) Rate selector (3) selects high or low rate of fire.

c. **Sear Assembly (4).** Houses springs that absorb shock and momentarily holds bolt assembly to rear in low rate of fire. Holds bolt assembly to rear when charging or after firing stops.

d. **Feed and Ejector Assembly (5).** Helps feed ammunition into the weapon and ejects spent cartridges.



## 1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS. (cont)

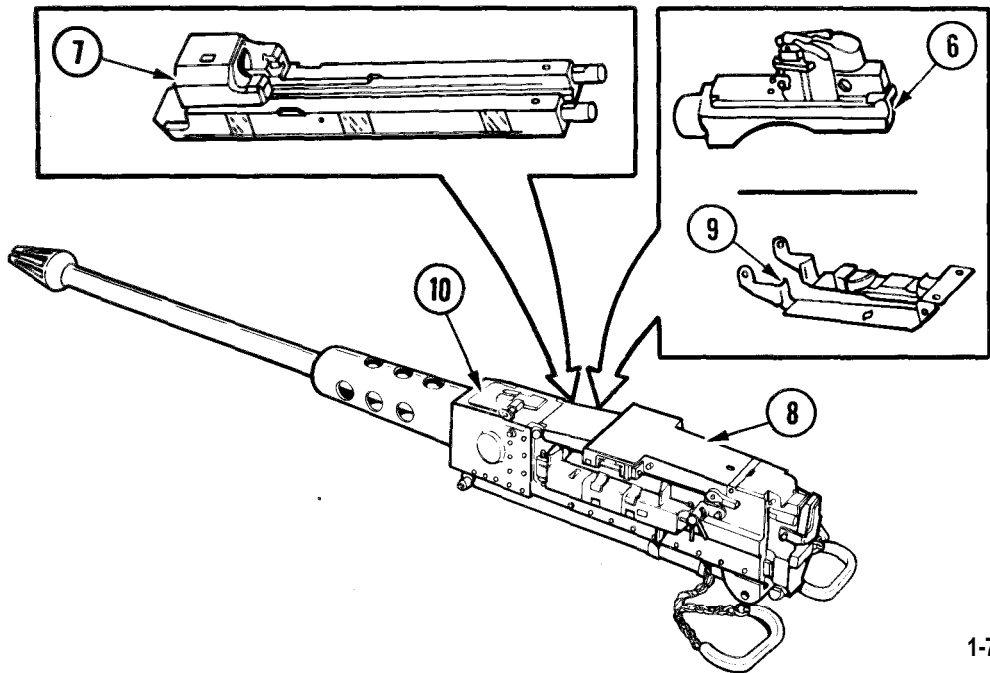
e. **Bolt Assembly (6)**. Carries firing pin forward so it strikes primer.

f. **Barrel Extension Assembly (7)**. Holds barrel assembly. Contains two rail grooves which support and guide bolt assembly.

g. **Cover Assembly (8)**. Helps feed and hold the ammunition for cambering in the barrel assembly.

h. **Feed Tray Assembly (9)**. Supporting surface for movement of ammunition and empty links.

i. **Accelerator Assembly (10)**. Holds the cover assembly open. Secures the barrel assembly.



## 1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS. (cont)

### j. Trigger Extension Assembly (11).

**(1) Trigger Extension (12).** Engages trigger, which, when pressed, allows weapon to fire manually.

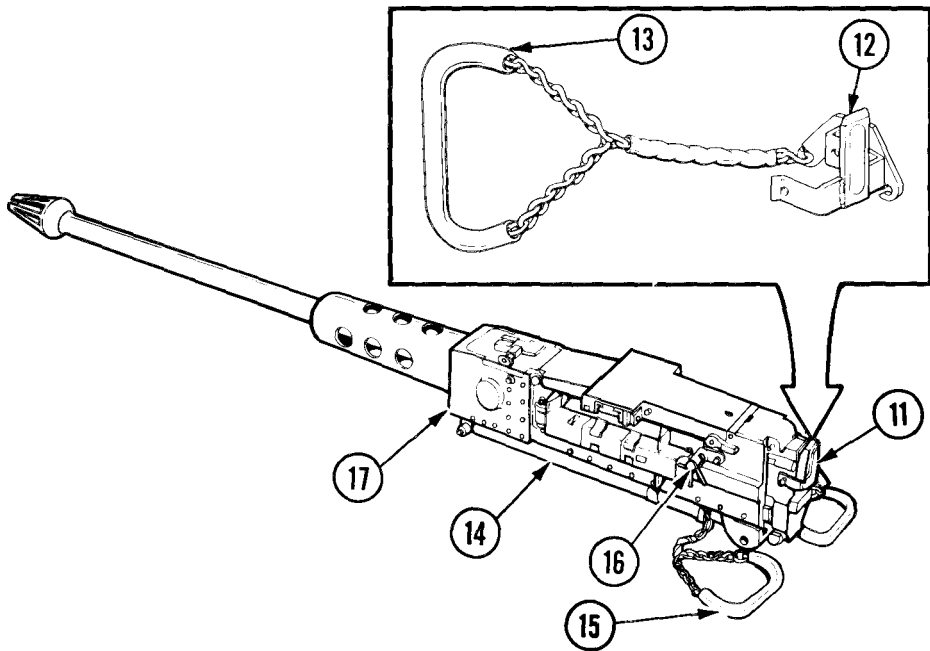
**(2) Manual Firing Handle (Red) (13).** When pulled to the rear, allows weapon to fire manually.

**k. Hand Charger Assembly (14).** When charger handle (black) (15) is pulled to rear, cocks the gun.

**l. Safety Assembly (16).** When in S (Safe) position, you can't fire the gun. When in F (Fire) position, the gun can be fired.

**m. Receiver Assembly (17).** Main body of the gun.





## 1-8. EQUIPMENT DATA.

Firing rate:

|  |                       |
|--|-----------------------|
| Low .....                                    | 400 rd/min (minimum)  |
| High .....                                   | 625 rd/min (minimum)  |
| Maximum effective range . . . . .            | 2401.53 yd (2196m)    |
| Maximum range .....                          | 7330.42 yd (6703m)    |
| Length .....                                 | 54-1/2 in. (138.43cm) |
| Weight .....                                 | 65 lb (29.48kg)       |
| Maximum effective employment range . . . . . | 2187.23 yd (2000m)    |

# CHAPTER 2

## OPERATING INSTRUCTIONS

---

### Section I. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

#### 2-1. GENERAL.

##### NOTE

Always keep in mind the CAUTIONS and WARNINGS.

- a. Before You Operate. Perform your before (B) PMCS.
- b. After You Operate. Be sure to perform your after (A) PMCS.
- c. If Your Equipment Fails to Operate. Troubleshoot with proper equipment. Report any deficiencies using the proper forms. See DA PAM 738-750.

#### 2-2. PMCS PROCEDURES.

a. The PMCS table (p 2-3) lists those required checks and services to be performed by personnel who operate the M85 machine gun. The services are divided as follows:

- (1) Before Operation Service. This is a brief service to make sure the M85 machine gun is ready for operation.

## **2-2. PMCS PROCEDURES. (cont)**

**(2)** After Operation Service. This service should correct, where possible, all operation deficiencies so the M85 machine gun will be ready to operate when needed.

**(3)** Not Ready/Available If Column. The PMCS table also lists those deficiencies which make the M85 machine gun not ready/available for duty. They are listed in the right-hand column.

**(4)** Item No. Column. The numbers in the item no. column of the PMCS will be used as the item numbers for the TM number column on DA Form 2404, Equipment Inspection and Maintenance Worksheet. If anything looks wrong and you cannot correct it yourself, write it on your DA Form 2404. If you find something serious, notify your organizational maintenance RIGHT NOW.

**(5)** Disassembly. To remove any parts or assemblies in order to perform PMCS, see maintenance procedures (p 3-7).

**b.** Before you begin to check specific items, remember that there are some things to be checked that are common in all areas on the M85 machine gun. As you make your inspection and perform PMCS, always check for loose rivets. While a loose rivet is sometimes difficult to spot without applying a screwdriver, you can often tell by a bright area around the base of the rivet.

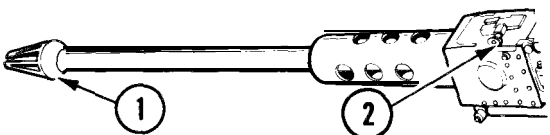
### NOTE

Spare parts, tools, and equipment are issued to the using personnel for operating and maintaining the M85 machine gun. Tools and equipment should not be used for nonprescribed purposes and should be properly stored when not in use.

### Preventive Maintenance Checks and Services

#### B-Before Operation

#### A-After Operation

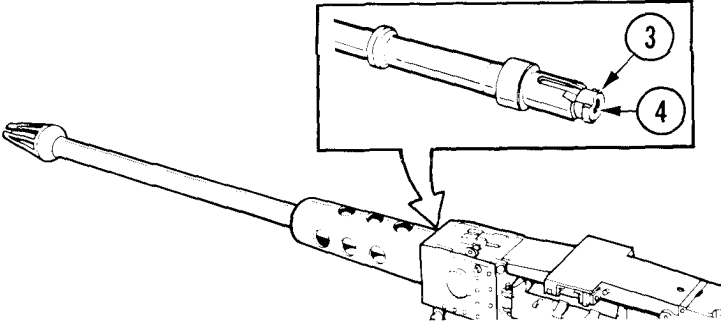
| Item no. | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE  | Equipment is not ready/available if: |
|----------|----------|---|--|--------------------------------------|
|          | B        | A |  |                                      |
| 1        | ●        |   | <p><b>WARNING</b></p> <p>Before performing PMCS, make sure the weapon is clear of live rounds. (See p 2-22.)</p> <p><b>BARREL ASSEMBLY</b></p>  <p>a. Be sure flash suppressor (1) is secured.</p> <p>b. Check latch lock (2) for positive retention of barrel assembly.</p> |                                      |

## 2-2. PMCS PROCEDURES. (Cont)

### Preventive Maintenance Checks and Services (cont)

B—Before Operation

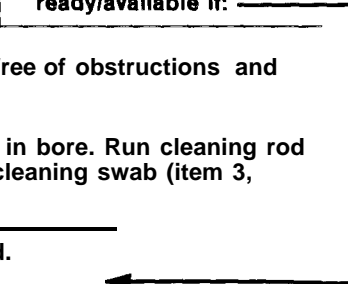
A—After Operation

| Item no. | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE   | Equipment is not ready/available if: |
|----------|----------|---|---|--------------------------------------|
|          | B        | A |   |                                      |
| 1        | ●        |   | <b>BARREL ASSEMBLY (cont)</b><br> <p>The diagram shows a long barrel assembly with a multi-pointed tip. A callout box provides a magnified view of the barrel's end, highlighting two locking lugs labeled '3' and '4'.</p> |                                      |
|          |          |   | <b>c.</b> Remove barrel assembly (p 3-8) and check that locking lugs (3) are not damaged or burred.   |                                      |

## Preventive Maintenance Checks and Services (cont)

**B—Before Operation**

**A—After Operation**

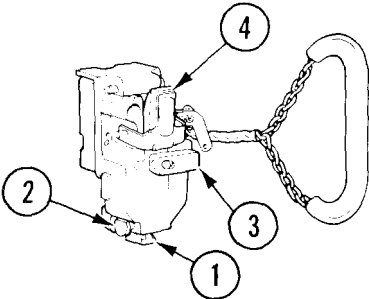
| Item no. | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE   | Equipment is not ready/available if: _____   |
|----------|----------|---|---|--|
|          | B        | A |   |  |
|          |          |   | <p>d. Check to be sure bore (4) is free of obstructions and not bulged.</p> <p>e. Check for excess lubrication in bore. Run cleaning rod with clean, dry small arms cleaning swab (item 3, app D) through the bore.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Bore is obstructed or bulged.</p> <p>Locking lugs are damaged or burred.</p> </div> |  |

## 2-2. PMCS PROCEDURES. (cont)

### Preventive Maintenance Checks and Services (cont)

#### B-Before Operation

#### A-After Operation

| Item no. | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE  | Equipment is not ready/available if: |
|----------|----------|---|--|--------------------------------------|
|          | B        | A |  |                                      |
| 2        | ●        |   | <b>BACK PLATE ASSEMBLY</b><br> |                                      |
|          |          |   | a. Check that latch (1) and lock (2) secure back plate assembly to receiver assembly.                            |                                      |



## Preventive Maintenance Checks and Services (cont)

**B—Before Operation**

**A—After Operation**

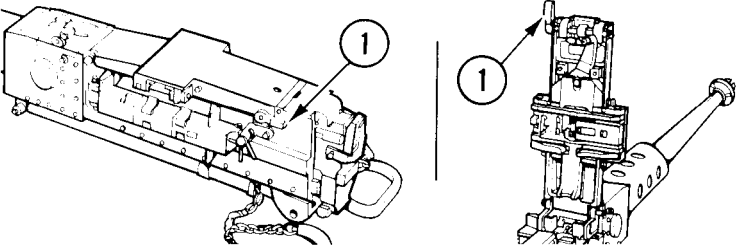
| Item no. | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE  | Equipment is not ready/available if: |
|----------|----------|---|--|--------------------------------------|
|          | B        | A |  |                                      |
|          |          |   | <p>b. Check that rate selector (3) operates freely and locks in place.</p> <p>c. Check spring action of trigger assembly (4).</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Latch and lock do not secure back plate assembly to receiver assembly.</p> <p>Rate selector does not lock in place.</p> </div> |                                      |

## 2-2. PMCS PROCEDURES. (cont)

### Preventive Maintenance Checks and Services (cont)

B—Before Operation

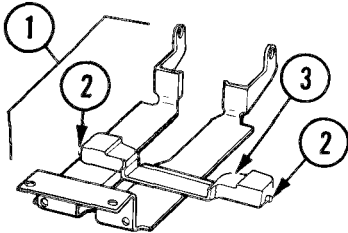
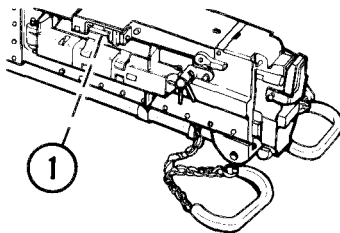
A—After Operation

| Item no. | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE  | Equipment is not ready/available if:                 |
|----------|----------|---|--|--|
|          | B        | A |  |  |
| 3        | ●        |   | <p><b>COVER ASSEMBLY</b></p>  <p>a. Check that cover latch lever (1) functions and locks properly.</p> <p>b. Check for proper functioning of all parts.</p> <p>Any malfunctions occur.</p> | <p>Equipment is not ready/available if:</p> <p>←</p> |

