M1 Garand Operation and Maintenance Guide

for

Veteran and Civilian Service Organizations, Law Enforcement, and National Cemeteries

1 June 2013-Change 1

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1.0 Introduction

1.1 Purpose and Scope

Although the M1 Garand Rifle is no longer actively used by the U.S. Military, Public Law 106-65 (10 USC 4683) allows for the conditional donation by the U.S. Government of .30 Caliber M1 Garand Rifles to eligible organizations for use by those organizations in the rendering of funeral honors, for a member or former member of the U.S. Armed Forces, and for general ceremonial purposes. The M1 Garand, is currently the only ceremonial rifle being donated. The number of donated M1 Garand Rifles in possession by any eligible organization cannot exceed 15 (fifteen). Rifles in excess of 15 must be turned into the appropriate organization. The replacement or exchange of ceremonial rifles is authorized on a one for one basis if the ceremonial rifle becomes unserviceable. Ceremonial Rifles remain the property of the United States Government and cannot be loaned, sold or transferred.

This document should be used as a guide by these nonmilitary organizations, for the maintenance, operation, and general information relating to the M1 Garand Rifle. As with any firearm, if any operation of the M1 Garand Rifle seems questionable or out of the ordinary, bring the weapon to a competent professional for servicing.

The Corporation for the Promotion of Rifle Practice and Firearms Safety, Inc. (Civilian Marksmanship Program – (CMP)), is the organization designated by the U.S. Government with providing weapon support, including parts replacement information, and weapon maintenance training to law enforcement, civilian and veteran service organizations and national cemeteries that are furnished with M1 Garand Rifles. In addition, they assist with the reporting and onsite data collection for malfunctions. They can be contacted at: Civilian Marksmanship Program, 1401 Commerce Blvd., Anniston, AL 36207 Tel. 256-835-8455/Fax. 256-835-3527, www.thecmp.org.

In the event of an ammunition malfunction contact the US Army Joint Munitions Command (JMC):

Daniel R. Saito: Telephone: 309-782-6078
E-mail: Daniel.r.saito.civ@mail.mil

Bounkham L. Khounlo Telephone: 309-782-7194
E-mail: Bounkham.l.khounlo.civ@mail.mil

Mailing address:
US Army Joint Munitions Command, AMSJM-QAE
1 Rock Island Arsenal, Rock Island, IL 61299-6000

For comments, suggestions or questions concerning this guide contact the US Army Armament Research Development and Engineering Center

Telephone: 973-724-3056 Fax: 973-724-4633
E-mail: usarmy.pica.ardec.list.publication-change-notification@mail.mil

Mailing Address: US Army ARDEC
Picatinny Arsenal NJ 07806-5000, Attn: RDAR-EIL-LA

1.2 Importance of this guide

In order to minimize weapon failures and increase safety it is important for each operator to know the working parts and proper operation and maintenance of the weapon. Procedures other than those described herein should not be performed without consulting CMP.

WARNING: Severe weapon damage and/or injury may occur if the weapon is not maintained and operated properly.

1.3 General Description of the Rifle

The U.S. Rifle Caliber .30, M1, is an air cooled, gas operated, en-bloc clip-fed, semiautomatic shoulder fired weapon. This means that the air cools the barrel; that the power to cycle the action comes from gas pressure created by the firing of each round; that it is loaded by inserting a metal en-bloc clip into the receiver; and that the rifle fires one round each time the trigger is pulled.

2.0 Mechanical Training

2.1 Required Tools

1) T-grip flathead screwdriver (preferred) or regular flathead screwdriver.
2) 1/8 inch punch or similar object
3) 7/16 inch wrench or adjustable wrench
4) Wooden mallet

2.2 Disassembly and Assembly Overview

The rifle should be disassembled and assembled only when maintenance is required or for instructional purposes. Repeated disassembly and assembly causes excessive wear and tear of parts and increases the frequency of weapon failure/part replacement.

The rifle has been designed so that it may be taken apart and reassembled easily. The parts of one rifle, except the bolt, may be interchanged with those of another rifle when necessary; For safety reasons, bolts should never be interchanged except by designated representatives of CMP.

To make assembly easier, the parts should be laid out on a clean flat surface, in the order of removal, from left to right as the rifle is disassembled.

2.3 Unloading and Clearing the Rifle

The first step in handling any weapon is to unload and clear it. To unload a round from the chamber, support the rifle; with the right hand grasp the operating rod handle and pull the operating rod slowly to the rear. At the same time, place the left hand, palm down, over the receiver to catch the round as it is ejected.

To unload a clip, unload the round that is in the chamber as described above. When the operating rod reaches its rearmost position, hold it there. Place the palm of the left hand over the receiver and depress the clip latch (fig 1) with the left thumb, allowing the clip to be ejected up into the hand. Do not relax the rearward pressure on the operating rod handle until after the clip has been removed.

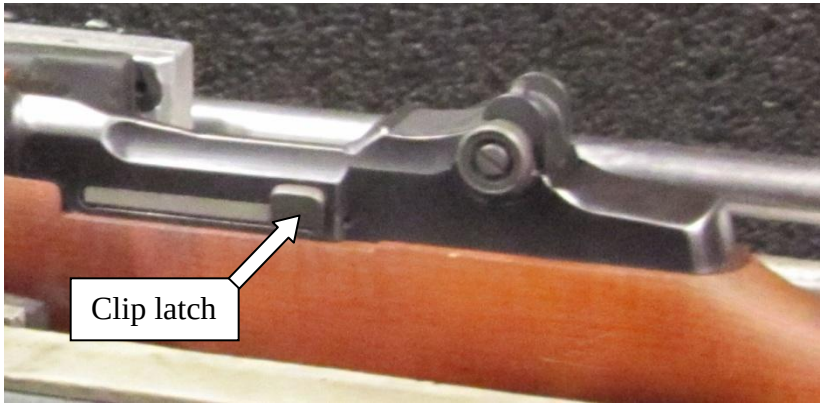

Figure 1. Clip latch

To clear the rifle, pull the operating rod handle all the way to the rear (ensure that the bolt is fully rearward and not caught on the bullet guide (fig 2 and 3), inspect the chamber and receiver to ensure that no rounds are present.

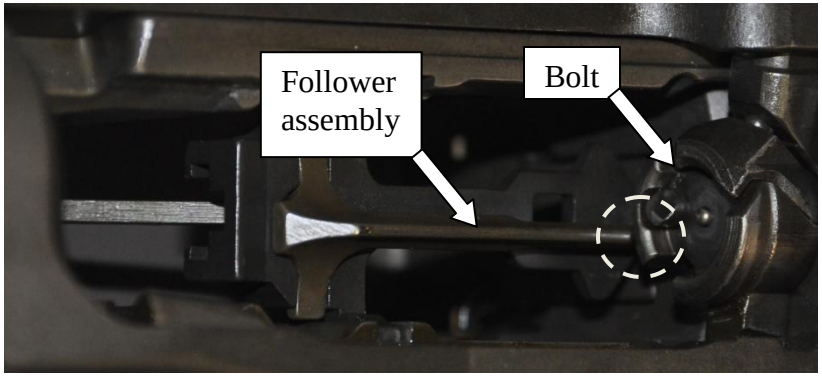

Figure 2. Bolt caught on bullet guide – INCORRECT

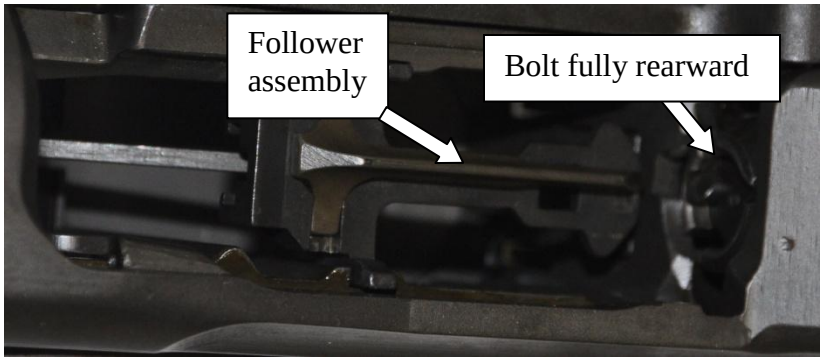

Figure 3. Bolt fully rearward – CORRECT

Push the safety rearward to its engaged position (inside the trigger guard) (fig 4 and 5).The M1 rifle is considered clear when there is no ammunition in the chamber or receiver, the bolt is locked to the rear, and the safety is engaged.

