

FM 23-5

DEPARTMENT OF THE ARMY FIELD MANUAL

U.S. RIFLE
CALIBER .30, M1



HEADQUARTERS, DEPARTMENT OF THE ARMY
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HEADQUARTERS
DEPARTMENT OF THE ARMY
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	Paragraphs	Page
CHAPTER 1. INTRODUCTION.....	1- 4	3
2. MECHANICAL TRAINING.....	5-11	5
3. OPERATION AND FUNCTIONING.....	12-15	14
4. STOPPAGES AND IMMEDIATE ACTION.....	16-19	19
5. MAINTENANCE.....	20-24	20
6. AMMUNITION.....	25, 26	25
APPENDIX I. REFERENCES.....		26

*This manual supersedes FM 23-5, 26 September 1958, including C1, 22 June 1960.

CHAPTER 1

INTRODUCTION

1. Purpose and Scope

a. This manual is a guide for commanders and instructors in presenting instruction and training in the mechanical operation of the M1 rifle. It includes a detailed description of the rifle and its general characteristics; procedures for disassembly and assembly; methods of loading; an explanation of functioning; a discussion of stoppages and immediate action; a description of the ammunition; and instructions on the care and cleaning of both the weapon and ammunition. The material presented is applicable, without modification, to both nuclear and nonnuclear warfare.

b. Marksmanship training is covered in FM 23-71.

c. Users of this manual are encouraged to submit recommended changes or comments to improve the manual. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded direct to the Commandant, U.S. Army Infantry School, Fort Benning, Ga.

2. Importance of Mechanical Training

The rifle is the soldier's basic weapon. It gives him an individual and powerful capability for combat. To get the most out of his individual combat capability, the soldier must develop two skills to an equal degree: he must be able to fire his weapon well enough to get hits on battlefield targets, and he must know enough about its working parts to keep them operating smoothly so the rifle will not fail him. The soldier gets his firing skill on marksmanship training ranges and he learns how to keep his rifle in firing condition

from the mechanical training that is outlined in this manual.

3. Description of the Rifle

The U.S. rifle caliber .30, M1, (fig. 1) is an air-cooled, gas-operated, clip-fed, and semiautomatic shoulder weapon. This means that the air cools the barrel; that the power to cock the rifle and chamber the succeeding round comes from the expanding gas of the round fired previously; that it is loaded by inserting a metal clip (containing a maximum of eight rounds) into the receiver; and that the rifle fires one round each time the trigger is pulled.

4. General Data

Weight:

Complete with sling, eight-round clip and cleaning equipment (approximate) - 11¼ pounds.

Length:

Overall ----- 43 inches.

Sights:

Front ----- Fixed.
Rear ----- Adjustable. One click of elevation or windage moves the strike of the bullet .7 centimeters at 25 meters.

Trigger pull:

Minimum ----- 5½ pounds.

Maximum ----- 7½ pounds.

Ammunition ----- See chapter 6.

Muzzle velocity (approximately) - 853 meters (2,800 feet) per second.

Chamber pressure----- 50,000 pounds per square inch.

Maximum range----- 3,200 meters.

Maximum effective range¹----- 460 meters.

Maximum effective rate of fire² - 16 to 24 rounds per minute.

¹ Maximum effective range is the greatest distance at which a weapon may be expected to fire accurately to inflict casualties or damage.

² Although there is no prescribed maximum rate of fire, a trained rifeman can fire 16 to 24 aimed rounds per minute.