## Preventive Maintenance Checks and Services (cont)

**B—Before Operation**

**A—After Operation**

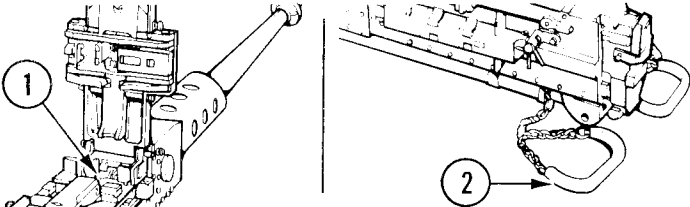
| Item no. | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE  | Equipment is not ready/available if:   |
|----------|----------|---|--|--|
|          | B        | A |  |  |
| 4        | ●        |   | <p><b>FEED TRAY ASSEMBLY</b></p>   <p>a. Check for dirt, rust, cracks, dents, and distortions.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Feed tray assembly (1) is dirty or rusty. Cracks, dents or distortions are evident.</p> </div> <p>b. Check for spring action of plungers (2) on link tray guide (3).</p> | <p>Equipment is not ready/available if:</p> <div style="border: 1px solid black; width: 100%; height: 100%; position: relative;"> <div style="position: absolute; top: 0; right: 0; width: 50px; height: 50px; border: 1px solid black;"></div> </div> |

## 2-2. PMCS PROCEDURES. (cont)

### Preventive Maintenance Checks and Services (cont)

B—Before Operation

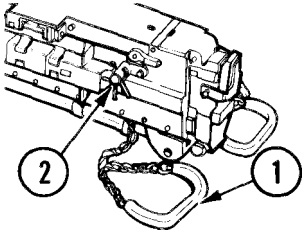
A—After Operation

| Item no. | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE  | Equipment is not ready/available if: |
|----------|----------|---|--|--------------------------------------|
|          | B        | A |  |                                      |
| 5        | ●        |   | <p><b>HAND CHARGER ASSEMBLY</b></p>  <p><b>CAUTION</b><br/>Never pull back bolt assembly with the safety assembly on S. The safety assembly will be damaged.</p> <p>Pull back bolt assembly (1) with charger handle (black) (2) to be sure bolt assembly moves freely without binding.</p> | <p>Bolt assembly binds.</p>          |

## Preventive Maintenance Checks and Services (cont)

### B—Before Operation

### A-After Operation

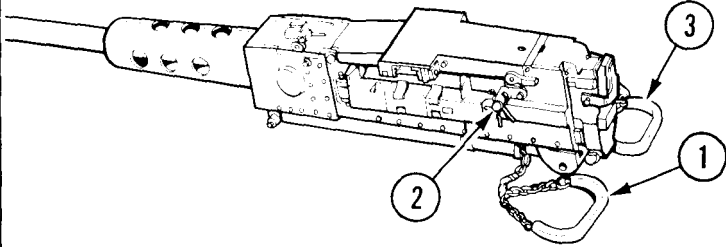
| Item no. | Interval |   | ITEM TO BE INSPECTED PROCEDURE   | Equipment is not ready/available if:   |
|----------|----------|---|--|--|
|          | B        | A |  |  |
| 6        | ●        |   | <p><b>SAFETY ASSEMBLY</b></p> <p style="text-align: center;"><b>CAUTION</b><br/>Never pull back bolt assembly with the safety assembly on S. The safety assembly will be damaged.</p> <p>a. Pull back bolt assembly with charger handle (1) and lock to rear. Place safety assembly (2) on S and attempt to fire.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Bolt assembly moves forward.</b> ←</p> </div> |  |

## 2-2. PMCS PROCEDURES. (cont)

### Preventive Maintenance Checks and Services (cent)

B—Before Operation

A—After Operation

| Item no.   | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE   | Equipment is not ready/available if: |
|--|----------|---|---|--------------------------------------|
|  | B        | A |   |                                      |
| 6  | ●        |   | <b>SAFETY ASSEMBLY (cont)</b><br> <p>The diagram shows a mechanical safety assembly. Callout 1 points to a handle with a chain. Callout 2 points to a bolt assembly. Callout 3 points to a hook-like component.</p> |                                      |
| <p style="text-align: center;"><b>CAUTION</b></p> <p>Never allow bolt assembly to go forward unassisted during a manual operation check. Hold the charger handle (black) and ease the bolt assembly forward, or damage to parts may occur.</p> |          |   |   |                                      |

## Preventive Maintenance Checks and Services (cont)

**B—Before Operation**

**A—After Operation**

| Item no. | Interval |   | ITEM TO BE INSPECTED<br>PROCEDURE   | Equipment is not ready/available if:  |
|----------|----------|---|---|---|
|          | B        | A |   |   |
| 7        |          | ● | <p>b. Place safety assembly (2) on F. Hold charger handle (black) (1); pull manual firing handle (red) (3) and allow bolt assembly to move forward.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">Bolt assembly will not go forward.</div> <p><b>M85 MACHINE GUN</b></p> <p>a. Clean weapon immediately after firing and the following day.</p> <p>b. Disassemble weapon (p 3-7), clean (p 3-16) and inspect (p 3-22) parts. Lightly lubricate (p 3-30) and reassemble (p 3-30).</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">Any parts require replacement.</div> | <p>Equipment is not ready/available if:</p> <div style="border-left: 1px solid black; border-right: 1px solid black; border-bottom: 1px solid black; height: 20px; margin-top: 10px;"></div> <div style="border-left: 1px solid black; border-right: 1px solid black; border-bottom: 1px solid black; height: 20px; margin-top: 10px;"></div> |

## 2-2. PMCS PROCEDURES. (cont)

### Preventive Maintenance Checks and Services (cont)

B—Before Operation

A-After Operation

| Item no. | Interval |   | ITEM TO BE INSPECTED PROCEDURE   | Equipment is not ready/available if: |
|----------|----------|---|--|--------------------------------------|
|          | B        | A |  |                                      |
| 7        |          | ● | <p><b>M85 MACHINE GUN (cont)</b></p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Never pull back bolt assembly with the safety assembly on S. The safety assembly will be damaged.</p> <p>c. Charge weapon to check ease of operation and for correct assembly.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>If the weapon has not been fired, PMCS for item 7 above will be accomplished every 90 days. Unusual conditions and unit SOP's may require a more frequent interval.</p> |                                      |



## Section II. OPERATION UNDER USUAL CONDITIONS

### 2-3. PREPARATION FOR USE.

#### LOADING THE M85 MACHINE GUN

##### WARNING

Make sure PMCS tasks have been performed.

##### NOTE

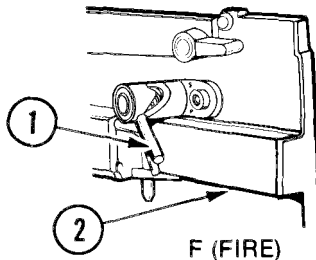
When using blank ammunition see TM 9-1005-315-12&P to install and operate the M20 blank firing attachment.

- 1 Install M85 machine gun in its mount. (Refer to appropriate armored vehicle TM.)

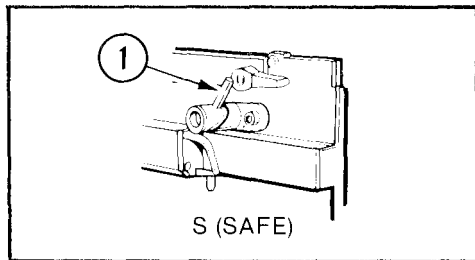
##### CAUTION

Never pull back bolt assembly with safety assembly on S. The safety assembly will be damaged.

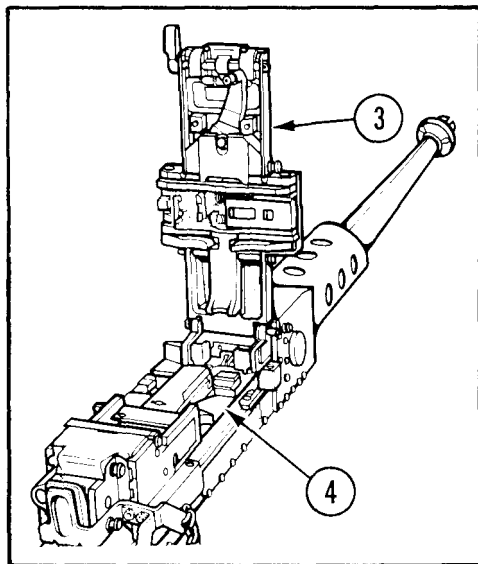
- 2 Make sure safety assembly (1) is on F, and charge M85 machine gun (2).

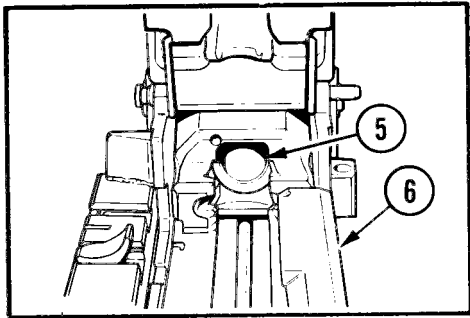


## 2-3. PREPARATION FOR USE. (cont) LOADING THE M85 MACHINE GUN (cont)



- 3 Place safety assembly (1) on S.
- 4 Open cover assembly (3) and remove any ammunition.
- 5 Raise feed tray assembly (4).

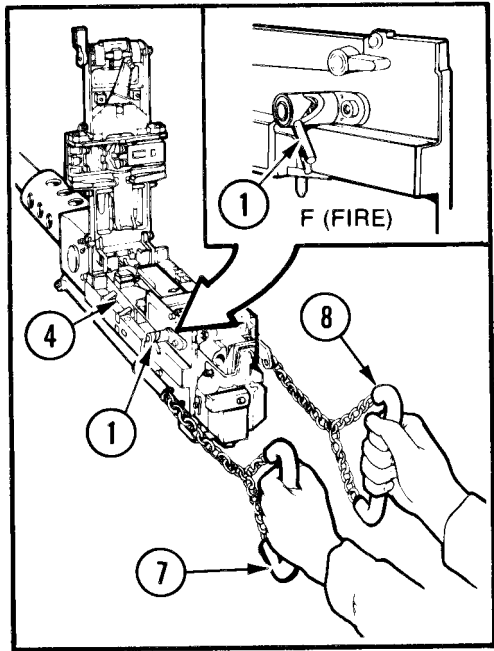




6 Look or feel in chamber (5) and receiver assembly (6) for ammunition.

7 Lower feed tray assembly (4).

8 Place safety assembly (1) on F, hold charger handle (black) (7), and pull manual firing handle (red) (8). Using charger handle (black), slowly let bolt assembly go forward.



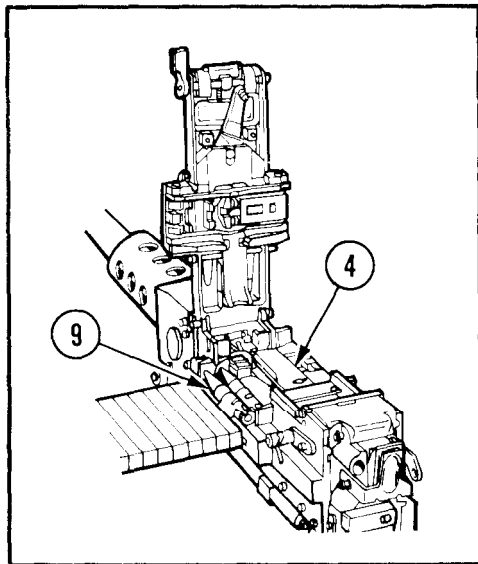
## 2-3. PREPARATION FOR USE. (cont)

### LOADING THE M85 MACHINE GUN (cont)

#### CAUTION

Ammunition chute must be aligned with feed tray assembly. Misalignment can cause a gun stoppage. If misaligned and M85 machine gun stops, call organizational maintenance.

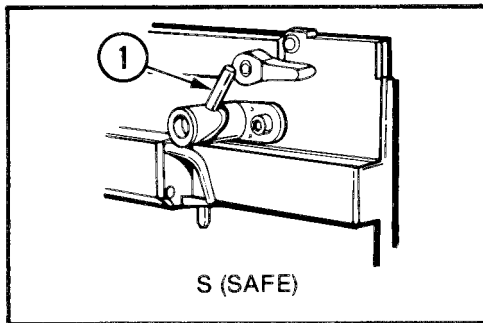
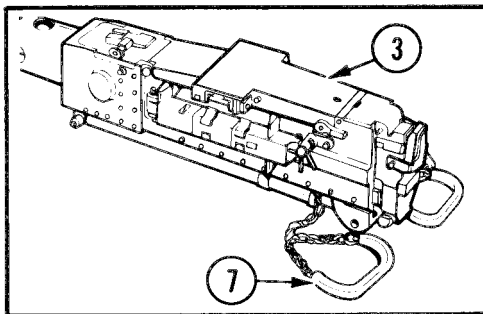
- 9 Feed ammunition (9) into feed tray assembly (4) with open side of links down. Place first round over belt-retaining pawls.



## WARNING

Bolt assembly must be forward when loading.

- 10 Close cover assembly (3).
- 11 Prior to moving into an operational zone, rapidly pull charger handle (black) (7) back until bolt assembly locks in sear assembly.
- 12 Place safety assembly (1) on S until ready to fire.



## 2-4. OPERATING PROCEDURES.

### CAUTION

When M85 machine gun is loaded and ready to fire, DO NOT open and close cover assembly. This will disengage belt feed lever and lever assembly. If M85 machine gun is fired in this condition, only one round will fire and cartridge ejector and bolt assembly will be damaged. Never change rates while firing; M85 machine gun will be damaged.

### NOTE

Be sure M85 machine gun is loaded.