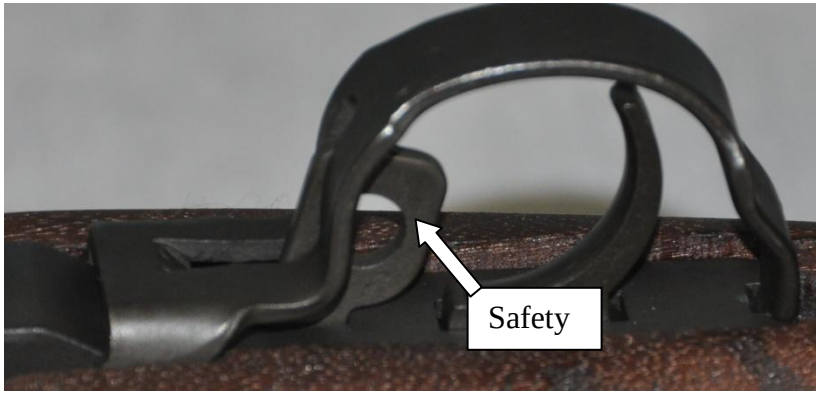

Figure 4. Safety is engaged

Figure 5. Safety is not engaged

WARNING – The bolt of the M1 rifle can slam shut unexpectedly if the shooter does not strictly followed these instructions. If your thumb or finger is in its path, a painful condition/injury called “M1 Thumb” is a strong possibility.

2.4 Disassembly into Three Main Groups

1) To disassemble the rifle into three main groups – trigger group, barrel and receiver group, and the stock group (fig 6) – first ensure that the weapon is clear (fig 7) and then allow the bolt to go forward by depressing the follower assembly (fig 8) and allowing the bolt to ride forward over the follower assembly (WARNING – see "M1 Thumb" above).

Figure 6. Trigger group, barrel and receiver group and stock group

Figure 7. Checking that weapon is clear

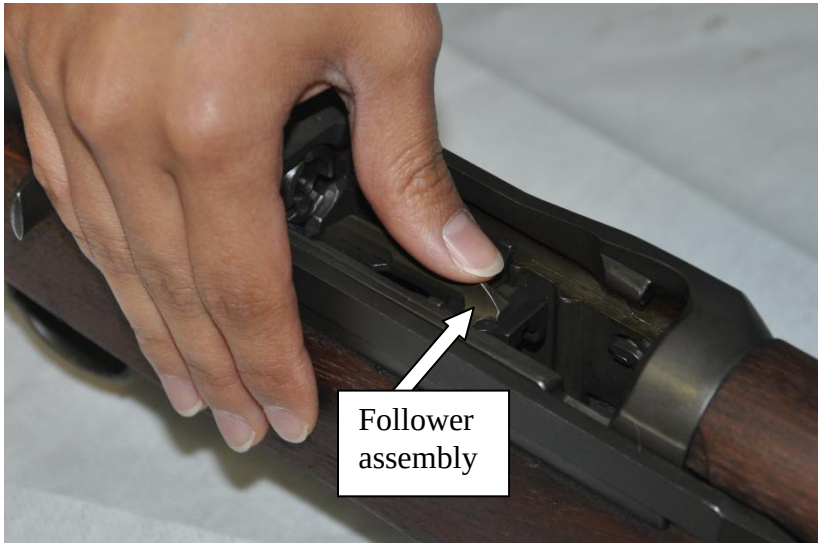

Figure 8. Depressing the follower assembly

2) Rotate the elevation knob so the rear sight is at its lowest position (fig 9). Invert the rifle and place it on a flat surface so that the trigger assembly is facing upward. While securing the rifle with one hand, pull rearward and upward on the trigger guard (fig 10 and 11). Lift straight up to remove the trigger housing assembly.

