DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS

(INCLUDING DEPOT MAINTENANCE

REPAIR PARTS AND SPECIAL TOOLS)

RIFLE, 7.62-MM, M14, W/E

(1005- 589-1271)

RIFLE, 7.62-MM, M14A1, W/E

(1005-072- 5011)

BIPOD, RIFLE, M2

(1005-711-6202)

HEADQUARTERS, DEPARTMENT OF THE ARMY

AUGUST 1972

WARNING

Clear weapon of ammunition before starting an inspection. Point weapon in a safe direction and examine for presence of live ammunition. Check barrel and chamber for obstruction, e.g., bullet or ruptured cartridge case.

WARNING

Personnel operating vapor degreaser are cautioned not to breathe the toxic fume.

WARNING

Drycleaning solvents and paint thinners are flammable. Do not clean parts near an open flame or in a smoking area. Fire extinguishers should be readily available when these materials are used. Use only in well-ventilated places.

WARNING

Dry cleaning solvents and paint thinners evaporate quickly and have a drying effect on the skin. When used without protective gloves, these chemicals may cause irritation or cracking of the skin. Use a lanolin base cream or liquid on exposed skin.

WARNING

Under no circumstances should a blank cartridge be modified by adding explosives in an attempt to obtain automatic action without the blank firing attachment. The loading of any cartridge with excess explosives is most likely to cause abnormal chamber pressure. The resulting abnormal chamber pressure may cause equipment damage and/or injury to the operator.

TECHNICAL MANUAL
NO. 9-1005-223-34

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C. *2 August 1972*

DIRECT SUPPORT AND GENERAL SUPPORT

MAINTENANCE MANUAL

INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

(INCLUDING DEPOT MAINTENANCE

REPAIR PARTS AND SPECIAL TOOLS)

RIFLE, 7.62-MM: M14, W/E

RIFLE, 7.62-MM: M14A1, W/E

BIPOD, RIFLE: M2

This manual is current as of 27 June 1971

*** This manual supersedes TM 9-1005-223-35, 1 July 1968 including changes.**

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

These instructions are in accordance with the maintenance allocation chart (TM 9-1005-223-20) and are published for the use of direct support and general support personnel maintaining the 7.62-MM Rifle. M14, M14A1 and Rifle Bipod, M2. They provide information on the maintenance of the equipment, which is beyond the scope of the tools,/equipment, personnel, or supplies normally available to operator and for organizational maintenance.

1-2. Forms and Records

Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

1-3. Reporting of Errors

Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to Publications, and forwarded direct to: Commanding General, US Army Weapons Command, ATTN: AMSWE-MAS/SP, Rock Island, Illinois 61201.

Section II. DESCRIPTION AND DATA

1-4. Description.

Refer to TM 9-1005-223-10 and TM 9-1005-223-20 and figures 1-1 and 1-2.