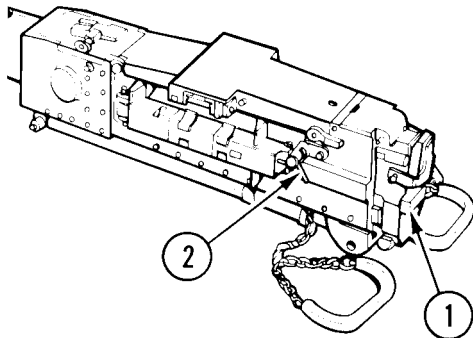
### FIRING ELECTRICALLY

- 1 Rotate rate selector (1) to select high or low.

### NOTE

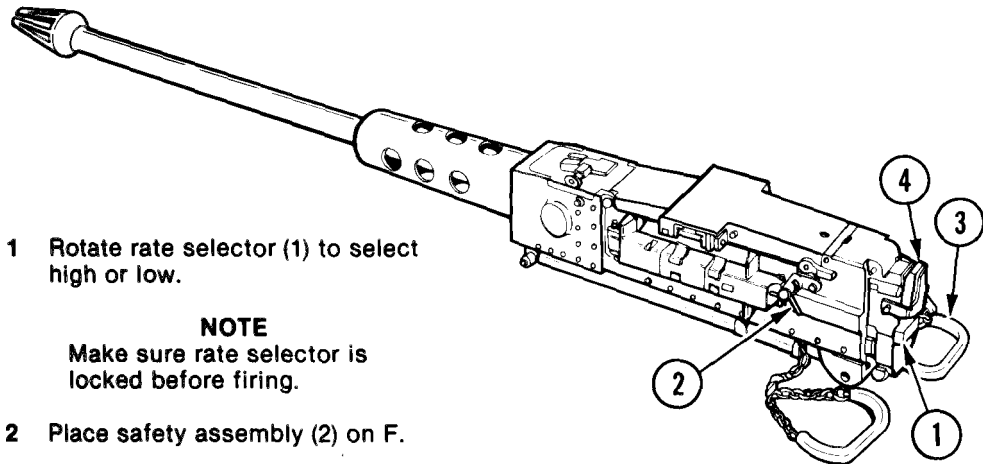
Make sure rate selector is locked before firing.

- 2 Turn on vehicle switches. (Refer to appropriate vehicle TM.)



- 3 Place safety assembly (2) on F.
- 4 Press vehicle firing trigger switch.

## FIRING MANUALLY



- 1 Rotate rate selector (1) to select high or low.

### NOTE

Make sure rate selector is locked before firing.

- 2 Place safety assembly (2) on F.
- 3 Pull manual firing handle (red) (3) or press manual firing trigger (4).

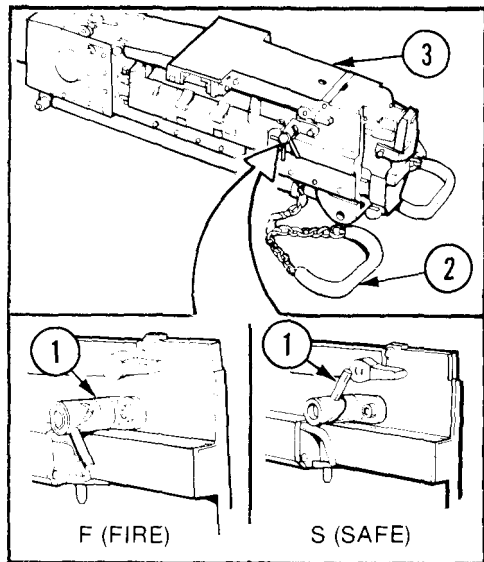
## 2-4. OPERATING PROCEDURES. (cont)

### CLEARING M85 MACHINE GUN

#### CAUTION

Never pull back bolt assembly with the safety assembly on S. The safety assembly will be damaged.

- 1 Make sure safety assembly (1) is on F. Using charger handle (black) (2), pull bolt assembly back, and then place safety assembly (1) on S.
- 2 Open cover assembly (3) and remove all ammunition and links. Lift feed tray assembly,



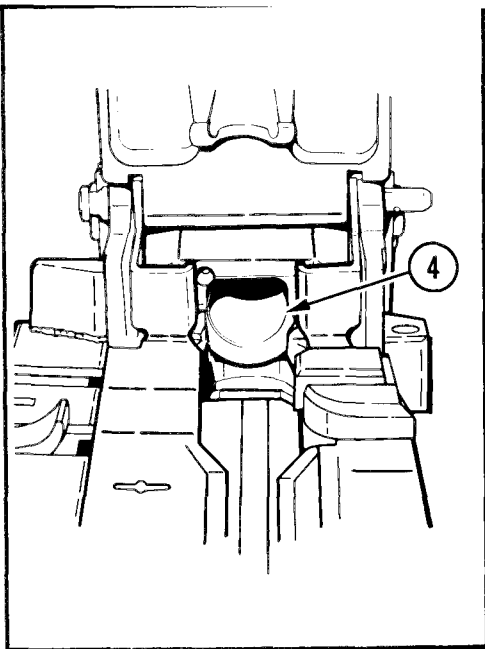


- 3 Lock or feel in chamber (4) and receiver assembly for ammunition.

**WARNING**

If chamber is not empty, use stuck or ruptured cartridge procedure to remove cartridge. (See p 2-29 or 2-32.)

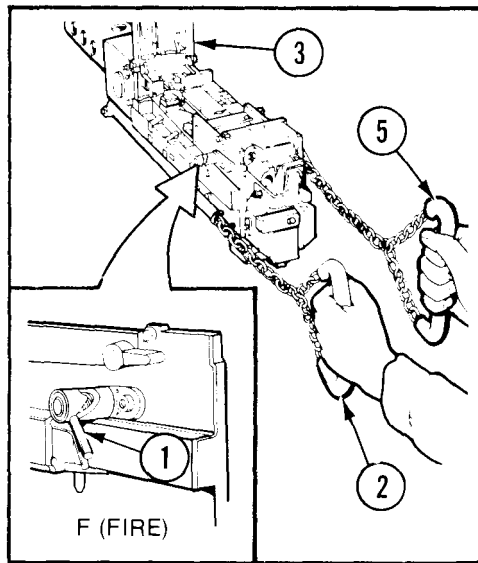
- 4 Lower feed tray assembly.



## 2-4. OPERATING PROCEDURES. (cont)

### CLEARING M85 MACHINE GUN (cont)

- 5 Put safety assembly (1) on F.
- 6 Pull charger handle (black) (2) back, pull manual firing handle (red) (5), and slowly let bolt assembly go forward.
- 7 Close cover assembly (3).



## **Section III. OPERATION UNDER UNUSUAL CONDITIONS**

### **2-5. EXTREME COLD.**

Do not lay hot weapon or barrel assembly in snow or ice; let it cool first. Clean (p 3-16) and lightly lubricate (p 3-30) frequently with CLP (item 1, app D). (Apply to the weapon only at temperatures above 0°F (- 18°C).) Keep the weapon and internal components free of moisture. Do frequent functional checks to prevent freezing.

### **2-8. HOT, WET CLIMATES.**

Do PMCS (p 2-3). Perform maintenance (p 3-7) more frequently. Keep weapon and ammunition clean and dry with wiping rag (item 2, app D). Clean (p 3-16) and lube (p 3-30) any hidden surfaces where corrosion could occur.

### **2-7. HOT, DRY CLIMATES.**

Lightly lube (p 3-30) internal working parts. Inspect daily. Clean (p 3-16) frequently. Wipe lubrication from exposed surfaces. Keep dust and sand out of parts. Keep weapon covered when possible.

### **2-8. HEAVY RAIN OR FORDING.**

If water gets in barrel assembly, dry with small arms cleaning swab (item 3, app D) and cleaning rod before firing. If needed, disassemble (p 3-7), clean (p 3-16), and lube (p 3-30) weapon.

## 2-9. NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) DECONTAMINATION PROCEDURES.

Decontamination procedures can be found in FM 21-40 and TM 3-220.

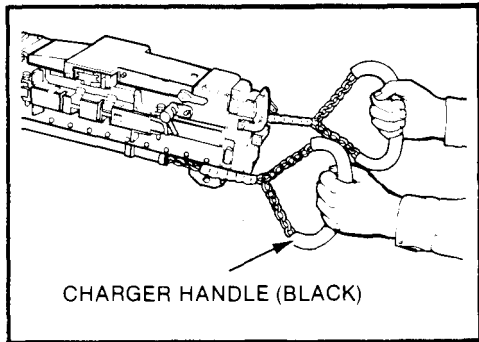
## 2-10. EMERGENCY PROCEDURES.

### M85 MACHINE GUN STOPS FIRING-IMMEDIATE ACTION

#### **WARNING**

Do not open cover assembly. If cover assembly is opened on a hot cartridge, an open cover cookoff could occur and result in serious injury or death.

- 1 Pull charger handle (black) to rear (seared position).
- 2 Attempt to fire.
- 3 If gun fails to fire and is hot (150 to 200 rounds fired within 2 minutes), wait 15 minutes before attempting secondary action.



## **M85 MACHINE GUN STOPS FIRING—SECONDARY ACTION**

**1** Clear weapon.

**2** Hand function:

- feed mechanism in cover assembly.
- recoiling parts.
- ammunition.

**3** If no fault is found, reload and attempt to fire. If gun still fails to fire, clear and troubleshoot (p 3-1).

## 2-10. EMERGENCY PROCEDURES. (cont)

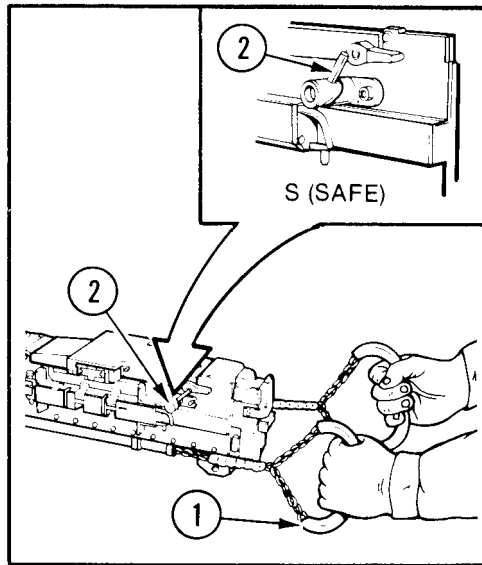
### RUNAWAY GUN (WON'T STOP FIRING)

#### WARNING

Keep M85 machine gun aimed on target and pointed downrange.

Do not let go of charger handle (black) when clearing weapon. A defective sear assembly may not lock bolt assembly in rear (seared position).

- 1 Pull charger handle (black) (1) to rear and hold. If near end of metallic link belt, let M85 machine gun fire.
- 2 After M85 machine gun has stopped firing, keep holding charger handle (black) to rear and place safety assembly (2) on S.



### 3 Clear the weapon.

#### **WARNING**

Never reload a runaway machine gun until repaired. Be sure weapon is cleared before removing from vehicle.

#### **NOTE**

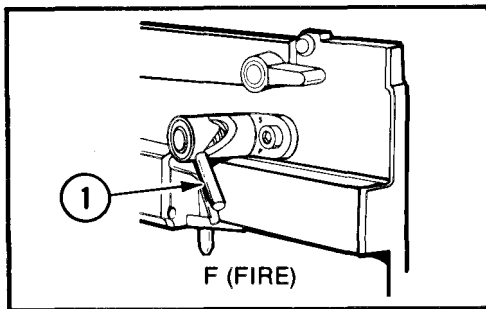
As soon as possible, have organizational maintenance check your machine gun.

### REMOVING A STUCK CARTRIDGE

#### **WARNING**

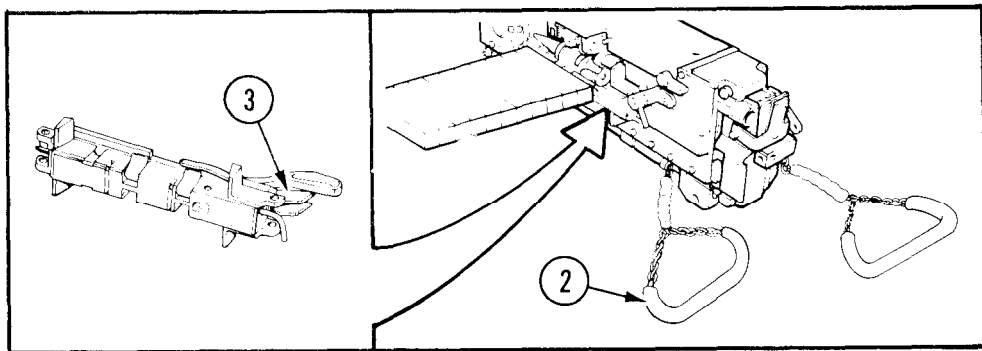
Do not stand in front of the barrel assembly when removing a stuck cartridge.

1 Place safety assembly (1) on F.



## 2-10. EMERGENCY PROCEDURES. (cont)

### REMOVING A STUCK CARTRIDGE (cont)



#### **WARNING**

Do not allow base of cartridge to strike face of bolt assembly or cartridge ejector when tapping it out of the chamber. It may fire on contact. A second operator is needed for this procedure.

- 2 Pull charger handle (black) (2) to rear just enough to prevent bolt assembly from swinging cartridge ejector (3) out.



### WARNING

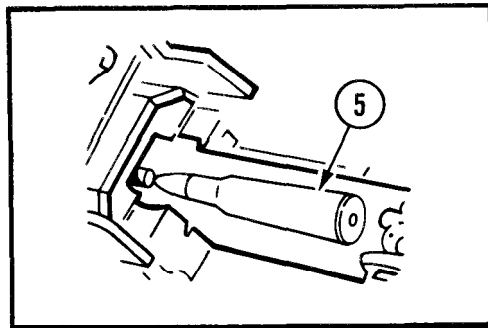
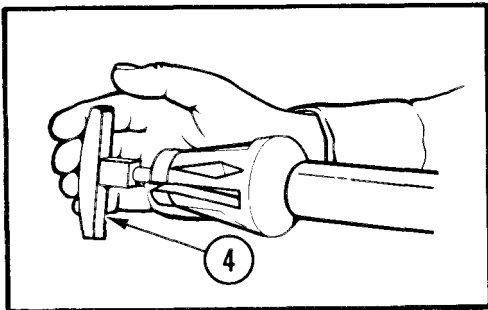
Do not remove barrel assembly from receiver assembly until live round has been removal.

Stand off to side when running cleaning rod through front of barrel assembly.