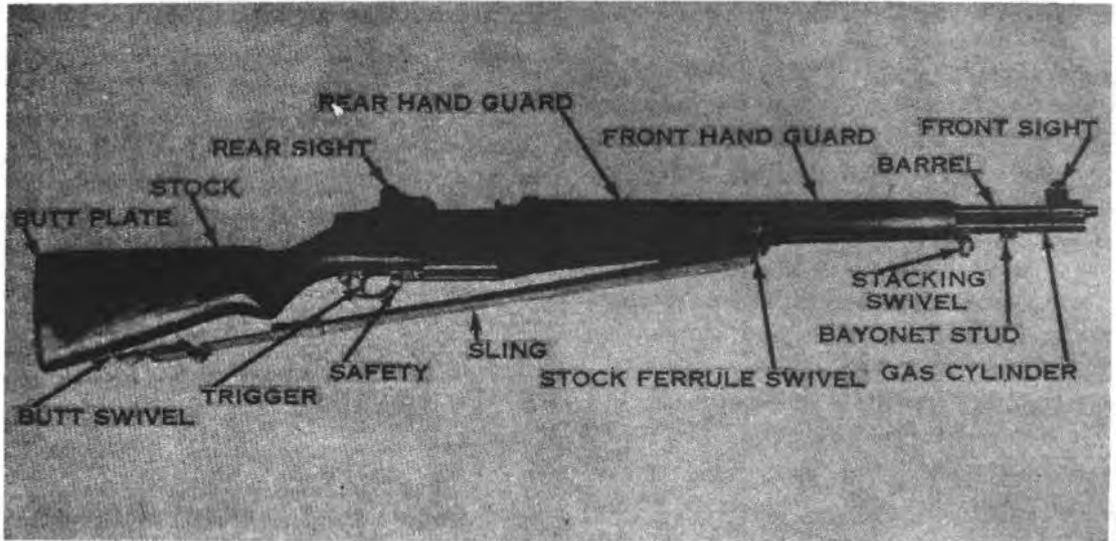


Figure 1. U.S. rifle, caliber .30, M1.

CHAPTER 2

MECHANICAL TRAINING

5. Disassembly and Assembly

a. The individual soldier is authorized to disassemble his rifle to the extent called *field stripping*. Table I, Disassembly Authorization (para. 7), shows the parts he is permitted to disassemble. This amount of disassembly is necessary for normal maintenance.

b. The rifle should be disassembled and assembled only when maintenance is required or for instructional purposes. Repeated disassembly and assembly causes excessive wear of parts and soon makes them unserviceable and reduces the accuracy of the weapon.

c. The rifle has been designed so that it may be taken apart and put together easily. No force is needed if it is disassembled and assembled correctly. The parts of one rifle, except the bolt, may be interchanged with those of another when necessary; for safety reasons, *bolts should* never be interchanged except by maintenance support personnel.

d. As the rifle is disassembled, the parts should be laid out on a clean surface, in the order of re-

moval, from left to right. This makes assembly easier because the parts are assembled in the reverse order of disassembly. The names of the rifle parts (nomenclature) should be taught along with disassembly and assembly to make future instruction on the rifle easier to understand.

6. Clearing the Rifle

The first step in handling any weapon is to clear it. If the rifle is loaded, unload it as described in paragraph 13. The M1 rifle is clear when there is no ammunition in the chamber or receiver, the bolt is locked to the rear, and the safety is engaged. To clear the rifle, pull the operating rod handle all the way to the rear, inspect the chamber and receiver to insure that no rounds are present and push the safety to its locked position (inside the trigger guard).

7. Disassembly Into the Three Main Groups

a. The three main groups are the trigger housing group, the barrel and receiver group, and the stock group (fig. 2).



Figure 2. The three main groups.

b. To disassemble the rifle into the three main groups, first insure that the weapon is clear and then allow the bolt to go forward by depressing the follower with the right thumb and allowing the bolt to ride forward over the follower assembly.

c. Place the rifle butt against the left thigh, sights to the left. With the thumb and forefinger of the right hand, pull downward and outward on the rear of the trigger guard. Swing the trigger guard out as far as it will go and lift out the trigger housing group (fig. 3).

d. To separate the barrel and receiver from the stock lay the weapon on a flat surface with the sights up, muzzle to the left. With the left hand, grasp the rear of the receiver and raise the rifle. With the right hand, give a downward blow, grasping the small of the stock. This will separate the stock group from the barrel and receiver group.

8. Disassembly of the Barrel and Receiver Group

a. Place the barrel and receiver group, with the bolt closed, on a flat surface with the sights down (insuring that the aperture is at its lowest position), muzzle pointing to the left. Holding the rear of the receiver with the right hand, grasp the follower rod with the thumb and forefinger of the left hand and disengage it from the follower arm by moving it toward the muzzle (fig. 4).

Remove the follower rod and operating rod spring by withdrawing them to the right. Do not separate these parts.

b. Using the tip of a dummy cartridge, remove the follower arm pin by pushing it from the far side of the receiver toward the body (fig. 5).



Figure 3. Removing the trigger housing group.

Table I. Disassembly Authorization

Groups and parts	Individual soldier	Armorer	Maintenance personnel only
SEPARATION: INTO THREE MAIN GROUPS.....	X.....		
DISASSEMBLY: BARREL AND RECEIVER GROUP.....	X.....		
Bolt assembly.....	Remove.....	Repair.....	Repair/Replace.
Gas cylinder.....	Remove.....	Repair.....	Repair/Replace.
Gas cylinder lock.....	Remove.....	Remove.....	Repair/Replace.
Clip latch.....		Repair.....	Repair/Replace.
Rear sight.....		Repair.....	Repair/Replace.
Slide from follower.....			Repair/Replace.
Accelerator from operating rod catch assembly.....			Repair/Replace.
Front sight.....			Repair/Replace.
TRIGGER HOUSING GROUP.....	Remove.....	Repair.....	Repair/Replace.