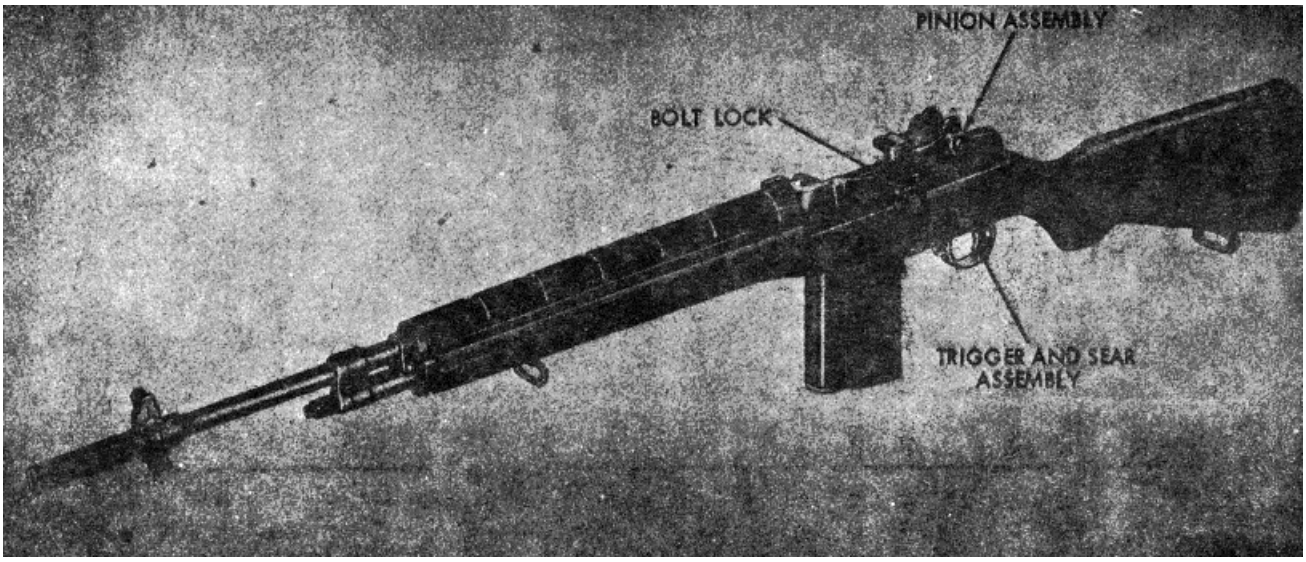

Figure 1-1. 7.62-MM Rifle. M14-left view.

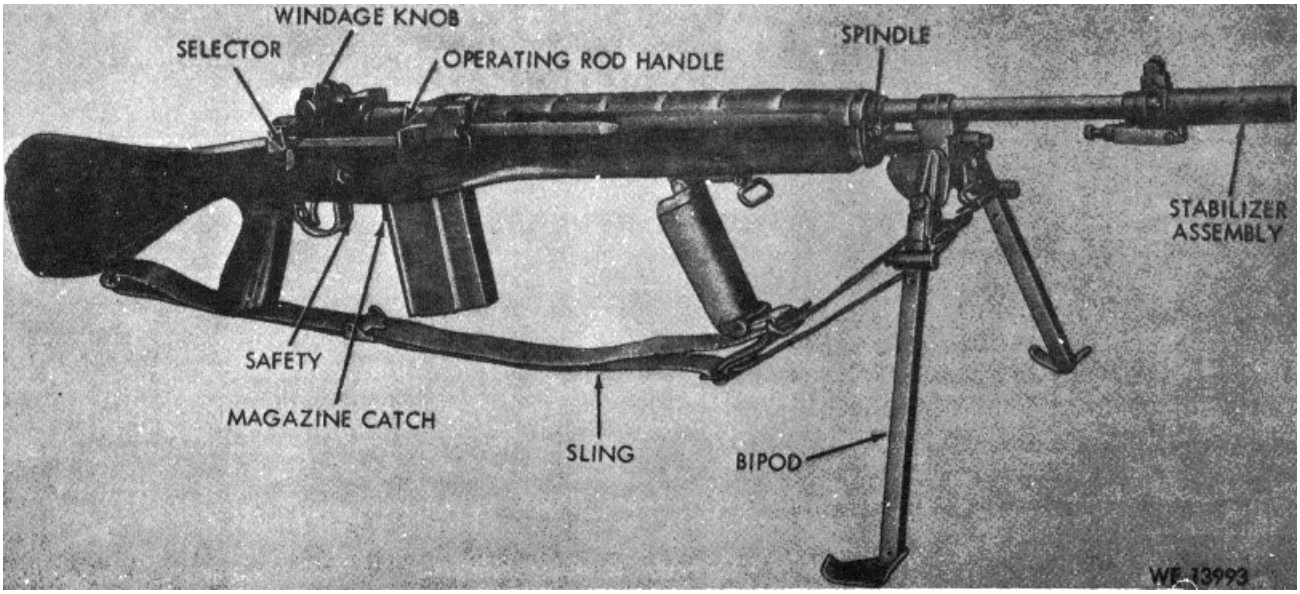

Figure 1-2. 7.62-MM Rifle, M14A1-right view.

1-5. Tabulated Data

Refer to TM 9-1005-223-20.

CHAPTER 2
DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT

2-1. Repair Parts, Special Tools, and Equipment

Refer to appendix B.