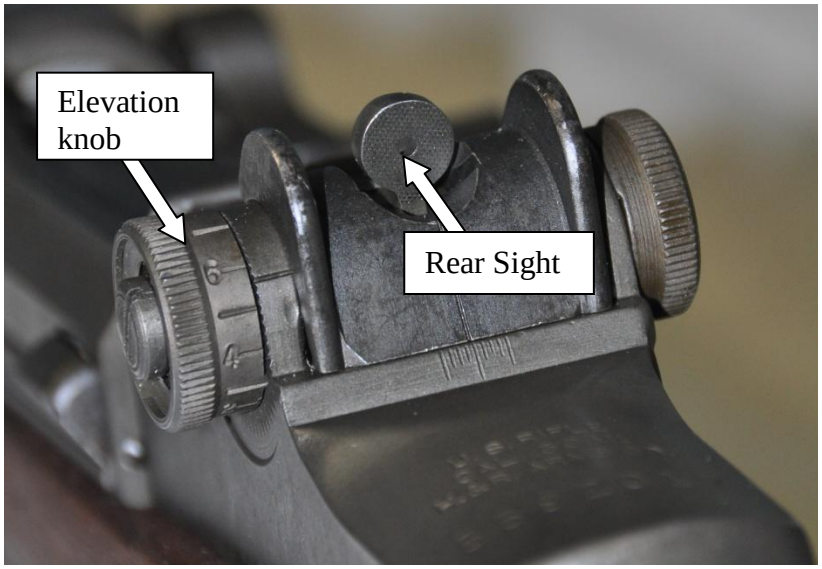

Figure 9. Elevation knob

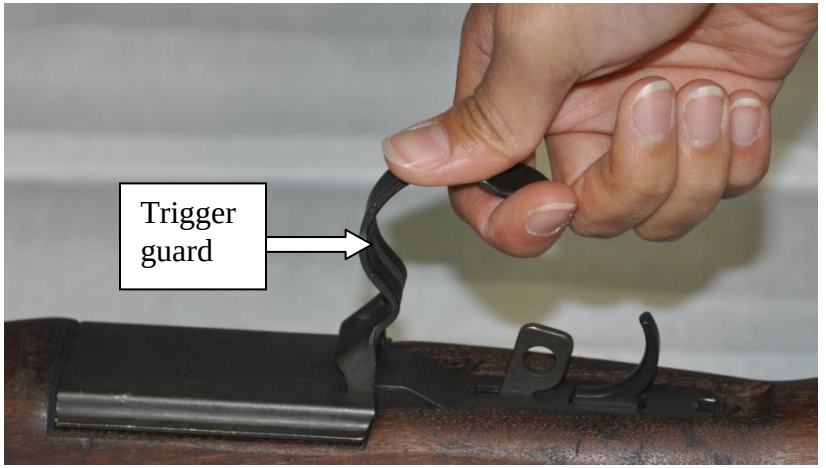

Figure 10. Trigger guard being pulled rearward and upward

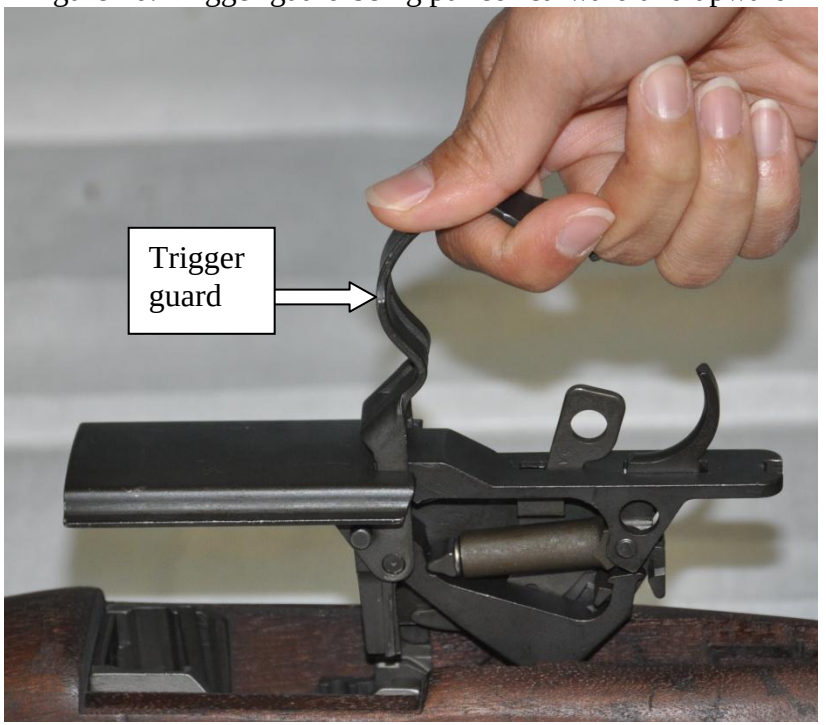

Figure 11 Trigger guard being pulled out of stock

3) Lift up on the stock to separate the stock from the barrel and receiver group. It may be necessary to slap the stock upward while holding the receiver (fig 12). Grasp the stock and rotate it up and off of the barrel and receiver group.

Figure 12. Stock up

2.5 Barrel and Receiver Group – Disassembly of the Operating Mechanism

1) With the sights facing down, place the barrel and receiver group on a flat surface. Hold the rear of the receiver then grasp the follower rod. Disengage the follower rod from the follower arm by moving it towards the muzzle (fig 13) then slowly allow the operating rod spring to extend in a controlled fashion (fig 14). You may need to push down on the follower assembly (shown in fig 13) to disengage the follower rod from the follower arm. Remove the follower rod and operating rod spring from the barrel and receiver group. Do not separate these parts.

   CAUTION: Maintain control of the follower rod/operating rod spring until completely removed.

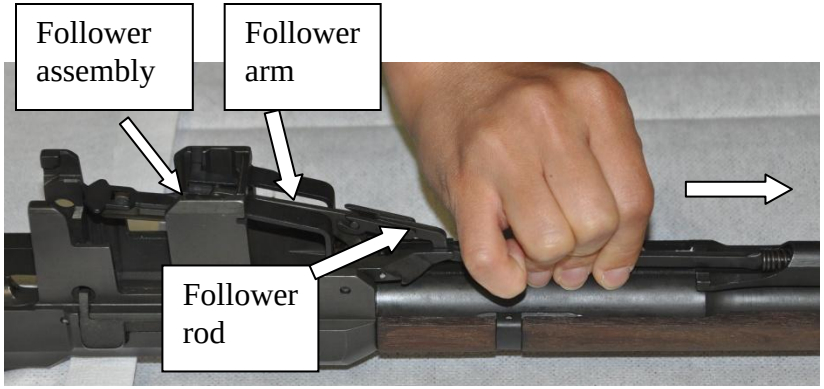

Figure 13. Follower rod being moved towards muzzle

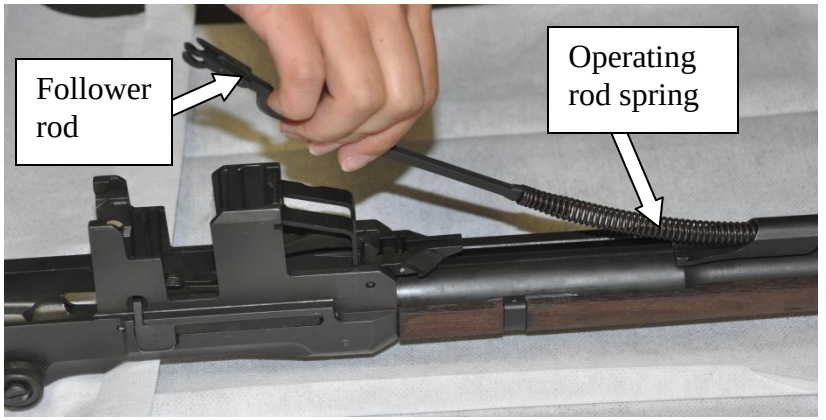

Figure 14. Extending operating rod spring in controlled fashion

2) Using a 1/8 inch punch, remove the follower arm pin by pushing on it from the small side of the pin (the left side of the rifle when it is upright and pointed downrange). The large end of the pin can then be grasped and fully removed (fig 15).

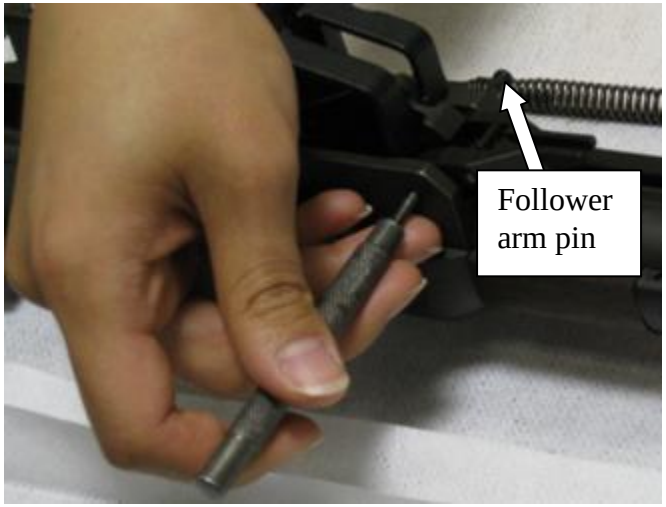

Figure 15. Removal of follower arm pin

3) Grasp the bullet guide and follower arm and lift them out of the receiver (fig 16). Then lift the operating rod catch and lift it out of the receiver (fig 17).