3 Run cleaning rod (4) through front of barrel assembly. With fingertips only, gently tap out stuck cartridge.

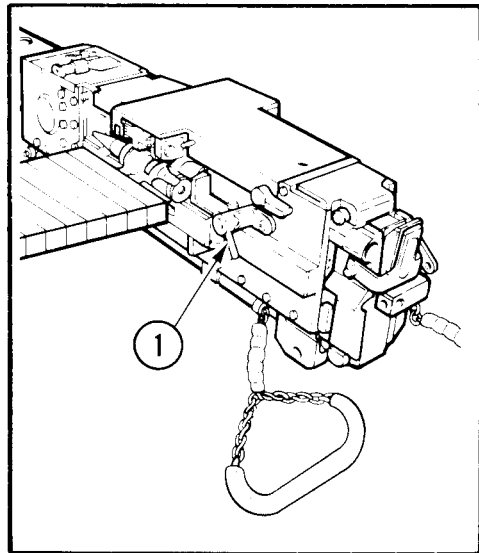
4 Remove cartridge (5).

5 Clean (p 3-16) and lubricate (p 3-30) bore and chamber.

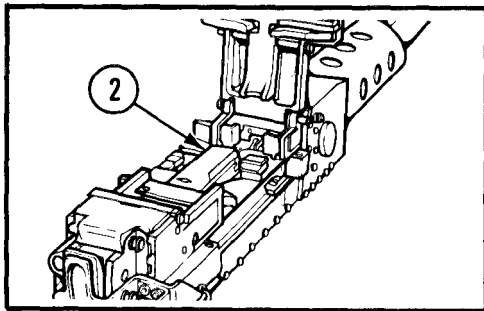


**2-10. EMERGENCY PROCEDURES. (cont)**  
**REMOVING A RUPTURED CARTRIDGE CASE (cont)**

- 1 Place safety assembly (1) on F.



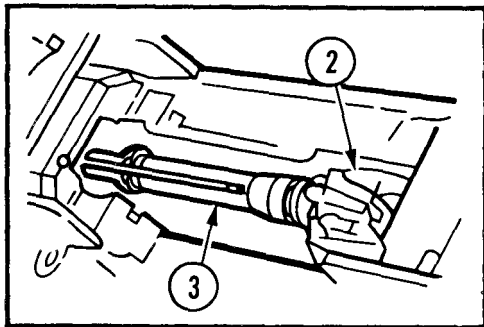
**2** Pull bolt assembly (2) part way back and hold.



**3** Load cartridge case extractor (3) into face of bolt assembly.

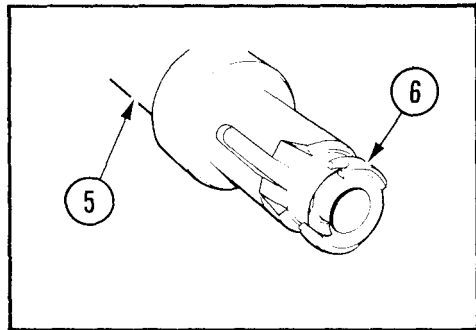
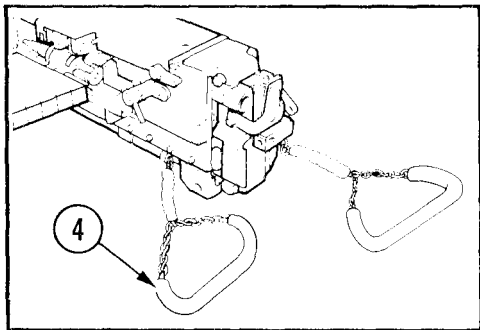
**4** Release bolt assembly (2) into battery (locked position).

**5** Leave cover assembly and feed tray assembly up.



## 2-10. EMERGENCY PROCEDURES. (cont)

### REMOVING A RUPTURED CARTRIDGE CASE (cont)

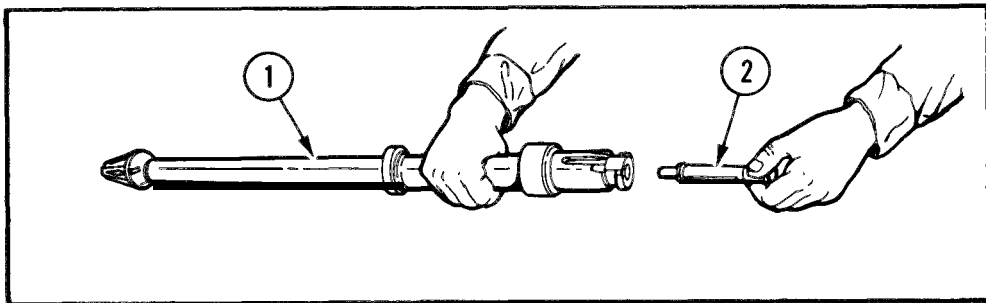


6 Slowly pull back charger handle (black) (4) until extracted cartridge case is just clear of chamber. Take out cartridge case by hand. Do not jerk charger handle (black). This will eject cartridge case and cartridge case extractor, and they could get lost.

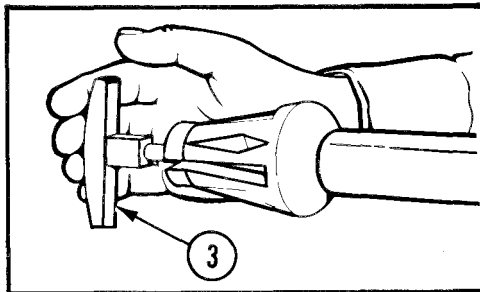
7 Remove barrel assembly (5), and check locking lugs (6) for damage.

8 Clean (p 3-16) and lubricate (p 3-30) bore and chamber.

## REMOVING A RUPTURED CARTRIDGE CASE-ALTERNATE METHOD



- 1 Remove barrel assembly (1).
- 2 Insert cartridge case extractor (2) by hand all the way into chamber.
- 3 Insert cleaning rod (3) in muzzle end of barrel assembly and gently tap out cartridge case.
- 4 Clean (p 3-16) and lubricate (p 3-30) bore and chamber.



# CHAPTER 3

## MAINTENANCE INSTRUCTIONS

---

### Section I. LUBRICATION INSTRUCTIONS

#### 3-1. LUBE GUIDE.

The instructions in this section are mandatory. (See page 3-30 for additional instructions.)

CLP (item 1, app D) will be used in all temperatures ranging from 0°F (- 18°C) to 150°F (65.5°C). Remember to remove excessive oil from the bore before firing.

### Section II. TROUBLESHOOTING PROCEDURES

#### 3-2. TROUBLESHOOTING.

**a.** The table lists the common malfunctions which you may find during the operation or maintenance of the M85 machine gun or its components. You should perform the tests/inspections and corrective actions in the order listed.

**b.** This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify organizational maintenance.

## TROUBLESHOOTING TABLE

---

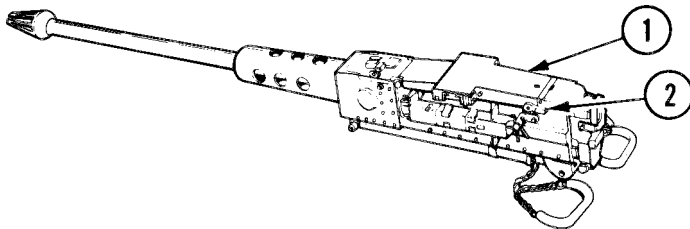
### MALFUNCTION

### TEST OR INSPECTION

### CORRECTIVE ACTION

---

#### 1. AMMUNITION DOES NOT FEED.



Step 1. Check for unlatched cover assembly (1).

Check cover latch lever (2) and reload.

Step 2. Check for rusted or dirty ammunition or links.

Remove ammunition and clean chamber (p 3-16).

## 3-2. TROUBLESHOOTING. (cont)

### TROUBLESHOOTING TABLE (cont)

---

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

---

#### 2. AMMUNITION DOES NOT CHAMBER.

Step 1. Check to see if ammunition belt is upside down.

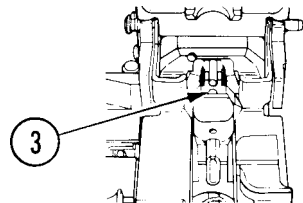
Reload correctly (open side of link down) (p 2-15).

Step 2. Check for rusted or dirty ammunition.

Remove ammunition and clean chamber (p 3-16).

Step 3. Check for obstruction in chamber (3).

Clear chamber (p 2-29 or 2-32).





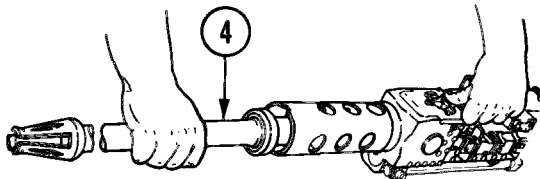
## TROUBLESHOOTING TABLE (cont)

---

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|

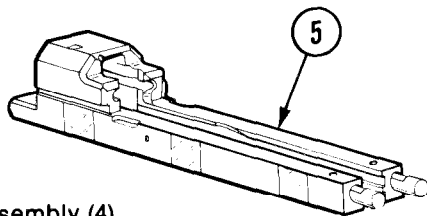
---

### 3. M85 MACHINE GUN DOES NOT LOCK.



Step 1. Check for unlocked barrel assembly (4).

Remove and reinstall barrel assembly (p 3-8 and 3-38).



Step 2. Check for obstruction in barrel extension assembly (5) and chamber of barrel assembly or receiver assembly.

Remove obstruction (p 2-29 or 2-32).

### 3-2. TROUBLESHOOTING. (cont)

#### TROUBLESHOOTING TABLE (cont)

---

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

---

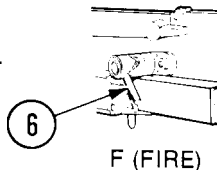
#### 4. M85 MACHINE GUN DOES NOT FIRE.

Step 1. Check to see if safety assembly (6) is on S.

Put safety assembly on F.

Step 2. Check for loose solenoid connection.

Tighten connection. (Refer to appropriate vehicle TM.)



#### 5. M85 MACHINE GUN DOES NOT UNLOCK.

Notify organizational maintenance.

## TROUBLESHOOTING TABLE

---

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

---

6. SPENT CARTRIDGE CASE DOES NOT EXTRACT.

Step 1. Check for ruptured cartridge case.

Remove ruptured cartridge case (p 2-32). Clean (p 3-16) and reload (p 2-15).

Step 2. Check for rusted, dirty, or damaged ammunition (short recoil).

Clear and reload (p 2-15).

7. SPENT CARTRIDGE CASE DOES NOT EJECT.

Notify organizational maintenance.

8. M85 MACHINE GUN DOES NOT COCK.

Notify organizational maintenance.

## 3-2. TROUBLESHOOTING (cont)

### TROUBLESHOOTING TABLE (cont)

---

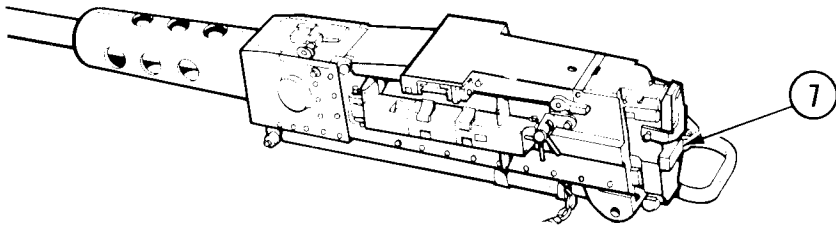
**MALFUNCTION**

**TEST OR INSPECTION**

**CORRECTIVE ACTION**

---

**9. M85 MACHINE GUN FIRES AT LOW RATE, THEN AT HIGH RATE.**



Check for unlocked rate selector (7).

- a. Position rate selector in locked position.
- b. If problem recurs, notify organizational maintenance.

## TROUBLESHOOTING TABLE (cont)

---

### MALFUNCTION

### TEST OR INSPECTION

### CORRECTIVE ACTION

---

#### 10. M85 MACHINE GUN DOES NOT STOP FIRING (RUNAWAY GUN).

Notify organizational maintenance.

---

## Section III. MAINTENANCE PROCEDURES

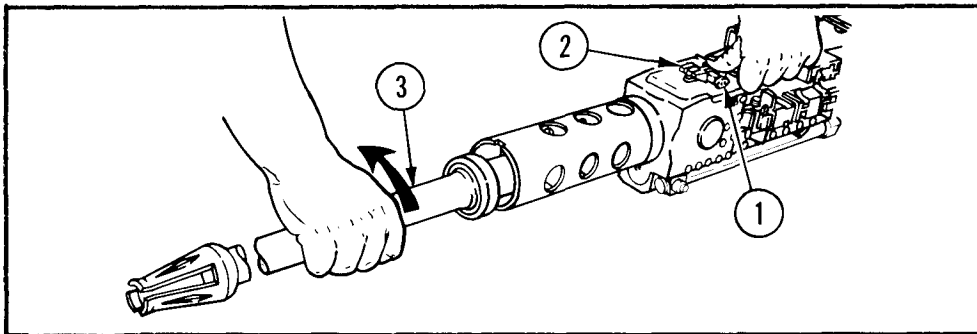
### 3-3. DISASSEMBLY.

#### WARNING

Be sure weapon is clear of ammunition before removing it from vehicle for any maintenance procedure.

DO NOT interchange bolt assemblies, barrel extension assemblies, or barrel assemblies from one weapon to another. Doing so may cause the headspace to change and result in serious injury or death.

### 3-3. DISASSEMBLY. (cont)



#### BARREL ASSEMBLY

1 Push in latch lock (1) and hold.

2 Press barrel latch (2).

3 Rotate barrel assembly (3) 1/4 turn counterclockwise and pull to remove.

## BACK PLATE ASSEMBLY

1 Open cover assembly.

### WARNING

Be sure bolt assembly is forward, relieving tension on bolt buffer group, before removing back plate assembly.