Section II. TROUBLESHOOTING

2-2. General

This section contains troubleshooting information for locating and correcting malfunctions which may develop in the 7.62-MM Rifle, M14 and M14A1.

2-3. Troubleshooting

a. Table 2-1 is intended as a guide for troubleshooting. The table does not cover all possible malfunctions that may occur. Only the more common malfunctions are listed.

b. Also refer to the troubleshooting tables in TM 9-1005-223-10 and TM 9-4005-223-20.

Table 2-1. Troubleshooting

Malfunction	Probable Cause	Corrective Action
	RIFLE M14 AND M14A1	
1. Magazine difficult to install.	Damage or restricted movement of magazine latch.	Replace magazine latch.
2. Short recoil	a. Under sized or damaged gas piston.	a. Replace
	b. Gas cylinder oversize.	b. Replace
	c. Operating rod bent	c. Replace.
	d. Damaged operating rod guide.	d. Replace.
	e. Bolt binding receiver.	e. Clean or repair bolt and/or receiver.
	f. Restricted movement of operating rod.	f. Repair or replace defective component
	g. Cartridge clip guide pin restricting bolt movement	g. Drive pin up from receiver
3. Bolt fails to close	a. Extractor does not open enough to pass over rim of cartridge.	a. Replace extractor and/or extractor spring
	b. Operating rod binding	b. Replace
	c. Weak or broken operating rod Spring.	c. Replace.
	d. Damaged or blocked ejector	d. Replace
	e. Damaged or deformed bolt.	e. Repair or replace bolt assembly
	f. Insufficient headspace.	f. Replace bolt
4. Failure to feed	a. Short recoil	a. See “Short recoil".
	b. Gas cylinder. gas port not aligned with gas port of barrel.	b. Tighten gas cylinder lock.
5. Failure to extract	a. Excessive headspace.	a. Replace weapon
	b. Pitted chamber	b. Replace weapon
	c. Broken extractor.	c. Replace extractor
	d. Defective ammunition.	d. Use cleaning rod to remove cartridge. Clean chamber and ammunition.
	e. Restricted movement of operating rod.	e. Rep air or replace defective components.

Table 2-1. Troubleshooting-Continued

Malfunction	Probable Cause	Corrective Acton
6. Failure to eject	a. Weak, missing, or frozen ejector spring.	a. Replace ejector.
	b. Damaged or blocked ejector.	b. Replace ejector.
	c. Restricted movement of operating rod.	c. Repair or replace component.
7. Failure of bolt to open after fire	a. Gas cylinder plug missing, gas piston seized or improperly installed in cylinder.	a. Install gas cylinder plug. Repair or install gas piston properly.
	b. Restricted movement of operating rod.	b. Repair or replace components.
8. Failure to fire	a. Lower tang on hammer strikes stud on trigger.	a. Install hammer properly.
	b. Inadequate firing pin protrusion.	b. Replace firing pin.
	c. Hammer spring housing damaged.	c. Replace.
9. Failure to hold bolt rearward	a. Damaged or deformed bolt lock.	a. Repair or replace.
	b. Bolt lock movement restricted.	b. Replace spring.
	c. Short recoil.	c. See "Short recoil".
10. Bipod fails to stay on rifle	a. Jaw, securing bolt, loose.	a. Align and tighten.
	b. Jaw securing bolt. stripped.	b. Replace defective components.
11. Legs fall to stay in up or down position	c. Plunger worn or spring damaged.	
	a. Replace	a. Replace.
	b. Yoke does not retain plunger in position.	b. Replace.
12. Leg difficult to extend or retract	a. Plunger worn or spring damaged.	a. Replace spring plunger.
	b. Leg damaged.	b. Repair or replace.

Section III. PREEMBARKATION INSPECTION OF MATERIEL IN UNITS ALERTED FOR OVERSEAS MOVEMENT

2-4. General

a. *Inspection Data.* In addition to inspection data included under this section, refer to TB 9-1000-247-35 for general inspection criteria for preembarkation inspection for overseas shipment.

WARNING

Clear weapon of ammunition before starting an inspection. Point weapon in a safe direction and examine for presence of live ammunition. Check barrel and chamber for obstruction, e.g., bullet or ruptured cartridge case.