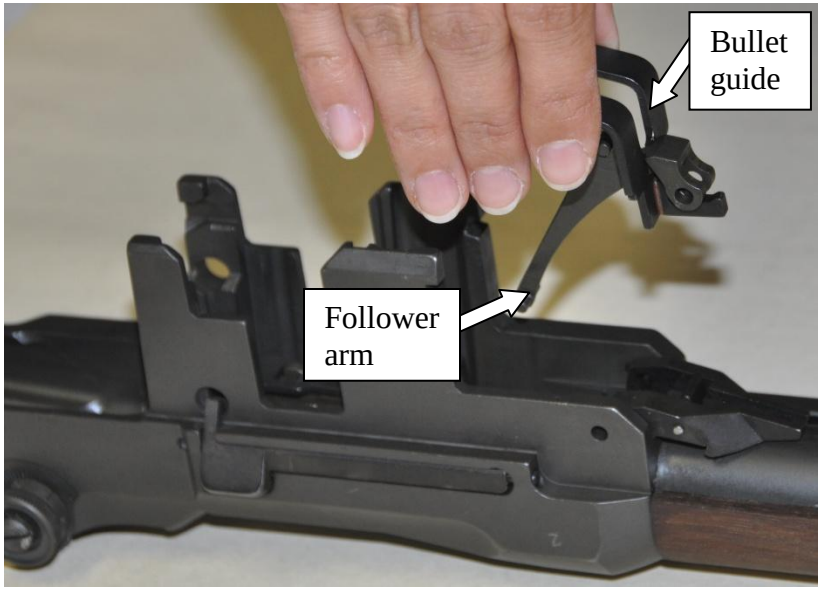

Figure 16. Bullet guide and follower arm removal

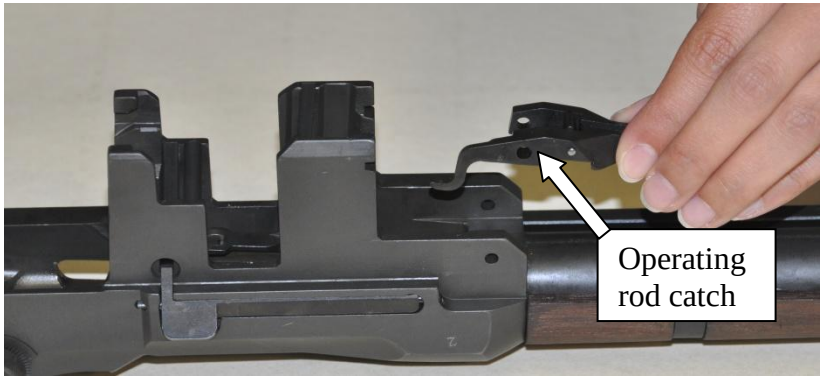

Figure 17. Operating rod catch removal

4) Reach down into the receiver and lift the follower assembly (fig 18).

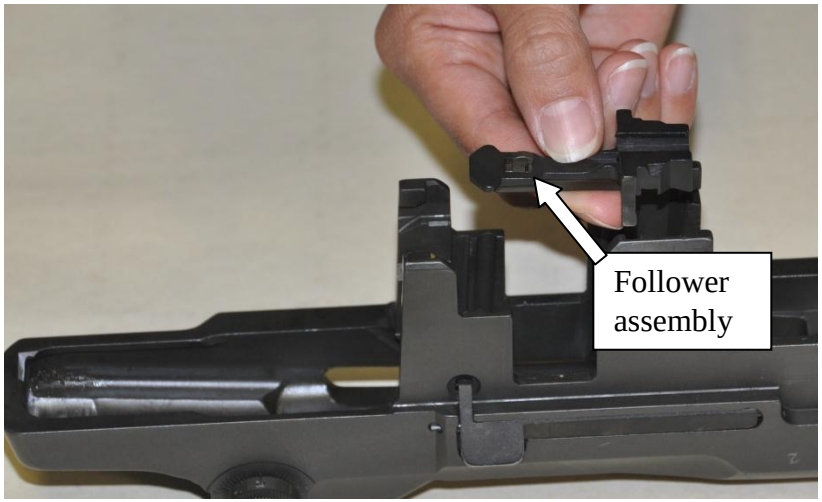

Figure 18. Follower assembly removal

5) With the receiver facing upright, pull the operating rod to the rear with slight upward force until it engages the notch (fig 19) in the receiver (the rear of the handle will be directly under the forward edge of the windage knob) (fig 20).

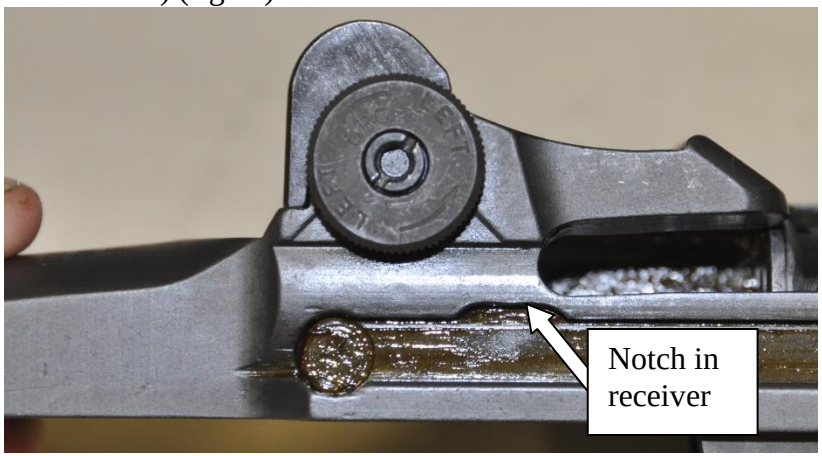

Figure 19. Notch on receiver

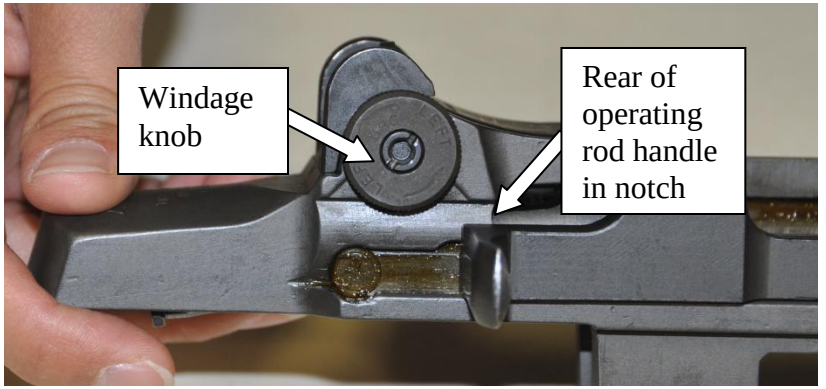

Figure 20. Handle under forward edge of windage knob

Apply upward force and then rotate the handle clockwise to separate it from the bolt lug (fig. 21). You may need to jiggle the operating rod slightly to disengage it. Remove the operating rod.

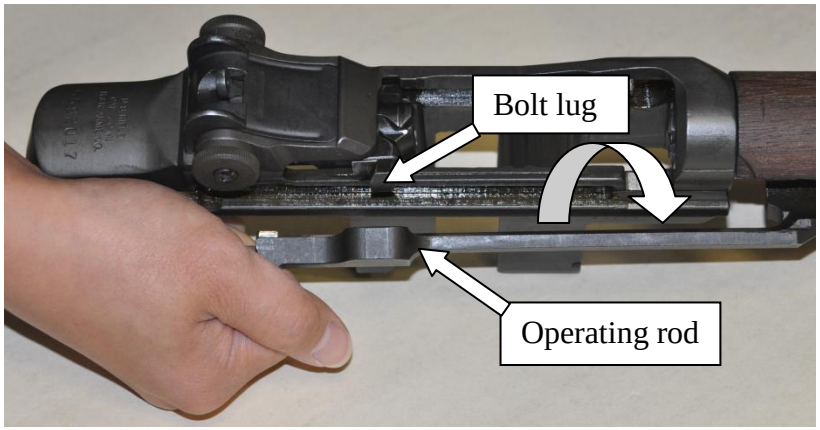

Figure 21. Operating rod removal

Note: The piston end of 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.

6) From the shooter's perspective, grasp the bolt on the exposed lug and slide the bolt forward while lifting it upward and outward with a rotating motion (fig 22).