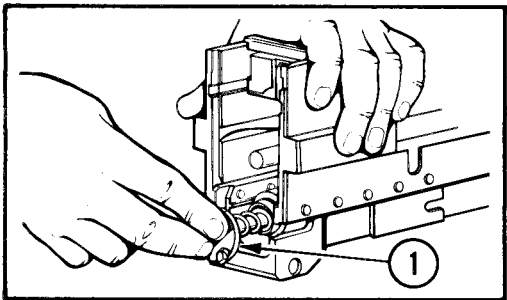
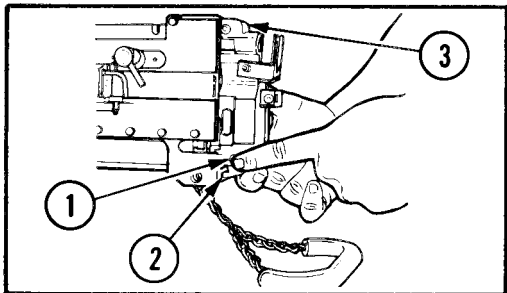
2 Press lock (1).

3 Raise latch (2).

4 Raise back plate assembly (3) and remove.

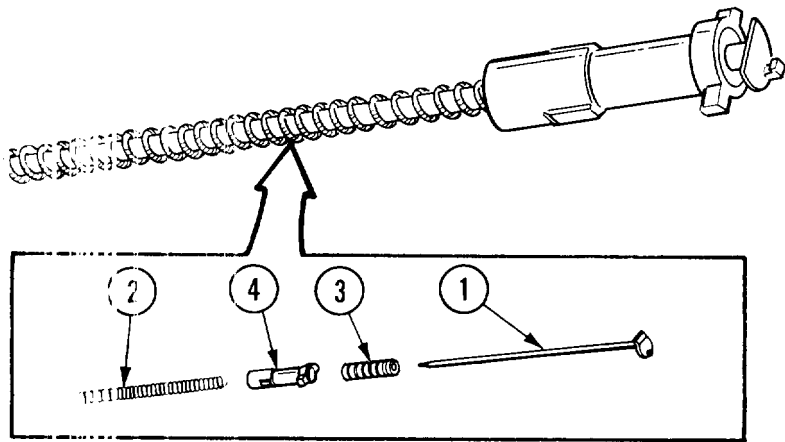
## BOLT BUFFER GROUP

1 Push in guide rod (1) and turn to release.



### 3-3. DISASSEMBLY. (cont.)

#### BOLT BUFFER GROUP (cont.)

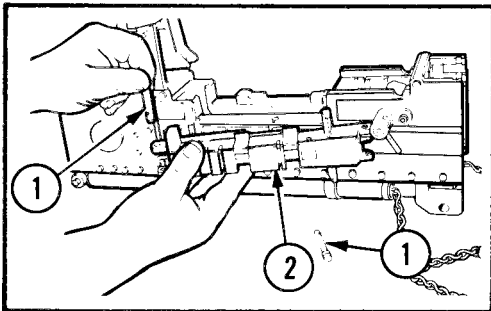


2 Remove guide rod (1) and springs (2 and 3) from buffer sleeve (4).



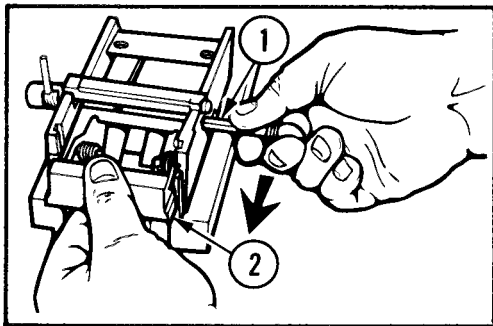
## FEED AND EJECTOR ASSEMBLY

- 1 Pull out two quick release pins (1).
- 2 Remove feed and ejector assembly (2).



## SEAR ASSEMBLY

Push in with pin (1) and remove sear assembly (2) in direction of arrow, as shown in illustration.



### 3-3. DISASSEMBLY. (cont)

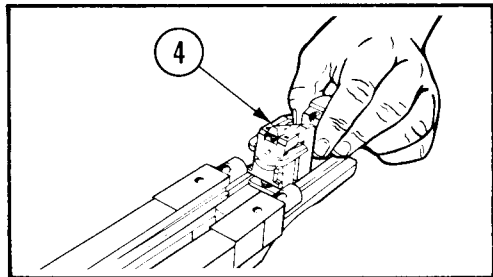
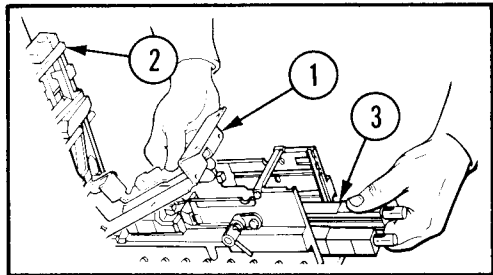
#### BARREL EXTENSION ASSEMBLY AND BOLT ASSEMBLY

- 1 Lift up feed tray assembly (1) with cover assembly (2).
- 2 Pull out barrel extension assembly (3).

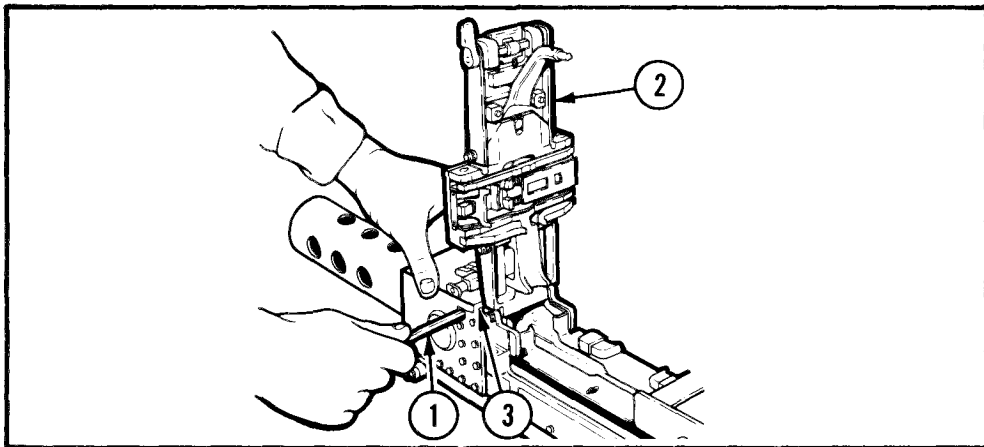
#### CAUTION

Make sure bolt assembly is upright after removal to avoid losing retaining pin.

- 3 Slide bolt assembly (4) rearward and remove.



## COVER ASSEMBLY, FEED TRAY ASSEMBLY, AND ACCELERATOR ASSEMBLY

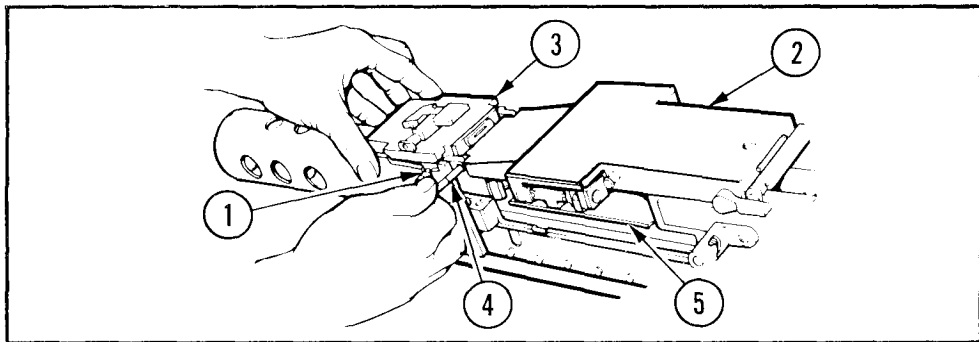


1 Remove (accelerator) quick release pin (1).

2 Close cover assembly (2), releasing tension from accelerator assembly (3).  
The accelerator assembly should then raise slightly.

### 3-3. DISASSEMBLY. (cont)

#### COVER ASSEMBLY, FEED TRAY ASSEMBLY, AND ACCELERATOR ASSEMBLY



3 Lift accelerator assembly (3) enough to partially insert (accelerator) quick release pin (1) and hold accelerator assembly up.

4 Remove (cover) quick release pin (4).

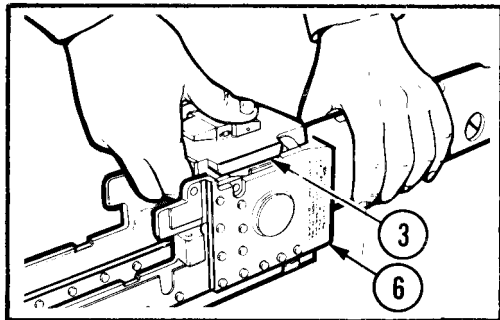
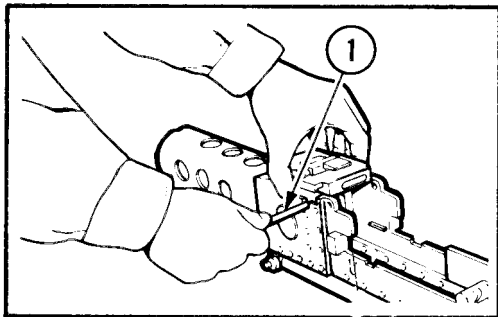
5 Remove cover assembly (2) and feed tray assembly (5).

- 6 Remove (accelerator) quick release pin (1).

**NOTE**

Removing accelerator assembly requires effort. Be careful not to lose plunger retaining pins when removing accelerator assembly.

- 7 Lift up accelerator assembly (3) and remove from receiver assembly (6).



### 3-3. DISASSEMBLY. (cont)

#### HAND CHARGER ASSEMBLY

- 1 Pull out knob (1).
- 2 Push hand charger assembly (2) forward, pull up, and remove.

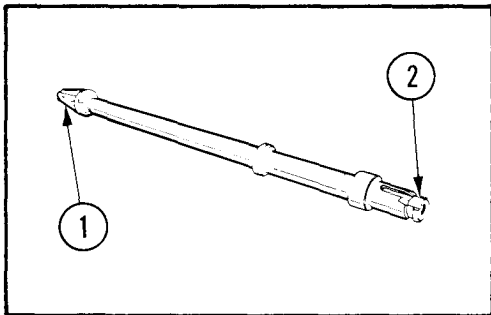
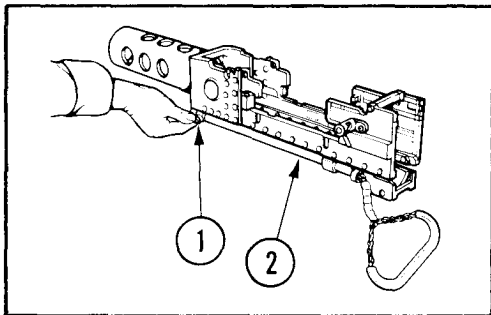
### 3-4. CLEANING

#### NOTE

Apply CLP (item 1, app D) only at temperatures above 0°F (-18° C).

#### BARREL ASSEMBLY

- 1 Apply CLP (item 1, app D) to a bore brush and run it through the bore (1) several times from the chamber end.
- 2 Clean the chamber (2) with a chamber brush and CLP (item 1, app D).



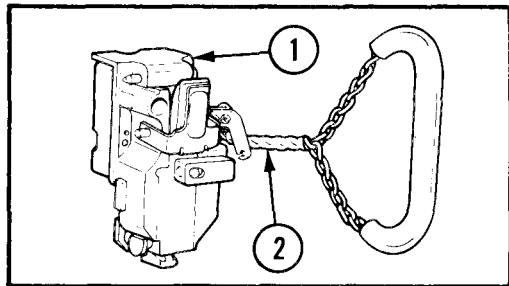
- 3 Allow the bore and chamber to soak in CLP (item 1, app D) a few minutes, then clean both with a swab (item 3, app D).

## BACK PLATE ASSEMBLY AND TRIGGER EXTENSION ASSEMBLY

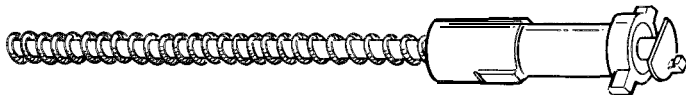
### CAUTION

Do not submerge back plate assembly in any liquid.

Clean corroded or dirty areas of back plate assembly (1) and trigger extension assembly (2) with wiping rag (item 2, app D) and CLP (item 1, app D).



## BOLT BUFFER GROUP

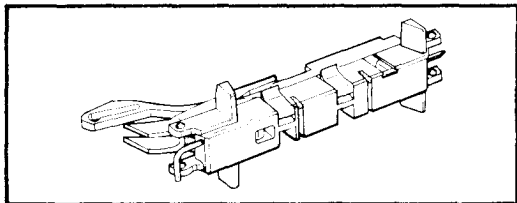


Apply CLP (item 1, app D) to all parts; allow to soak for a few minutes, and wipe dry with wiping rag (item 2, app D).

### 3-4. CLEANING. (cont)

#### FEED AND EJECTOR ASSEMBLY

Apply CLP (item 1, app D) to all parts; allow to soak for a few minutes, and wipe dry with wiping rag (item 2, app D).

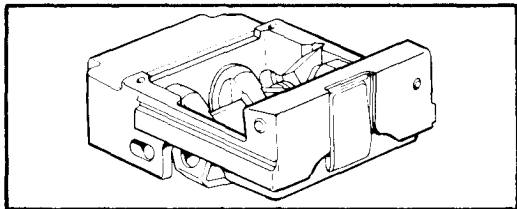


#### SEAR ASSEMBLY

##### CAUTION

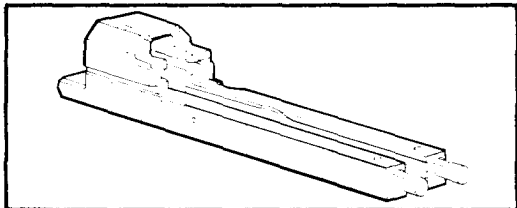
Do not submerge sear assembly in any liquid.

Apply CLP (item 1, app D) to all parts; allow to soak for a few minutes, and wipe dry with wiping rag (item 2, app D).



#### BARREL EXTENSION ASSEMBLY

Apply CLP (item 1, app D) to all parts; allow to soak for a few minutes, and wipe dry with wiping rag (item 2, app D).





## BOLT ASSEMBLY

### CAUTION

Do not submerge bolt assembly in any liquid.