The equipment must be thoroughly cleaned of greasy foulings, dirt, and other foreign particles that might interfere with normal operation.

b. *Inspection of Parts.*

(1) Check screw heads and threads for visual damage.

(2) Check to see that the materiel is free of burs. particularly on moving surfaces.

(3) Check parts for bends, cracks, breaks, distortion and mutilation. Parts must not show visual indications of excessive wear.

(4) Check springs for weakness, breaks, or deformity.

(5) Check lock and safety devices for good operation.

(6) Check weapon for missing parts, proper assembly and operation.

(7) Plungers, latches, swivels, catches and similar parts must be checked for operation. These components must be properly assembled to the major item and not be subjected to loss.

(8) Check the bayonet and bipod for overall general appearance, fit and positive retention on rifle. Check also for missing parts and other visual dam age.

(9) Check to see that the exterior of weapon is free of rust, dents, cracks, dryness and other objectionable defects.

(10) Check sight mechanism for proper installation, functioning and visual damage.

(11) Inspect firing pin tang and striker for good general appearance and condition. Check firing pin protrusion. It must not exceed 0.060 inch when firing pin is in the fired position.

(12) Inspect barrel for pitting, scoring, ring wear and stripping of lands.

(13) Check trigger pull with trigger pull measuring fixture. When using the 4-1/2 pound Height. the trigger pull should not release the hammer. When using the 7-1/2 pound weight, the trigger should release the hammer (fig 2-1). Repair any weapon that fails to pass the trigger pull test. (See chapter 4)

Figure 2-1. Trigger pull testing

(a) Trigger pull too light. This condition is caused by worn lugs on the trigger or worn hooks on the hammer spring. Examine components for wear or damage and, if necessary, replace with new parts.

(b) Trigger pull excessive. This condition is caused by:

1. Burs or irregular machined grooves on lugs of trigger or sear.

2. Defective hammer spring.

3. Obstruction or foreign material in the hammer spring housing that prevents proper seating of the hammer spring.

4. A damaged hammer spring plunger restricting movement of the hammer spring. Examine parts for defects. Remove burs with fine stone. Replace defective parts.

c. *Creep in Trigger.* This condition is caused by slightly rough contacting surfaces of the trigger lug or sear. Rough surfaces may be removed with a fine stone. Stone to a polish only. Make certain to maintain proper level and angularity.

Section IV. GENERAL MAINTENANCE

2-5. General

a. Information and instructions/contained herein are provided for personnel Performing direct support and general support maintenance on the materiel. Refer to TM 9-1005-223-20 for data on maintenance supplies and materials.

b. In subsequent chapters of this manual, the main assemblies(groups) of the rifle are disassembled, inspected, cleaned, replaced or repaired and assembled. Refer to pertinent chapters of this manual for removal/installation of components. The illustrations in this manual are numbered in the sequence of disassembly. When assembling, the reverse order of disassembly will be followed, unless otherwise instructed. Subsequent reference to components being worn and requiring replacement is intended to mean that only those items or mechanisms worn to a degree that normal functioning is affected will be replaced.

2-6. Repair Methods

NOTE

The words assemblies, sub-assemblies, and/or group are used interchangeably.

a. *Disassembly and Assembly Procedures.*

(1) In disassembling equipment, remove the major subassemblies and assemblies whenever possible. Subassemblies may then be disassembled, as necessary, into individual parts.

(2) During assembly, subassemblies should be assembled first and then installed to form a complete unit.

(3) Complete disassembly of a unit is not always necessary in order to make a required repair or replacement. Experience and good judgment should be used to minimize disassembly and assembly.

b. *Replacement of Parts.*

(1) When assembling a unit, replace all damaged pins, screws. bolts, washers, and nuts.

(2) Springs should be replaced when damaged or fail to function properly.

(3) If a required new part is not available, reconditioning of the repairable old part is required. However, after reconditioning a part it should be examined carefully to determine its serviceability.

c. *Use of Tools*. Exercise care to use tools that are suitable for a repair job in order to prevent damage to parts and tools.

d. *Finish of Metals.*

(1) Painted surfaces of the rifle, if chipped or cracked, may be repainted. Refer to TM 9-213.