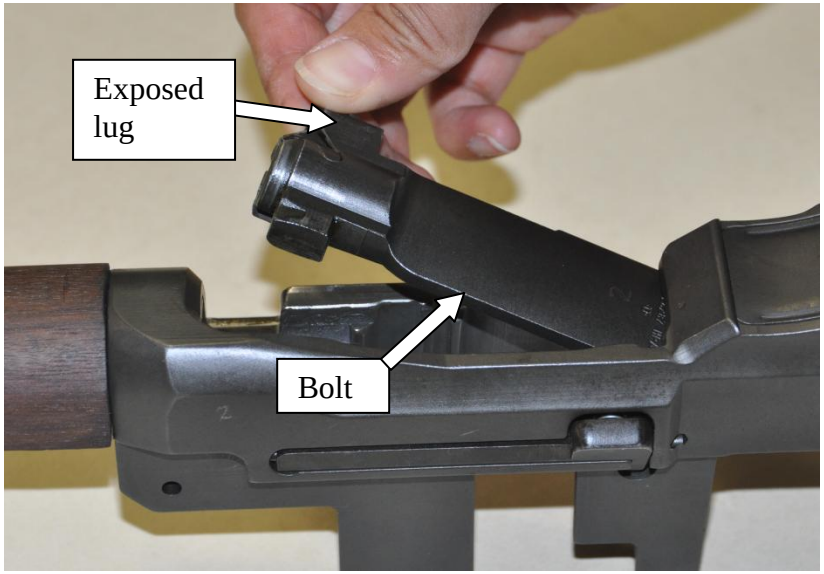

Figure 22. Bolt removal by exposed lug

7) Using a T-grip screwdriver (preferred) or a standard flathead screwdriver, unscrew and remove the gas cylinder lock screw and then unscrew the Blank Firing Adapter (BFA) (fig 23 and 24). If necessary apply light pressure with 7/16 inch wrench to remove the BFA. Loosen the gas cylinder by tapping lightly toward the muzzle on the bayonet lug with a wooden mallet or similar soft object (fig 25) and remove (fig 26).

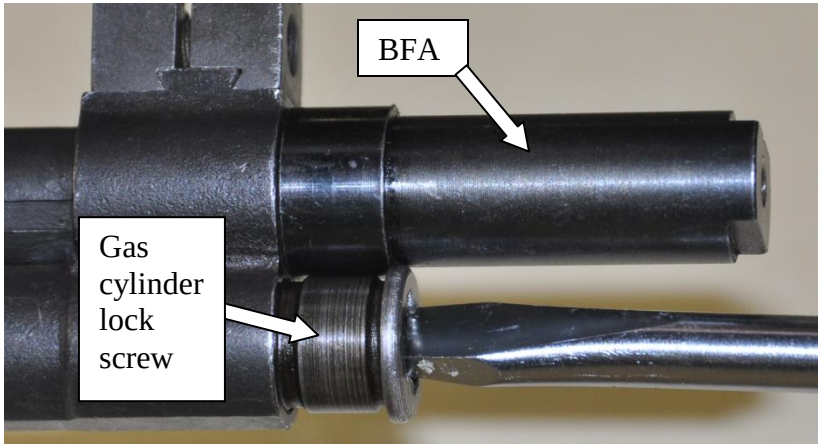

Figure 23. Gas cylinder lock screw removal

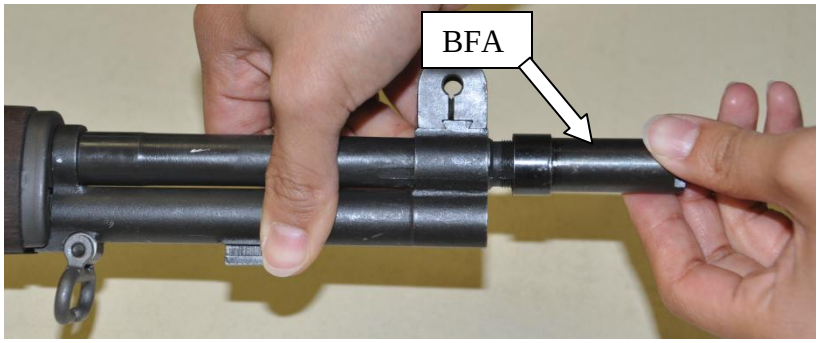

Figure 24. BFA removal

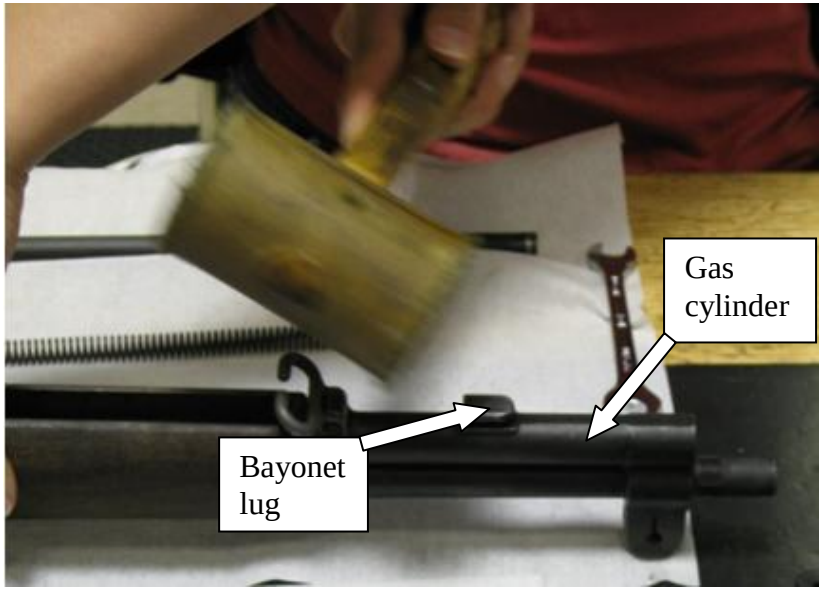

Figure 25. Loosen gas cylinder with wooden mallet

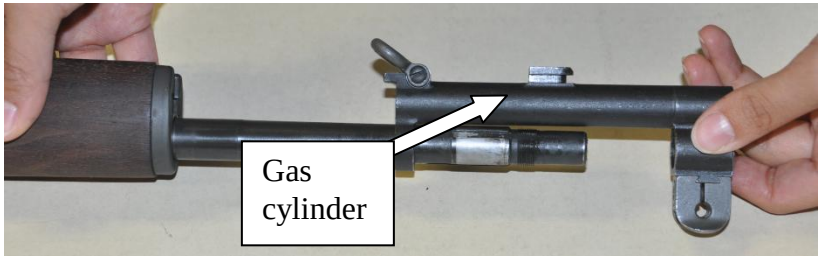

Figure 26. Gas cylinder removal

8) Remove the front handguard by sliding it forward over the muzzle (fig 27). *Do not attempt to remove the rear handguard.*

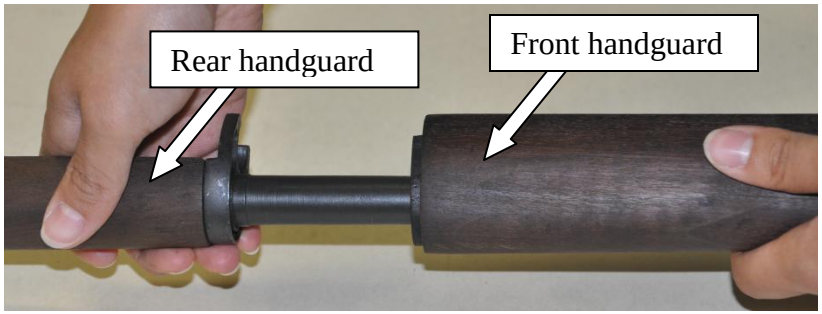

Figure 27. Removal of front handguard

9) The parts of the barrel and receiver group are shown below along with the stock group and trigger group (fig 28).