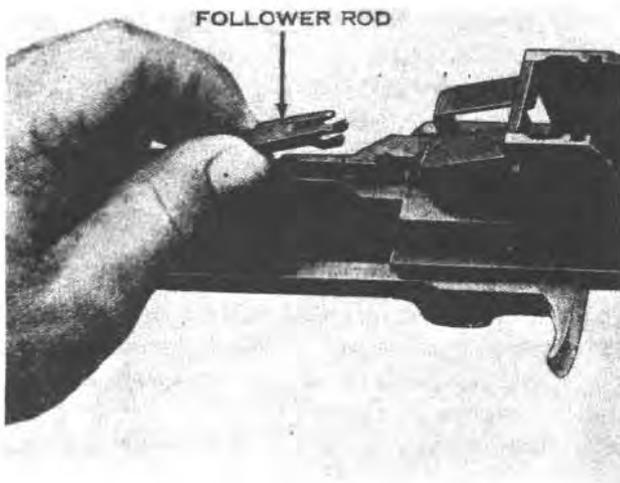


Figure 4. Removing the follower rod and operating rod spring.

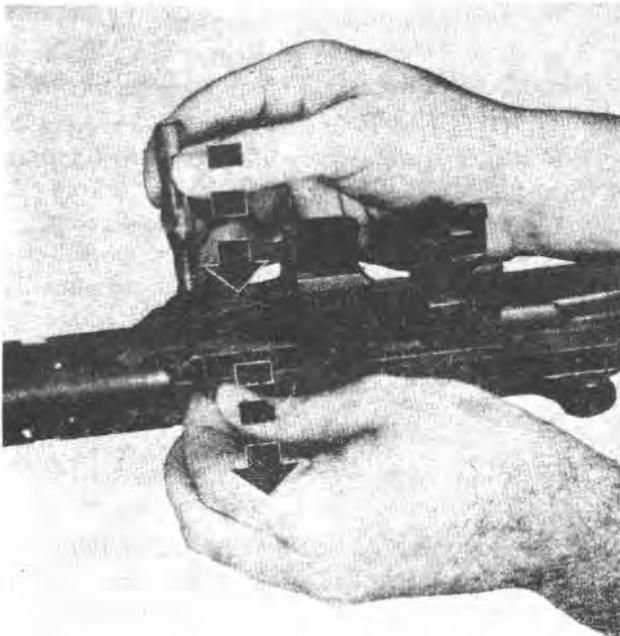


Figure 5. Removing the follower arm pin.

c. With the left hand, grasp the bullet guide, follower arm, and the operating rod catch assembly, and lift them out of the receiver together (fig. 6). Separate and arrange these parts from left to right in the following order: follower arm, operating rod catch assembly, and bullet guide.

d. Reach down into the receiver and lift out the follower assembly.

e. Turn the barrel and receiver group over so that the sights are up, muzzle pointing away from you. With the left hand, raise the rear of the receiver. With the right hand, pull the operating

rod to the rear until the rear of the handle is directly under the forward edge of the windage knob. With an upward and outward movement, disengage the guide lug of the operating rod through its dismount notch on the receiver. Remove the operating rod (fig. 7).

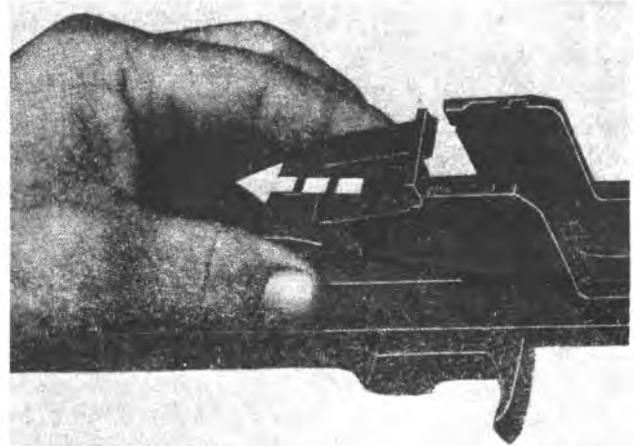


Figure 6. Removing the bullet guide, follower arm, and operating rod catch assembly.