(2) A class A or class B phosphate finish will be used on ferrous metal unless otherwise specified.

(3) It will not be necessary to refinish parts that already have a good quality finish.

(4) All parts will be free from rust, fungus, and corrosion.

e. *Repair of Damaged Machined and Polished Surfaces.*

(1) Smooth rough spots, scores, burs, galling, and gouges from damaged machined and polished surfaces so that each part will efficiently perform its normal function.

(2) The finish of each repaired part is to approximate that of the original finish. In performing any of these operations, critical dimensions must not be altered.

f. *Removal of Rust or Corrosion.* Remove oxidation with a cloth moistened with cleaning solvent (SD) or rifle bore cleaning compound (RBC). If this method fails, use crocus cloth or fine abrasive cloth. Vapor blast or sand blast equipment may also be used. In performing any of these operations, critical dimensions must not be altered.

2-7. Cleaning

a. *General.* Refer to paragraphs b through d, below.

b. *Cleaning of Material Received from Storage.*

(1) Material received in maintenance shops from storage will be cleaned by one of the methods described in (a) through (c) whichever is applicable or available.

CAUTION

Degreasing compound and degreasing temperatures can damage rubber and plastic parts. Do not attempt to degrease rubber or plastic parts which do not require degreasing.

(a) Dip-tank method. Disassemble parts and place them in a perforated metal basket. Submerge and agitate parts in a tank containing dry cleaning solvent or mineral spirits paint thinner. Repeat, using a second tank with dry cleaning solvent or paint thinner. The extent of treatment in each tank will depend on ease with which the preservatives are dissolved.

(b) Vapor-degreaser method. Tanks containing a heated solution of trichlorethylene or perchlorethylene (type II) are used mostly for degreasing items that are very greasy or oily and are not rapidly cleaned by the dip-tank method. Place parts in a perforated metal basket and submerge just below the vapor in the tank. Keep parts there until all greasy substance melts and runs off parts in the basket.

WARNING

Personnel operating vapor degreaser are cautioned not to breathe the toxic fume.

(c) Steam method. Place parts in a perforated metal basket and steam treat until clean. This method is less efficient than the vapor-degreaser method. Therefore, it may require additional cleaning of parts to remove all traces of greasy substance, particularly from recesses.

1. If sometime is to elapse before the start of repair operations, apply a light grade of preservative oil to all polished metal surfaces to prevent the formation of rust.

2. Remove all rust spots from highly finished surfaces with a light application of crocus cloth. Use grade 2/0 abrasive cloth on ordinary machined finished surfaces.

(d) Cleaning after repair.

1. After repair operations and prior to assembly, remove shop dirt and other foreign matter from all metal surfaces. This can be done by the dip-tank method, the vapor-degreaser method, or by cleaning with cloths soaked in dry-cleaning solvent or rifle bore cleaning compound.

2. In the dip-tank method, agitation for approximately one minute in each tank is sufficient. In the vapor-degreaser method, treatment for about two-to-three minutes is sufficient.

(e) Cleaning after shop inspection. Dip parts in a tank containing dry cleaning solvent. Remove parts and dry thoroughly with a clean cloth. Then apply a light coat of general purpose lubricating oil (PL special).

2-8. Cleaning and Preservation

Refer to TM 9-247.

Section V. REMOVAL AND INSTALLATION OF MAJOR COMPONENTS AND AUXILIARIES

2-9. Removal

Refer to pertinent chapters in this manual and TM 9-1005-223-20.

2-10. Installation

a. Refer to pertinent chapters in this manual and TM 9-1005-223-20.

b. During repair operations, when cleaning parts or components with dry cleaning solvents or mineral spirits paint thinner, observe the following safety precautions.

WARNING

Dry cleaning solvents and paint thinners are flammable. Do not clean parts near an open flame or in a smoking area. Fire extinguishers should he readily available when these materials are used. Use only in well-ventilated places.

WARNING

Dry cleaning solvents and paint thinners evaporate quickly and have a drying effect on the skin. When used without protective gloves, these chemicals may cause irritation or cracking of the skin. Use a lanolin base cream or liquid on exposed skin.