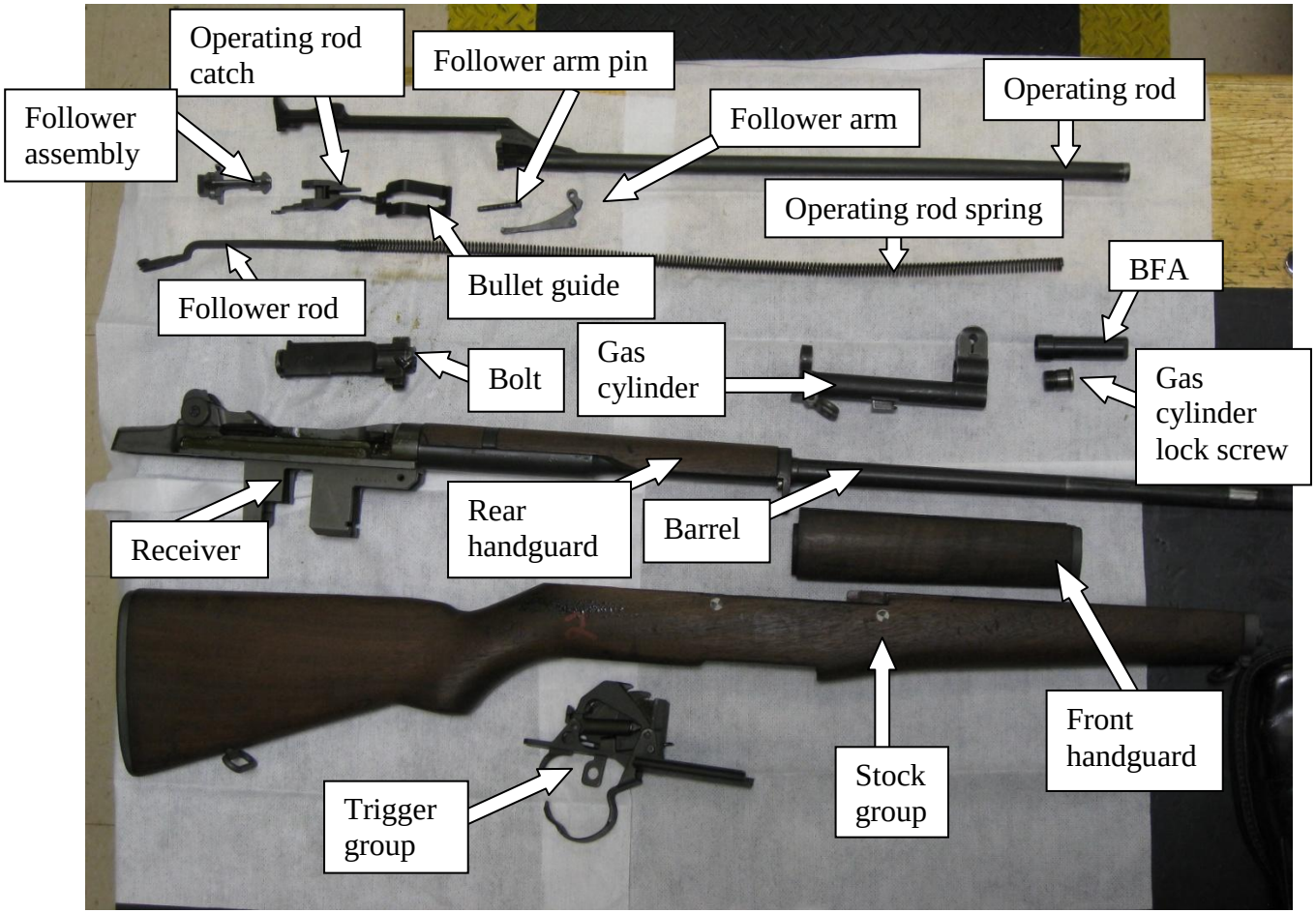

Figure 28. Disassembled parts of M1 Garand rifle

2.6 Barrel and Receiver Group – Assembly of the Operating Mechanism

1) Replace the front hand guard by sliding it over the muzzle and ensuring that it is seated properly in the lower band (fig 29).

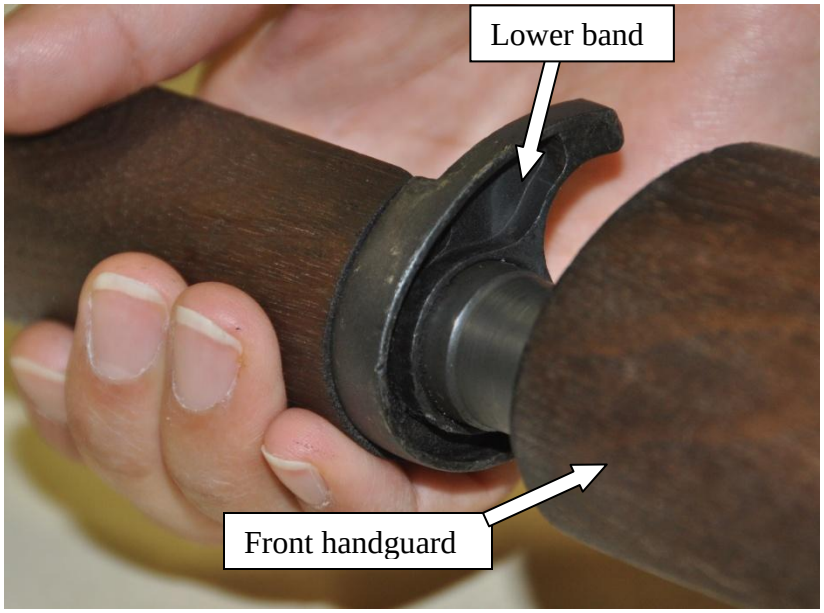

Figure 29. Front hand guard insertion

2) Place the gas cylinder over the barrel, making sure that the splines are aligned with their grooves (fig 30).

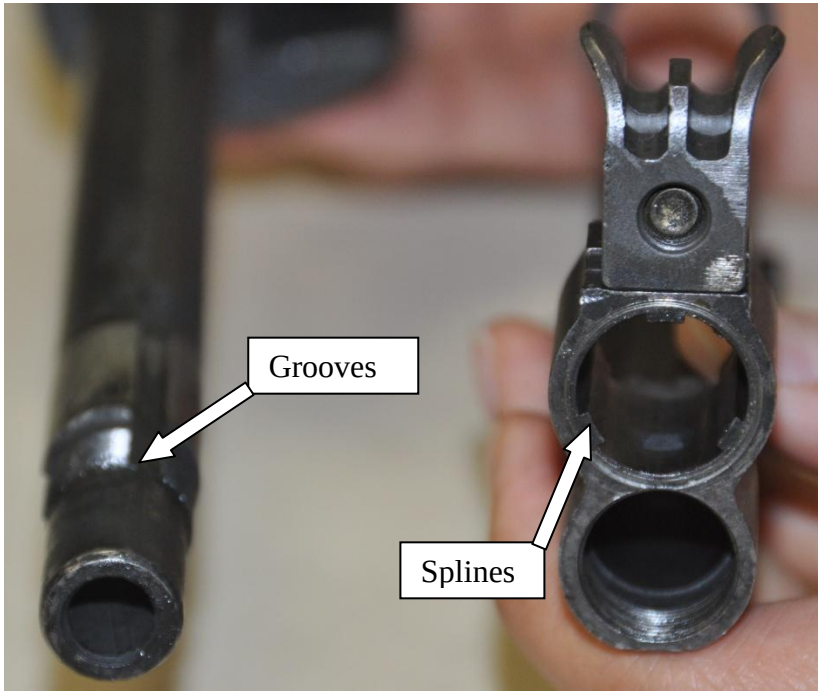

Figure 30. Splines & grooves

Push the gas cylinder down until the forward edge is flush with the larger diameter portion of the barrel (fig 31 and 32).

NOTE: If necessary, a wooden mallet or similar tool may be used to tap the gas cylinder into place.