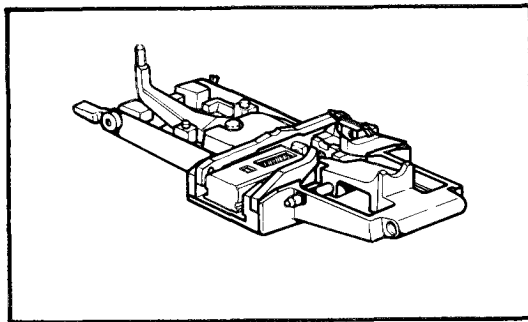
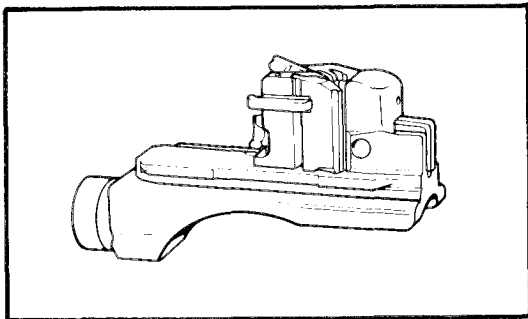
### NOTE

Be careful not to lose retaining pin when cleaning bolt assembly.

Apply CLP (item 1, app D) to all parts; allow to soak for a few minutes, and wipe dry with wiping rag (item 2, app D).

## COVER ASSEMBLY

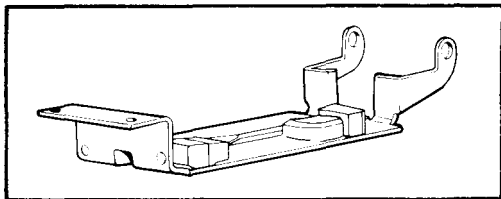
Apply CLP (item 1, app D) to all parts; allow to soak for a few minutes, and wipe dry with wiping rag (item 2, app D).



### 3-4. CLEANING. (cont)

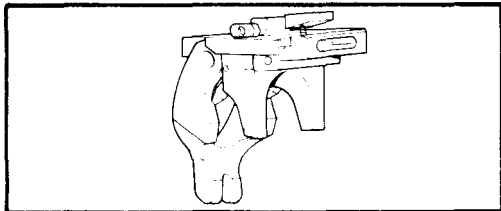
#### FEED TRAY ASSEMBLY

Apply CLP (item 1, app D) to all parts; allow to soak for a few minutes, and wipe dry with wiping rag (item 2, app D).



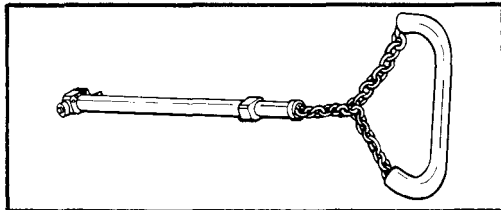
#### ACCELERATOR ASSEMBLY

Apply CLP (item 1, app D) to all parts; allow to soak for a few minutes, and wipe dry with wiping rag (item 2, app D).



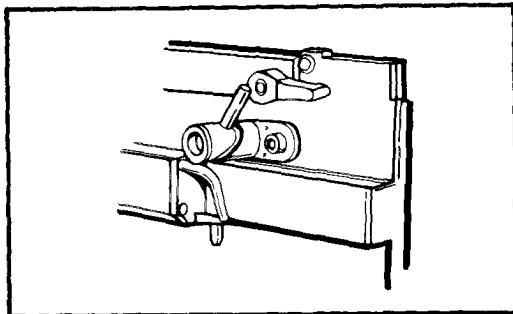
#### HAND CHARGER ASSEMBLY

Apply CLP (item 1, app D) to all parts; allow to soak for a few minutes, and wipe dry with wiping rag (item 2, app D).



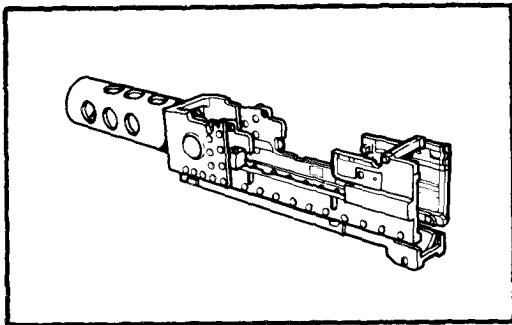
## SAFETY ASSEMBLY

Clean with wiping rag (item 2, app D).



## RECEIVER ASSEMBLY

Clean receiver assembly with receiver brush (app C) and CLP (item 1, app D).



### 3-5. INSPECTION.

#### NOTE

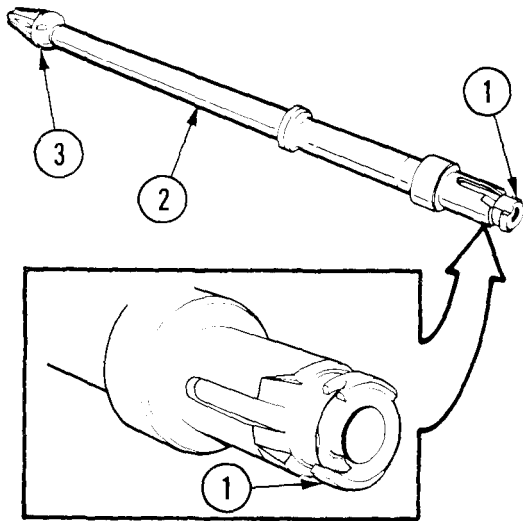
If faults are found during inspection which cannot be corrected, notify organizational maintenance.

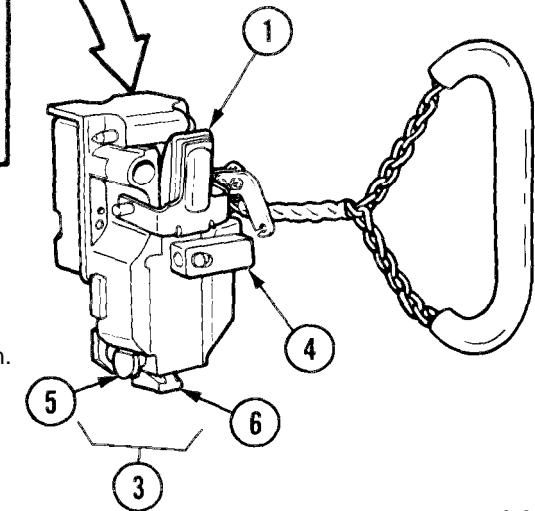
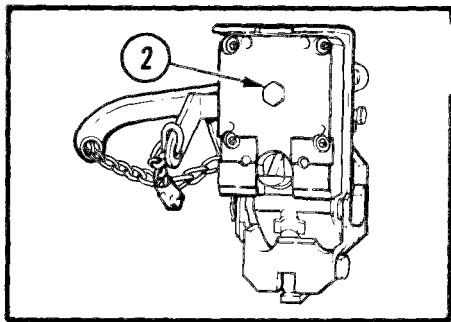
#### BARREL ASSEMBLY

- 1 Check locking lugs (1) for cracks.
- 2 Check inside and outside of barrel (2) for rough spots, bulges, cracks, rust, and foreign matter.
- 3 Be sure flash suppressor (3) is tight.

#### BACK PLATE ASSEMBLY

- 1 Check for cracks, foreign matter, and that all parts are secure.

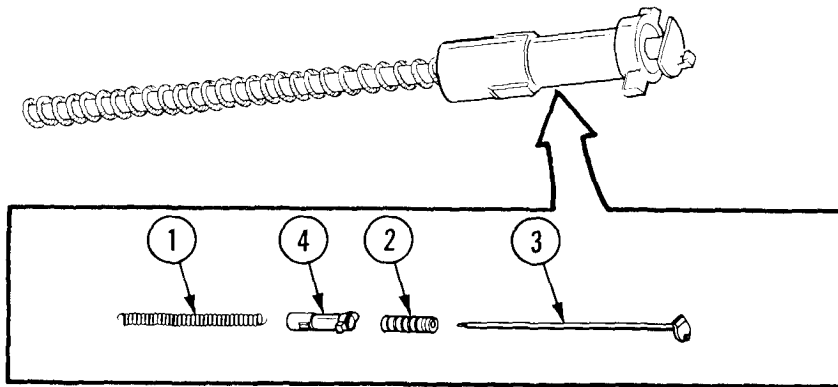




- 2 Press trigger assembly (1) and check that plunger (2) protrudes from back plate assembly (3).
- 3 Release trigger assembly (1) and check that plunger (2) and trigger assembly return to normal position.
- 4 Check that rate selector (4) operates freely and locks in place.
- 5 Check lock (5) and latch (6) for smooth operation.

### 3-5. INSPECTION. (cont)

#### BOLT BUFFER GROUP



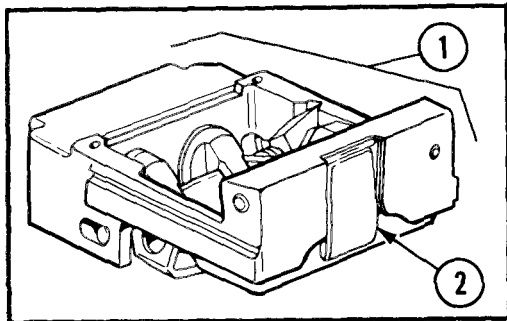
1 Check springs (1 and 2) for cracks or kinks.

2 Be sure guide rod (3) is straight and not burred or damaged.

3 Check buffer sleeve (4) for cracks or burrs.

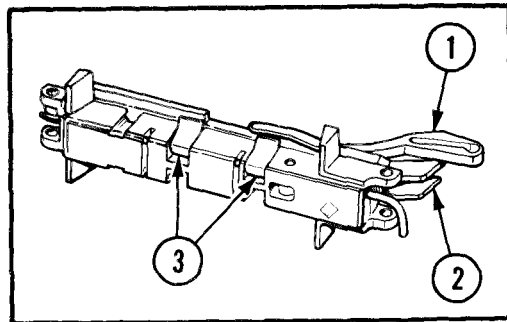
## SEAR ASSEMBLY

- 1 Check sear assembly (1) for cracks, burrs, and foreign material.
- 2 Be sure all pins are flush.
- 3 Check spring action by pressing bolt sear lever (2).



## FEED AND EJECTOR ASSEMBLY

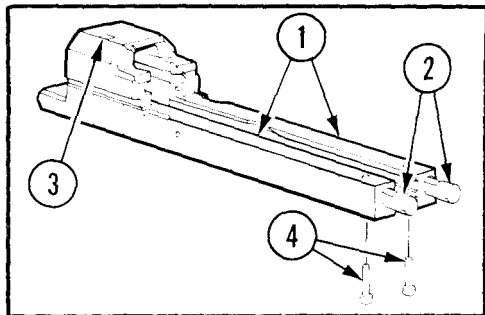
- 1 Check for cracks and burrs.
- 2 Be sure all parts fit and function properly.
- 3 Check spring action of lever assembly (1), cartridge ejector (2), and belt retaining pawls (3).



### 3-5. INSPECTION. (cont)

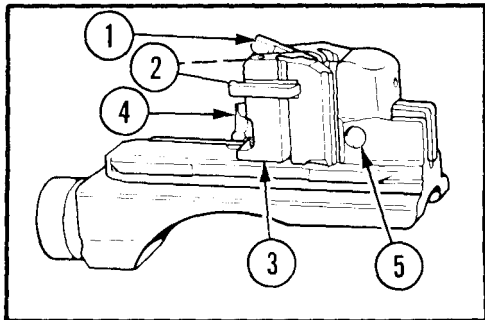
#### BARREL EXTENSION ASSEMBLY

- 1 Check for cracks and burrs.
- 2 Check guide rails (1) for foreign matter.
- 3 Check spring action of return rods (2) and interlock (3).
- 4 Check for presence of pins (4).



#### BOLT ASSEMBLY

- 1 Check for cracks and burrs.
- 2 Check for proper functioning of cartridge rammer (1), cartridge retainers (2), and cartridge extractor (3).





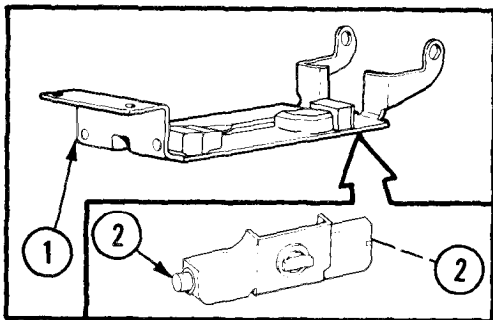
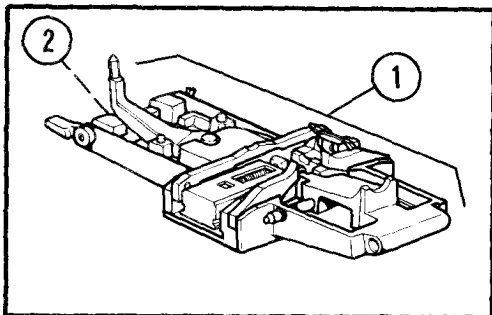
- 3 Check that firing pin (4) protrudes beyond face of bolt block.
- 4 Check that headless retaining grooved pin (5) is present.

### COVER ASSEMBLY

- 1 Check cover assembly (1) for cracks, burrs, and damage.
- 2 Check to be sure cover latch (2) locks properly.
- 3 Check spring action of all components.

### FEED TRAY ASSEMBLY

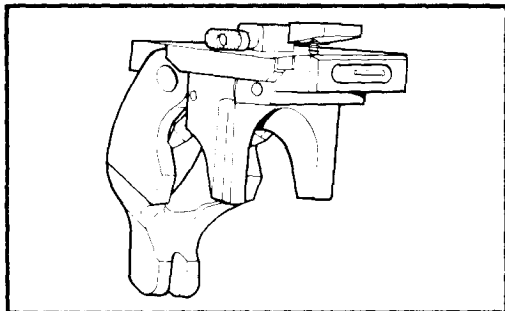
- 1 Check feed tray assembly (1) for rust, cracks, distortion, and burrs.
- 2 Check spring action of link guide plungers (2).