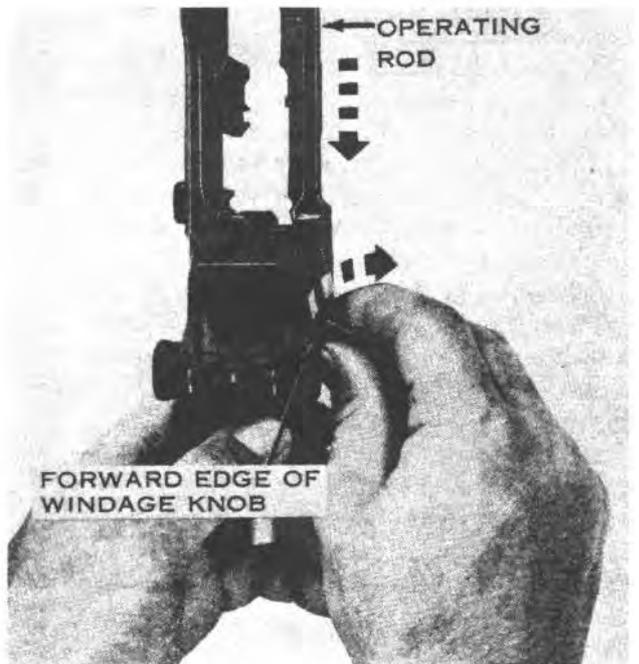


Figure 7. Removing the operating rod.

Caution: The operating rod is bent intentionally so that it will not bind against the enlarged portion of the barrel. Do not attempt to straighten it.

f. With the right hand, grasp the bolt by the operating lug and slide it fully to the rear; then slide it forward, lifting upward and outward to the right front with a slight rotating motion to remove it.

g. Using the screwdriver blade of the M10 cleaning rod handle as shown in figure 8, unscrew and remove the gas cylinder lock screw.

h. Unscrew and remove the gas cylinder lock. Loosen the gas cylinder by tapping lightly toward the muzzle on the bayonet stud with a piece of wood or similar soft object (fig. 9). Remove the gas cylinder, taking care not to burr or damage the splines. *Do not remove or attempt to adjust the front sight.*

i. Remove the front handguard by sliding it forward over the muzzle. *Do not attempt to remove the rear handguard.*

j. The parts of the barrel and receiver group in their order of disassembly are shown in figure 10.

9. Assembly of the Barrel and Receiver Group

a. Replace the front handguard by sliding it over the muzzle and insure that it is seated in the front band.

b. Place the gas cylinder over the barrel, making sure the splines are alined with their grooves. Push the gas cylinder down as far as it will go. If tapping is necessary, use a piece of wood on the bayonet stud. Engage the threads of the gas cylinder lock with those on the barrel and screw the lock on by hand until it is finger tight (do not use a tool). If the lock is not alined with the gas cylinder, do not force it, but *unscrew* it until it is alined. Replace and tighten the gas cylinder lock screw with the handle assembly of the M10 cleaning rod.

c. To replace the bolt, hold it by the operating lug and place the rear end of the bolt onto the bridge of the receiver. Rotate the bolt counterclockwise as far as necessary to permit the tang of the firing pin to clear the top of the bridge of the receiver. Guide the left locking lug of the bolt into its groove on the left side of the receiver.

Lower the right locking lug on its bearing surface and slide the bolt halfway to the rear.

d. To replace the operating rod, hold the handle with the right hand and place the piston end into the gas cylinder. Aline the operating rod so that the recess in the hump fits over the operating lug of the bolt. While applying pressure downward and inward on the handle, pull the operating rod to the rear until the guide lug is engaged in its groove (fig. 11). Move the operating rod forward until the bolt is closed.

e. Turn the barrel and receiver group over so that the sights are down and the muzzle is to the left. Replace the follower assembly so that its guide ribs fit into their grooves in the receiver. Make sure that the slide of the follower is down and that the square hole is to the rear (fig. 12). The slide will rest against the bolt.

f. Replace the bullet guide so that its shoulders fit into their slots in the receiver and the hole in the toe of the bullet guide is alined with the holes in the receiver (fig. 13).

g. With the right hand, lift up the lower part of the bullet guide slightly. With the left hand, insert the rear arm of the operating rod catch assembly through the clearance cut in the side of the bullet guide. Make sure that the rear arm is underneath the front stud of the clip latch which projects into the receiver (fig. 14). Lower the bullet guide into place. Test for correct assembly by pressing down on the front arms of the operating rod catch assembly. It should move and you should be able to feel the tension of the clip latch spring.

h. Replace the follower arm by passing its rear studs through the bullet guide and inserting them into the guide grooves on the follower (fig. 15). Allow the wings of the follower arm to rest astride the toe of the bullet guide. Aline the holes in the operating rod catch assembly, follower arm, and bullet guide with those in the receiver and replace the follower arm pin from the rear side.

i. Insert the loose end of the operating rod spring into the operating rod. Grasp the follower rod with the left hand, making sure that its hump is toward the barrel. Pull toward the muzzle, compressing the operating rod spring, and engage the claws of the follower rod with the front studs of the follower arm (fig. 16). You may have to raise the follower assembly to do this.



Figure 8. Removing the gas cylinder lock screw.