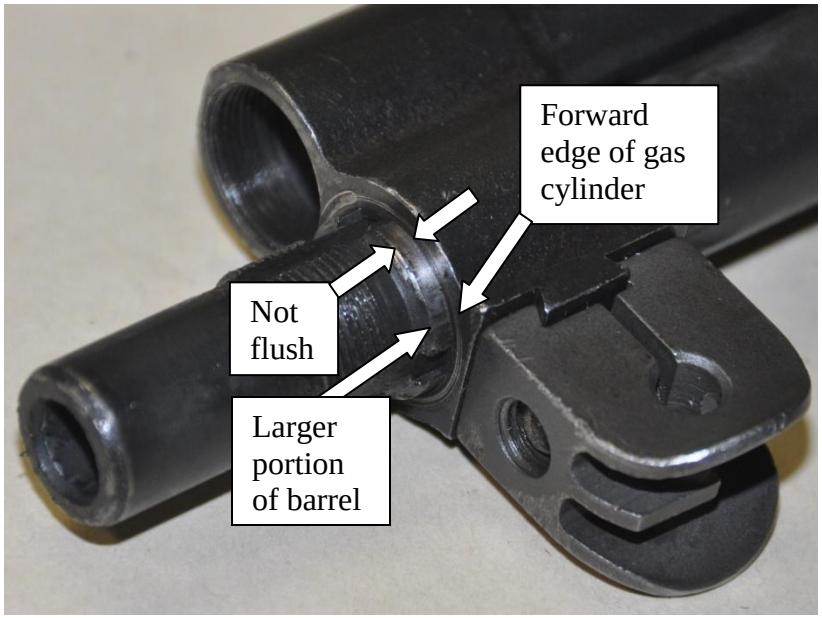

Figure 31. Gas cylinder positioned INCORRECTLY (too far rearward)

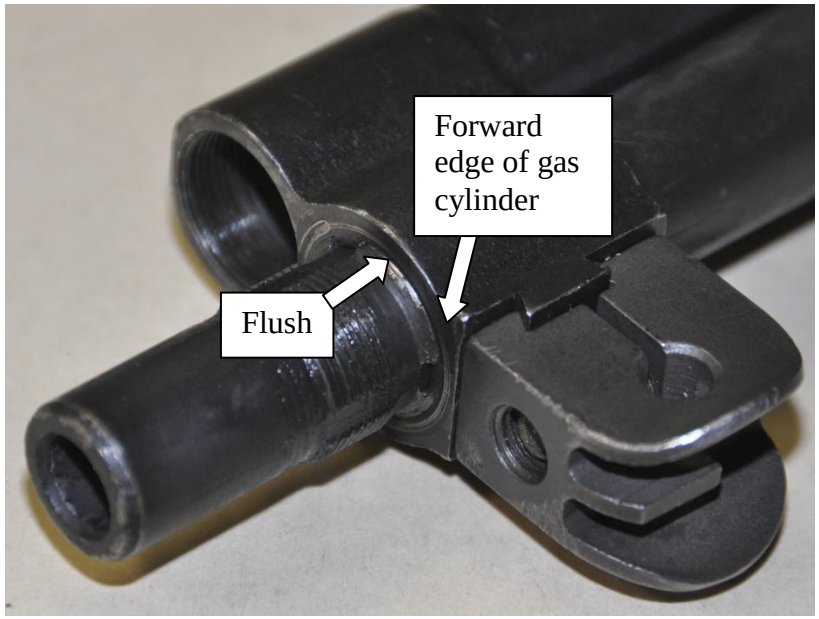

Figure 32. Gas cylinder positioned CORRECTLY

Screw the BFA onto the barrel until it touches the gas cylinder. WARNING: Once contact is made with the gas cylinder, do not tighten further (fig 33).

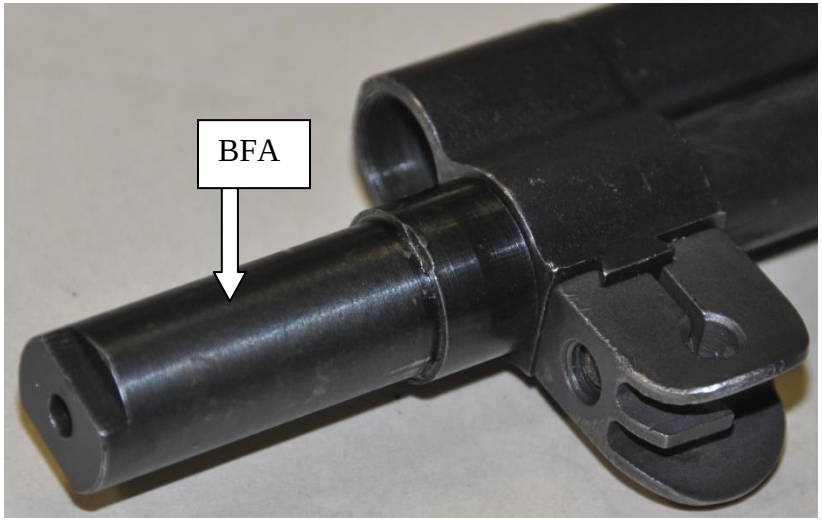

Figure 33. BFA installation

Attach the gas cylinder lock screw into the gas cylinder with a T-grip screwdriver (preferred) or a standard flathead screwdriver and firmly tighten using hand strength only (fig 34).

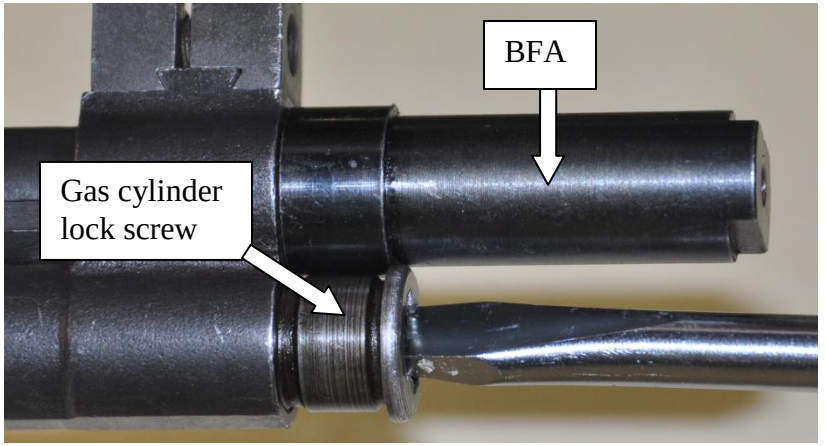

Figure 34. Gas cylinder lock screw installation

3) To replace the bolt, hold the rifle upright and guide the rear lug of the bolt into its groove on the left side of the receiver (fig 35). Rotate so that the tang of the firing pin clears the notch in the bridge of the receiver (fig 36). Align the right locking lug on its bearing surface and slide the bolt to the rear.

Note: Figures 35 and 36 show the rifle inverted. It is not necessary to invert the rifle but the figures are provided to aid in the bolt insertion.