CAUTION

Do not permit rubber gaskets or other types of synthetically fabricated components to come in contact with solvents or paint thinners.

CHAPTER 3

REPAIR OF MAGAZINE ASSEMBLY

Section I. DISASSEMBLY AND ASSEMBLY

3-1. General

This chapter contains disassembly, assembly, cleaning, inspection and repair instructions for the magazine assembly.

3-2. Description

The magazine assembly consists of a tube, spring, base, follower and stop assembly. The magazine holds 20 rounds of 7.62-mm ammunition.

3-3. General Repair Instructions

Refer to paragraphs 2-5 through 2-8.

3-4. Disassembly and Assembly

Refer to figure 3-1.

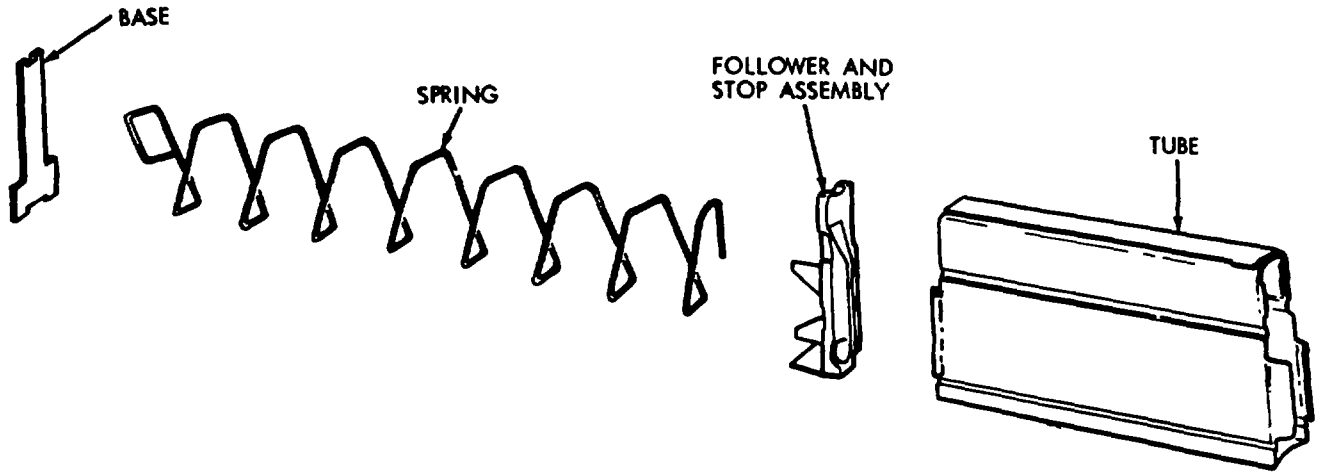

Figure 3-1. Magazine exploded view.

Section II. CLEANING, INSPECTION AND REPAIR

3-5. Cleaning

Refer to paragraph 2-7.

3-6. Inspection

a. Inspect tube, base, follower and stop assembly for burs, bends, nicks and dents.

b. Inspect the spring for burs, rust, breaks and distortion.

3-7. Repair

Repair consists of replacing damaged or missing parts.

CHAPTER 4

REPAIR OF THE FIRING MECHANISM

REPAIR OF STOCK AND HAND GUARD ASSEMBLIES

Section I. DISASSEMBLY AND ASSEMBLY

4-1. General

This chapter contains disassembly, assembly, cleaning, inspection and repair instructions for the firing mechanism.

4-2. Description

The firing mechanism consists primarily of a hammer. hammer spring housing, hammer spring, trigger and sear assembly, guard assembly, safety, safety spring, trigger and latch housing assembly, magazine latch, spring and pin. The firing mechanism initiates firing or causes the weapon to cycle.

4-3. General Repair Instructions

Refer to paragraphs 2-5 through 2-8.

4-4. Disassembly/Assembly

Refer to figure 3.

Section II. CLEANING, INSPECTION AND REPAIR

4-5. Cleaning

Refer to paragraph 2-7.