### 3-5. INSPECTION. (cont)

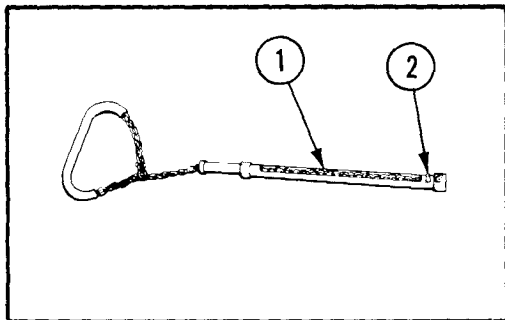
#### ACCELERATOR ASSEMBLY

- 1 Check for rust, cracks, rough edges, and burrs.
- 2 Check spring action of all parts.
- 3 Check that all pins are secure.



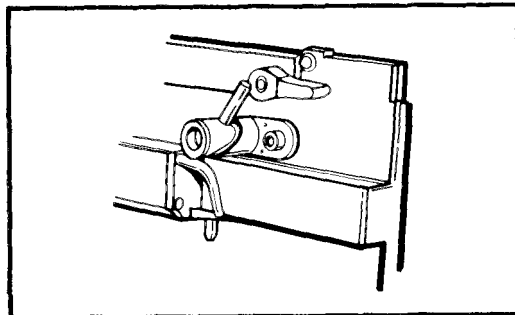
#### HAND CHARGER ASSEMBLY

- 1 Check for dents and distortion.
- 2 Check spring (1) for proper action.
- 3 Check hand charger pin (2) for bends and cracks.



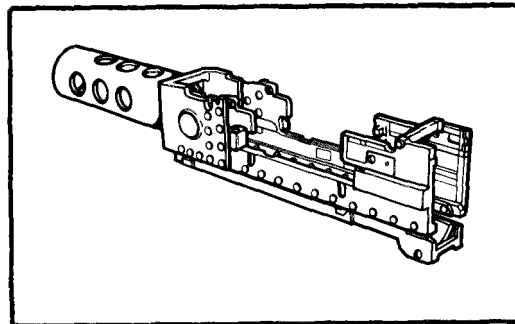
## SAFETY ASSEMBLY

- 1 Check spring action.
- 2 Check for rust and burrs.



## RECEIVER ASSEMBLY

Check for rust, cracks, burrs, loose rivets, and rough surface edges.



### **3-6. LUBRICATION.**

Apply a film of CLP (item 1, app D) (barely visible to the eye) to all parts of the M85 machine gun. Apply only at temperatures above 0°F (-18°C). Use wiping rag (item 2, app D) to wipe excess oil off of receiver assembly and top surface of feed tray assembly and swab out barrel assembly before firing. Actuate hand charger assembly to spread oil. Take weapon to organizational maintenance for servicing internal parts that require periodic lubrication.

### **3-7. REASSEMBLY.**

#### **WARNING**

Before any reassembly procedure, make sure the chamber is clear.

DO NOT interchange bolt assemblies, barrel extension assemblies, or barrel assemblies from one weapon to another. Doing so may cause the headspace to change and result in serious injury or death.

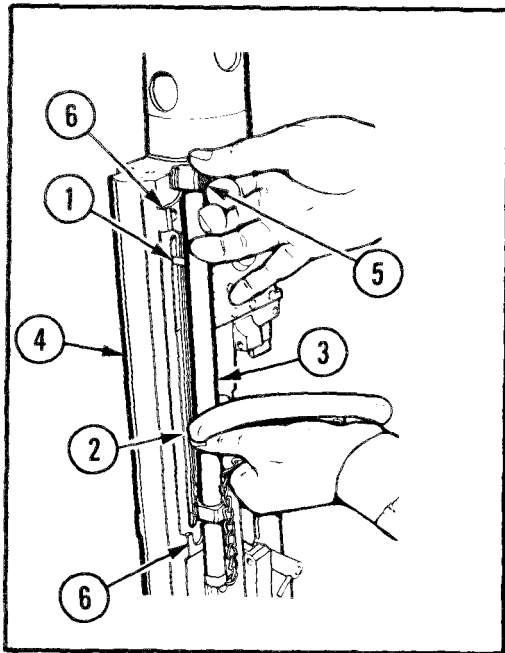
## HAND CHARGER ASSEMBLY

- 1 Seat bolt retracting headless shoulder pin (1) in receiver groove (2).

### NOTE

Be careful when pushing plunger into knob. Knob could come off.

- 2 Press hand charger assembly (3) against receiver assembly (4) and pull out on knob (5) at the same time.
- 3 Aline hand charger assembly (3) with T-slots (6).
- 4 Slide hand charger assembly (3) down through T-slots (6), releasing knob (5).
- 5 Ensure hand charger assembly (3) is locked to receiver assembly (4).



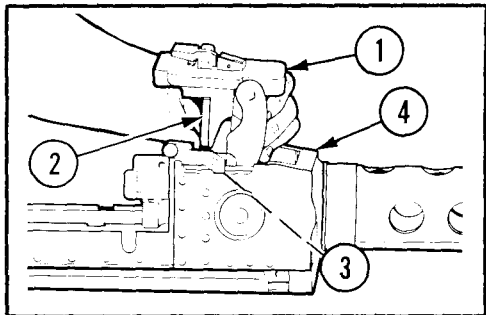
### 3-7. REASSEMBLY. (cont)

#### ACCELERATOR ASSEMBLY

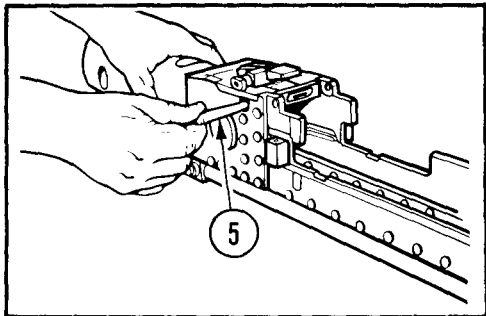
##### WARNING

Do not pinch fingers when reassembling accelerator assembly.

- 1 Press accelerator assembly (1), align rails (2) with grooves (3) in receiver assembly (4), and push down.

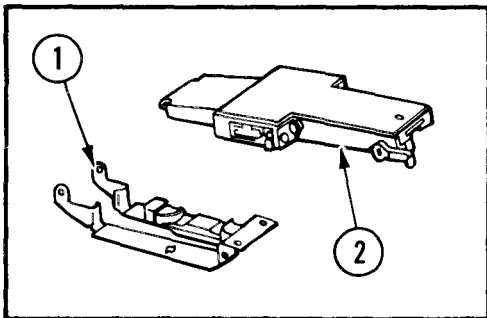


- 2 Install quick release pin (5).



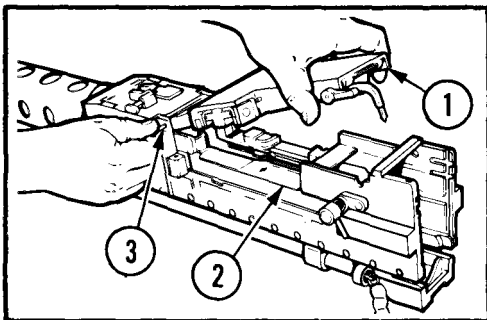
## FEED TRAY ASSEMBLY

Install feed tray assembly (1) on cover assembly (2).



## COVER ASSEMBLY

- 1 Install cover assembly (1) with feed tray assembly (2) and lock.
- 2 Install quick release pin (3).



### 3-7. REASSEMBLY. (cont)

#### BOLT ASSEMBLY

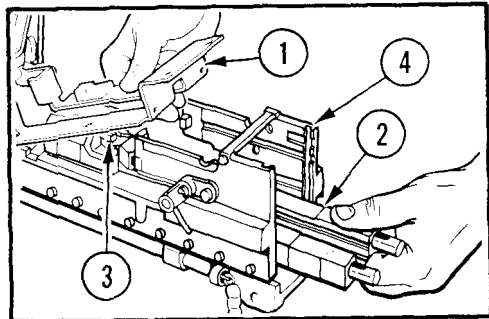
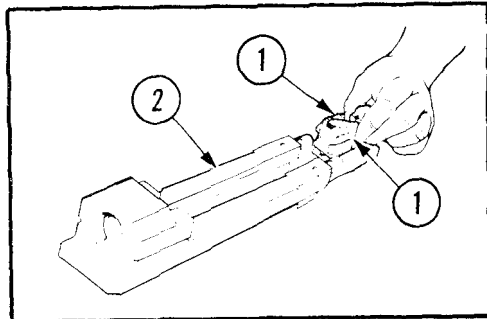
#### CAUTION

Make sure that retaining pin is in bolt slide before installing bolt assembly in barrel extension assembly.

- 1 Press bolt locks (1) on each side.
- 2 Slide rails into grooves of barrel extension assembly (2).

#### BARREL EXTENSION ASSEMBLY

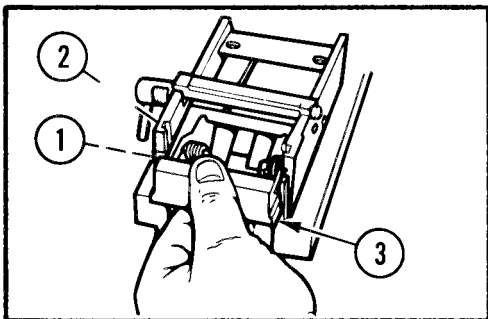
- 1 Lift feed tray assembly (1).
- 2 Slide barrel extension assembly (2) with bolt assembly (3) into receiver assembly (4).





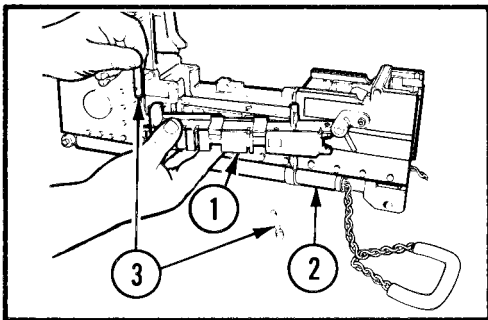
## SEAR ASSEMBLY

- 1 Line up rails (1) with receiver grooves (2).
- 2 Push sear assembly (3) in until it locks.



## FEED AND EJECTOR ASSEMBLY

- 1 Position feed and ejector assembly (1) on receiver assembly (2).
- 2 Install two quick release pins (3).



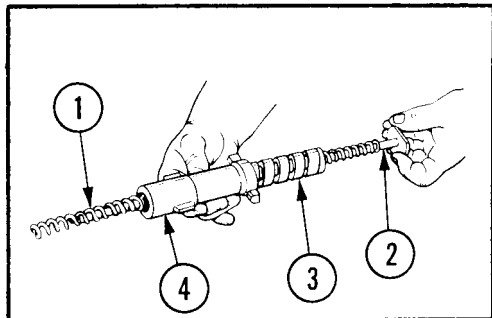
### 3-7. REASSEMBLY. (cont)

#### BOLT BUFFER GROUP

1 Install spring (1) on guide rod (2).

2 Install spring (3).

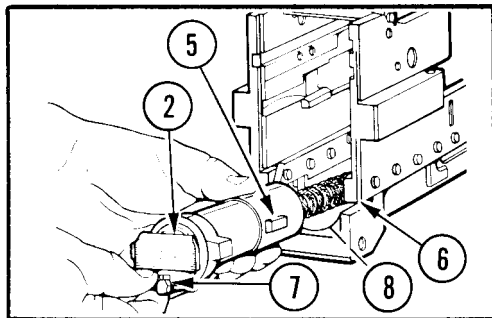
3 Install buffer sleeve (4).



4 Push in guide rod (2) and turn.

5 Aline buffer guide lugs (5) with rail (6) in receiver assembly.

6 Engage tang (7) in receiver notch (8).



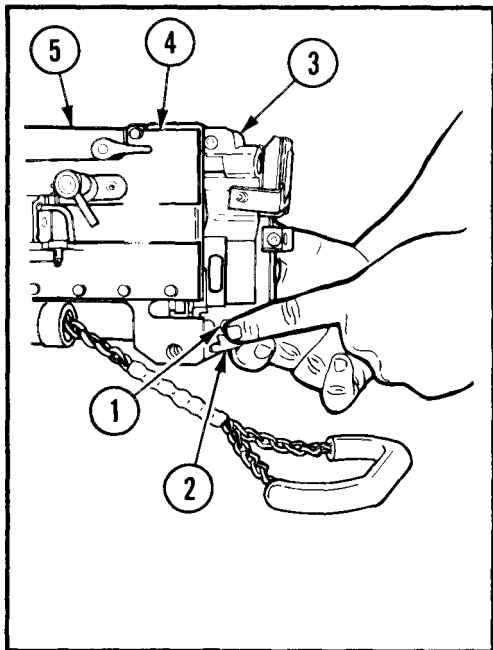
## BACK PLATE ASSEMBLY

- 1 Press lock (1).
- 2 Lift up latch (2).
- 3 Slide back plate assembly (3) down into receiver assembly (4) until it locks.
- 4 Release lock (1) and latch (2).

### NOTE

Try to remove back plate assembly to make sure it is locked in receiver assembly.

- 5 Close cover assembly (5).



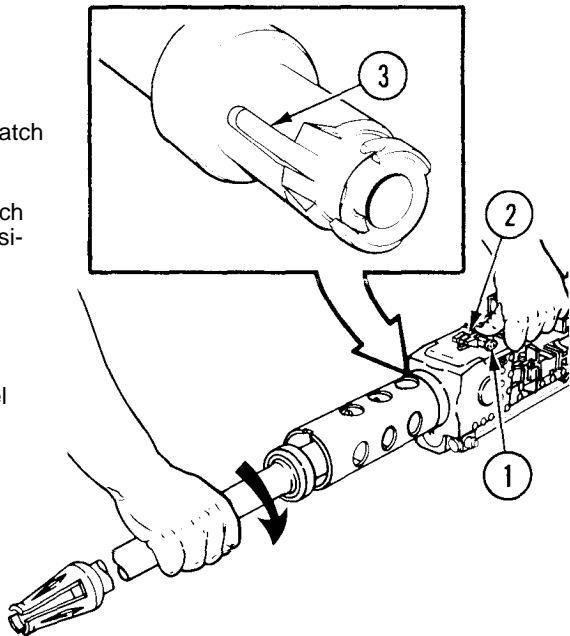
### 3-7. REASSEMBLY. (cont)

#### BARREL ASSEMBLY

- 1 Press latch lock (1) and barrel latch (2).
- 2 Insert barrel assembly with notch (3) on barrel in the 9 o'clock position.
- 3 Rotate barrel assembly 1/4 turn clockwise.
- 4 Release latch lock (1) and barrel latch (2).