4-6. Inspection

a. *Hammer.* Inspect hammer for burs, hole wear, chips, or cracks. Check hammer for sharp corners and smooth surfaces where contact is made with trigger lugs and sear.

b. *Hammer Spring*. Check spring for breaks, burs, weakness or mutilation.

c. *Trigger and Sear Assembly*. Check trigger and sear assembly for wear and for other visual damage. Check sear pin to make sure that it holds mating parts snugly.

d. *Guard Assembly*. Check guard assembly for burs. bends. cracks or mutilation. Check to make sure that it does not interfere with trigger movement and locking action.

e. *Safety.* Check safety for burs, cracks or mutilation. Check for binding action and excess play.

f. *Safety Spring.* Check spring for breaks, burs, and distortion.

g. *Trigger Housing*. Check trigger housing for rust, corrosion, hole wear, cracks, and for other visual damage.

h. Machine Latch, Spring and Pin. Check pins for burs or mutilation.

i. *Latch.* Inspect latch for wear, missing parts and for other visual damage. Check to make sure that the latch makes positive contact with locking plate. welded on top rear of magazine. Check to make sure that latch exhibits acceptable locking action.

4-7. Repair

a. Repair consists of replacing damaged, missing parts. or the complete firing mechanism.

b. Check trigger pull with trigger pull measuring fixture fig 2-1). When using the 4-1/2 lb weights (min) the trigger should not release the hammer. When using the 7-1/2 lb weights, the trigger should release the hammer.

CHAPTER 5

REPAIR OF STOCK AND HAND GUARD ASSEMBLIES

Section I. DISASSEMBLY AND ASSEMBLY

5-1. General

This chapter contains disassembly, assembly, cleaning. inspection and repair instructions for the stock and hand guard assemblies.

5-2. Description

The stock and hand guard assemblies serve as a housing for the barrel and receiver group.

5-3. General Repair Instructions

Refer to TM 9-1005-301-30.

5-4. Disassembly/Assembly

Refer to figures 4 and 5.

Section II. CLEANING, INSPECTION AND REPAIR

5-5. Cleaning

Refer to TM 9-1005-223-20.

5-6. Inspection

Inspect stock and hand guard assemblies for cracks, deep scratches, and for other visual damage. Check fit of action in stock. Check butt plate 1M14 Rifle) for rust, burs, and for other visual damage. Check the cushioned butt plate (M14A1 Rifle) for mutilation, wear, decomposition, and for other visual damage. Check to make sure that screws are in place and firmly holding components together.

5-7. Repair

Repairable stock and hand guard assemblies will be repaired in accordance with instructions contained in TM 9-1005-301-30.

CHAPTER 6

REPAIR OF THE OPERATING ROD AND CONNECTOR GROUP

Section I. DISASSEMBLY AND ASSEMBLY

6-1. General

This chapter contains disassembly, assembly, cleaning, inspection and repair instructions for the operating rod and connector group.

6-2. Description

The operating rod and connector group work in conjunction with the firing mechanism and bolt assembly. The group consists primarily of a connector assembly, plunger, rod, compression and operating rod springs, body, guide and pins. One end of the rod acts as a front latch for the magazine. During a firing cycle, the group moves to the rear and returns to the forward position, causing bolt activity to chamber ammunition for firing. The rapid rear-to-front movement of the group causes ejection of spent cartridge cases and chambering of a serviceable round of ammunition.

6-3. General Repair Instruction

Refer to paragraphs 2-5 through 2-8.

6-4. Disassembly/Assembly

Refer to figure 6.

Section II. CLEANING INSPECTION AND REPAIR

6-5. Cleaning

Refer to paragraph 2-7.

6-6. Inspection

a. Inspect connector assembly for cracks, breaks, bends, and missing parts. Check hold on rear of connector body to make certain it fits lug or sear release. Inspect front portion of body for engagement with connector lock.

b. Check operating rod guide for burs, cracks, and protective coating.

c. Inspect operating rod spring for breaks, tension, and for other visual damage.

d. Check operating rod and connector group for missing parts, such as plunger, spring and pin. Check apertures in connector and guide for wear, cracks, and for other visual damage.

6-7. Repair

Repair consists of replacing damaged, worn or missing parts. If necessary, remove burs from metal parts with a fine grain stone.