#### NOTE

Try to rotate barrel assembly to make sure it is locked to barrel extension assembly. If barrel assembly will not go in chamber, pull back slightly on charger handle (black).



### 3-8. SAFETY/FUNCTIONAL CHECK.

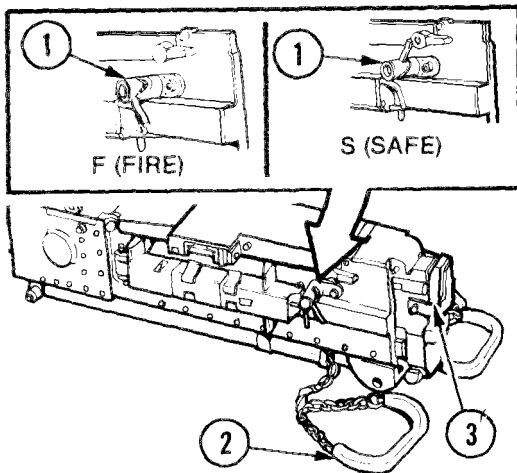
The M85 machine gun must be assembled to perform the safety/functional check.

#### WARNING

Make sure barrel bore and chamber are clear.

#### M85 MACHINE GUN

- 1 Place safety assembly (1) on F.
- 2 Charge weapon, locking parts to rear.
- 3 Place safety assembly (1) on S.
- 4 Hold charger handle (black) (2) to rear and press trigger assembly (3). If bolt assembly is released, notify organizational maintenance.
- 5 Place safety assembly (1) on F.
- 6 Press trigger assembly (3) and ease bolt assembly forward.



# CHAPTER 4

## AMMUNITION

---

### 4-1. AUTHORIZED AMMUNITION.

#### **WARNING**

This is the only ammunition authorized for use in your machine gun. If it is not shown, it is not authorized.

Normal training mix: 4 ball M2 and 1 tracer M17 with M15A2 link.  
Normal combat mix: 4 API M8 and 1 APIT M20 with M15A2 link.

#### **NOTE**

All cartridges except the M2 DUMMY have plain cases.

**PLAIN  
TIP**



**PERFORATED  
CASE**

**DUMMY (M2)**

**PLAIN  
TIP**









**BALL (M2)/M33**

**BLACK TIP**



**ARMOR-  
PIERCING  
(M2)**

#### 4-1. AUTHORIZED AMMUNITION. (cont)

|   |  |   |
|---|--|---|
|  <p>ALUMINUM TIP</p> <p>ARMOR-PIERCING INCENDIARY (M8)</p>           |  <p>RED OVER ALUMINUM TIP</p> <p>ARMOR-PIERCING INCENDIARY TRACER (M20)</p>           |  <p>LIGHT BLUE TIP</p> <p>CRIMP</p> <p>INCENDIARY (M1)</p> |
|  <p>DARK BLUE OVER BLUE TIP</p> <p>CRIMP</p> <p>INCENDIARY (M23)</p> |  <p>RED TIP (M1 AND M21)</p> <p>ORANGE TIP (M10)</p> <p>TRACER (M1, M21, AND M10)</p> |  <p>BROWN OR MAROON TIP</p> <p>TRACER (M17)</p>            |



## **4-2. AMMUNITION WHICH FAILS TO FIRE.**

Dispose of any ammunition which fails to fire according to authorized procedures.

## **4-3. CARE, HANDLING, AND PRESERVATION.**

**a.** Do not open ammunition containers until the ammunition is to be used. Ammunition removed from the airtight containers, particularly in damp climates, is likely to corrode.

**b.** Protect ammunition from mud, dirt, and water. If the ammunition gets wet or dirty, wipe it off prior to use. Wipe off light corrosion as soon as it is discovered. Heavily corroded cartridges or cartridges which have dented cases or loose projectiles should not be fired.

**c.** Do not expose ammunition to the direct rays of the sun. If the powder is hot, excessive pressure may develop when the gun is fired.

**d.** Do not oil or grease ammunition. Dust and other abrasives collecting on oiled or greased ammunition will damage the operating parts of the gun. Oiled cartridges will produce excessive chamber pressure.

# APPENDIX A

## REFERENCES

---

### A-1 . SCOPE.

This appendix lists all forms, technical manuals, and miscellaneous publications referenced in this manual.

### A-2. FORMS.

|  |              |
|--|--------------|
| Equipment Inspection and<br>Maintenance Worksheet . . . . .      | DA Form 2404 |
| Hand Receipt/Annex No. . . . .                                   | DA Form 2062 |
| Quality Deficiency Report . . . . .                              | SF 368       |
| Recommended Changes to Publications<br>and Blank Forms . . . . . | DA Form 2028 |

### A-3. TECHNICAL MANUALS.

|   |                     |
|---|---------------------|
| Ammunition and Explosives Standards . . . . .   | TM 9-1300-206       |
| Chemical, Biological, and Radiological (CBR)<br>Decontamination . . . . .   | TM 3-220            |
| Hand Receipt Manual Covering Components of<br>End Item (COEI), Basic Issue Items (BI),<br>and Additional Authorization List (AAL)<br>for Machine Gun, Caliber .50, Fixed, M85 . . . . . | TM 9-1005-231-10-HR |

Operator's and Organizational Maintenance  
Manual (Including Repair Parts and Special  
Tools List) Blank Firing Attachment (BFA)  
M20 (NSN 1005-01-090-4246) for Cal. .50  
M85 Machine Gun . . . . . TM 9-1005-315-12&P

#### **A-4. MISCELLANEOUS PUBLICATIONS.**

The Army Maintenance Management  
System (TAMMS) . . . . . DA PAM 738-750  
Army Medical Department  
Expendable/Durable items . . . . . CTA 8-100  
Expendable/Durable Items (Except Medical, Class V,  
Repair Parts, and Heraldic items) . . . . . CTA 50-970  
First Aid for Soldiers . . . . . FM 21-11(TEST)  
Identification and Distribution  
of DA Publications and Issue of  
Agency and Command Administrative  
Publications . . . . . AR 310-2  
NBC (Nuclear, Biological, and Chemical)  
Defense . . . . . FM 21-40

# APPENDIX B

## COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

---

### Section I. INTRODUCTION

#### **B-1. SCOPE.**

This appendix lists components of end item and basic issue items for the M85 machine gun to help you inventory items required for safe and efficient operation

#### **B-2. GENERAL.**

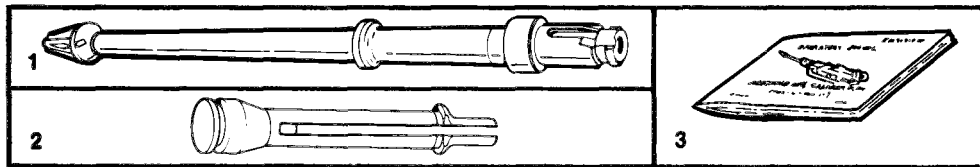
The Components of End Item and Basic Issue Items Lists are divided into the following sections:

**a. Section II. Components of End Item.** Not applicable.

**b. Section III. Basic Issue Items.** These are the minimum essential items required to place the M85 machine gun in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the M85 machine gun during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

**B-0**

## Section III. BASIC ISSUE ITEMS



| (1)<br>Illus<br>Number | (2)<br>National<br>stock<br>Number | (3)<br>Description<br>FSCM and Part Number                     | (4)<br>Usable<br>On<br>Code | (5)<br>Qty<br>rqr |
|------------------------|------------------------------------|--|-----------------------------|-------------------|
| 1                      | 1005-00-463-4616                   | BARREL ASSEMBLY, GUN:<br>(flash suppressor)<br>(19204) 8448439 | EA                          | 1                 |
| 2                      | 493340-716-0041                    | EXTRACTOR, RUPTURED<br>CARTRIDGE CASE:<br>(192040) 7160041     | EA                          | 1                 |
| 3                      | ...                                | TECHNICAL MANUAL:<br>TM 9-1005-231-10                          | EA                          | 1                 |

### **B-3. EXPLANATION OF COLUMNS.**

The following provides an explanation of columns found in the tabular listings:

**a. Column (1)-Illustration Number (Illus Number).** This column indicates the number of the illustration in which the item is shown,

**b. Column (2)-National Stock Number.** Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

**c. Column (3)-Description.** Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number.

**d. Column (4)-Unit of Measure (U/M).** Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr).

**e. Column (5)-Quantity required (Qty rqr).** Indicates the quantity of the item authorized to be used with/on the equipment.

## **Section II. COMPONENTS OF END ITEM**

**Not applicable.**

# APPENDIX C

## ADDITIONAL AUTHORIZATION LIST

---

### Section I. INTRODUCTION

#### **C-1. SCOPE.**

This appendix lists additional items you are authorized for the support of the M85 machine gun.

#### **C-2. GENERAL.**

This list identifies items that do not have to accompany the M85 machine gun and that do not have to be turned in with it. These items are authorized to you by CTA, MTOE, TDA, or JTA.

#### **C-3. EXPLANATION OF LISTING.**

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment.

## Section II. ADDITIONAL AUTHORIZATION LIST

| (1)<br><br>NATIONAL<br>STOCK<br>NUMBER | (2)<br><br>DESCRIPTION<br><br>FSCM & PART NUMBER             | (3)<br><br>USABLE<br>ON<br>CODE<br><br>U/M | (4)<br><br>QTY<br>AUTH |
|--|--|--|------------------------|
| 8105-00-921-5821                       | BAG, ORDNANCE WEAPONS<br>SPARE<br>(19204) 11686430           | EA   | 1                      |
| 1005-00-770-4590                       | BOX, SPARE PARTS<br>(19205) 7790799                          | EA   | 1                      |
| 8020-00-244-0153                       | BRUSH, ARTISTS<br>(81348) H-B-241                            | EA   | 1                      |
| 1005-00-350-4100                       | BRUSH, CLEANING,<br>SMALL ARMS (RECEIVER)<br>(19204) 8448466 | EA   | 1                      |



| (1)<br><br>NATIONAL<br>STOCK<br>NUMBER | (2)<br><br>DESCRIPTION<br><br>FSCM & PART NUMBER            | (3)<br><br>USABLE<br>ON<br>CODE<br><br>U/M | (4)<br><br>QTY<br>AUTH |
|--|---|--|------------------------|
| 1005-00-550-4037                       | BRUSH, CLEANING,<br>SMALL ARMS (BORE)<br>(19204) 5504037    | EA   | 1                      |
| 1005-00-766-0915                       | BRUSH, CLEANING,<br>SMALL ARMS (CHAMBER)<br>(19204) 7790737 | EA   | 1                      |
| 7920-00-205-2401                       | BRUSH, CLEANING, TOOL<br>(81349) MIL-S-43871                | EA   | 1                      |
| 1005-00-779-6026                       | COVER ASSEMBLY<br>(19207) 10870713                          | EA   | 1                      |

## ADDITIONAL AUTHORIZATION LIST (cont)

| (1)                         | (2)   |                      | (3) | (4)         |
|-----------------------------|---|----------------------|-----|-------------|
| NATIONAL<br>STOCK<br>NUMBER | DESCRIPTION<br><br>FSCM & PART NUMBER                                 | USABLE<br>ON<br>CODE | U/M | QTY<br>AUTH |
| 1005-00-653-5441            | ROD, CLEANING,<br>SMALL ARMS:<br>(5 sections)<br>(19204) 6535441      |                      | EA  | 1           |
| 1005-00-614-7409            | SWAB HOLDER SECTION,<br>SMALL ARMS CLEANING<br>ROD<br>(19204) 6147409 |                      | EA  | 1           |

# APPENDIX D

## EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

---

### Section I. INTRODUCTION

#### D-1. SCOPE.

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the M85 machine gun. 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.

#### D-2. EXPLANATION OF COLUMNS.

**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 cleaning compound, item 5, app D.").

**b. Column (2)-Level.** This column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew

## D-2. EXPLANATION OF COLUMNS. (cont)

**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 Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

**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 SUPPLIES AND MATERIALS LIST

| (1)<br>ITEM<br>NUM-<br>BER | (2)<br>LEVEL | (3)<br>NATIONAL<br>STOCK<br>NUMBER | (4)<br>DESCRIPTION   | (5)<br>U/M |
|----------------------------|--------------|------------------------------------|--|------------|
| 1                          | C            | 9150-01-079-6124                   | CLEANER, LUBRICANT AND<br>PRESERVATIVE<br>4-oz (118.30-ml) btl<br>(81349) MIL-L-63460                        |            |
| 2                          | C            | 7920-00-205-1711                   | RAG, WIPING (COTTON):<br>50-lb (22.68-kg)<br>(58536) A-A-351   |            |
| 3                          | C            | 1005-00-288-3565                   | SWAB, SMALL ARMS<br>CLEANING (COTTON):<br>2-1/2-in. (6.35-cm)<br>square, 1000 unit<br>qty<br>(19204) 5019316 |            |

By Order of the Secretary of the Army:

Official:

JOHN A. WICKHAM. JR.  
*General, United States Army*  
*Chief of Staff*

ROBERT M. JOYCE  
*Major General, United States Army*  
*The Adjutant General*

Distribution: To be distributed in accordance with DA Form 12-40, Operator and Crew Maintenance, requirement for Gun, Machine, Caliber .50, M85 (Tank).



W 9107-0000  
CUNY CA 0000

PIN : 026389-000



This fine document...

Was brought to you by me:



## [Liberated Manuals -- free army and government manuals](#)

Why do I do it? I am tired of sleazy CD-ROM sellers, who take publicly available information, slap “watermarks” and other junk on it, and sell it. Those masters of search engine manipulation make sure that their sites that sell free information, come up first in search engines. They did not create it... They did not even scan it... Why should they get your money? Why are not letting you give those free manuals to your friends?

I am setting this document FREE. This document was made by the US Government and is NOT protected by Copyright. Feel free to share, republish, sell and so on.

I am not asking you for donations, fees or handouts. If you can, please provide a link to [liberatedmanuals.com](http://liberatedmanuals.com), so that free manuals come up first in search engines:

<A HREF=<http://www.liberatedmanuals.com/>>Free Military and Government Manuals</A>

– Sincerely  
Igor Chudov  
<http://igor.chudov.com/>