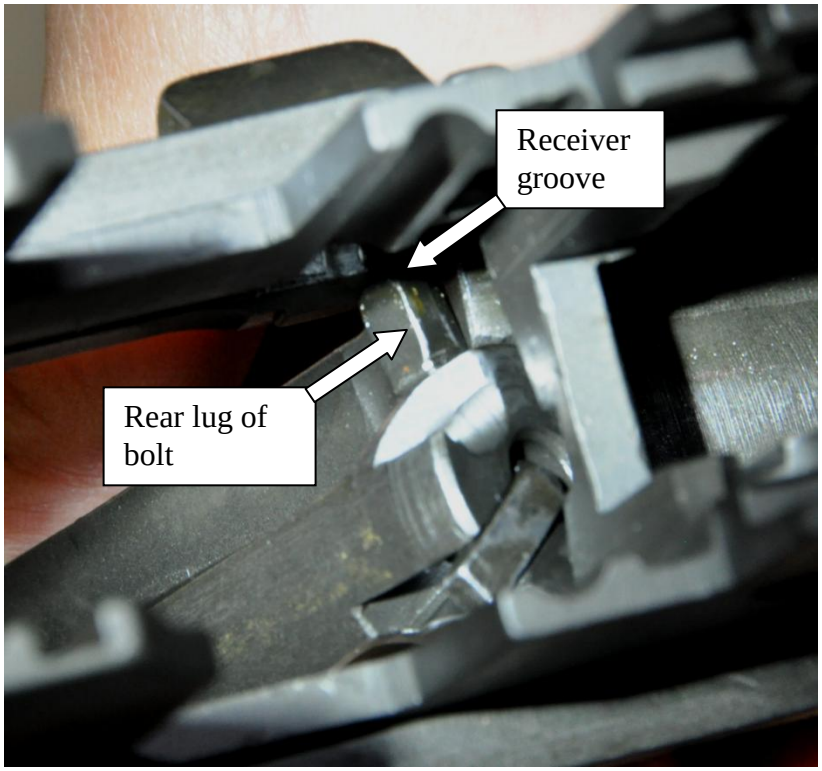

Figure 35. Rear lug in groove on receiver

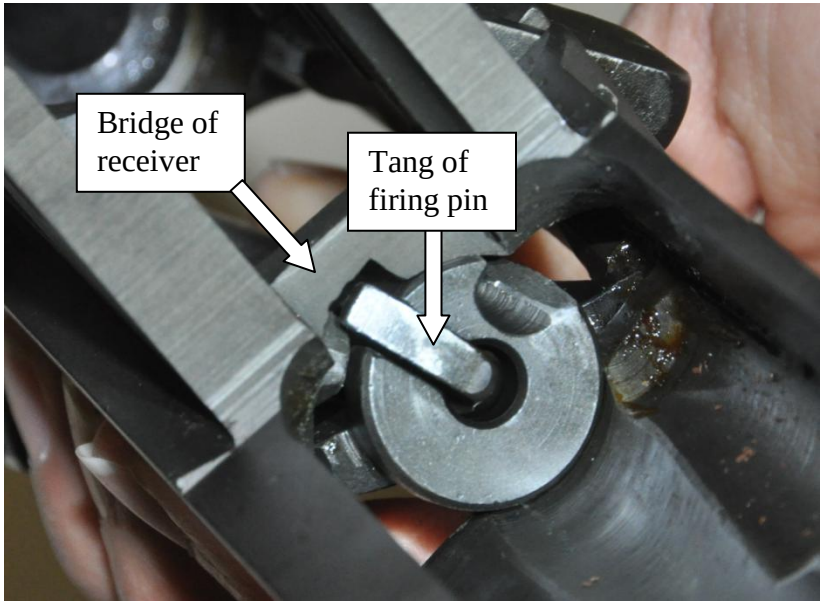

Figure 36. Tang clearing notch in bridge of receiver

4) To replace the operating rod, place the piston end into the gas cylinder while weapon is inverted (fig 37). Rotate the weapon upright and align the operating rod so that the recess in the hump fits over the operating lug of the bolt (fig 38 and 39). Move the operating rod fully rearward and then forward until the bolt is closed.

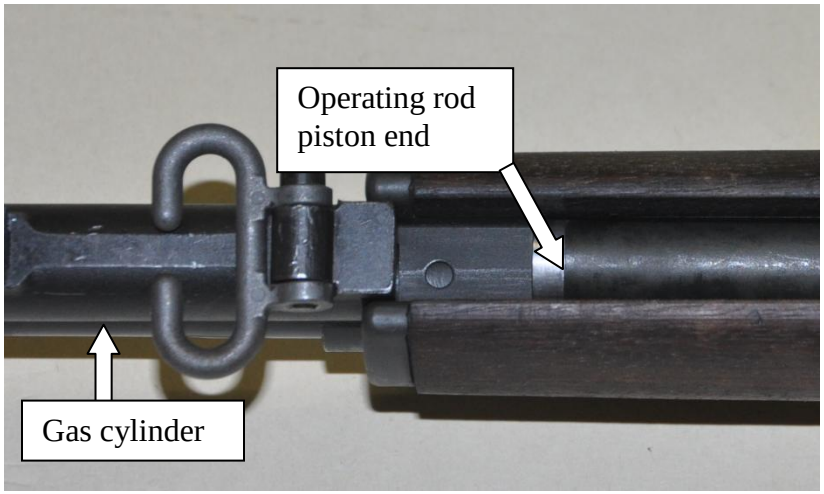

Figure 37. Operating rod piston end insertion

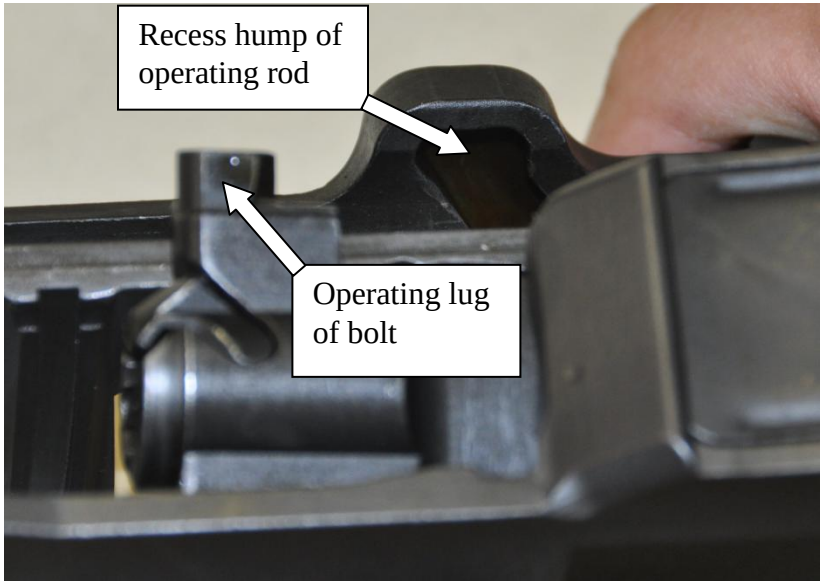

Figure 38. Recess in the hump and operating lug of bolt

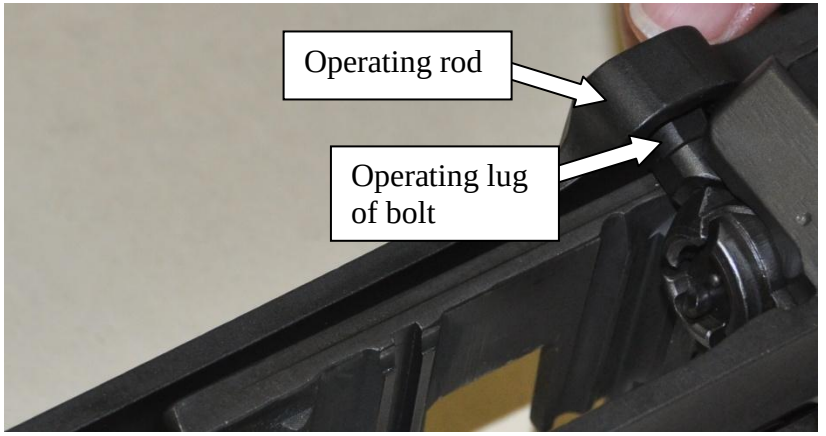

Figure 39. Assembly of operating rod

5) Invert weapon and replace the follower assembly so that its guide ribs fit into their grooves on the receiver. Make sure that the slide of the follower is down and that the square hole is to the rear (fig 40). The slide will rest against the bolt.

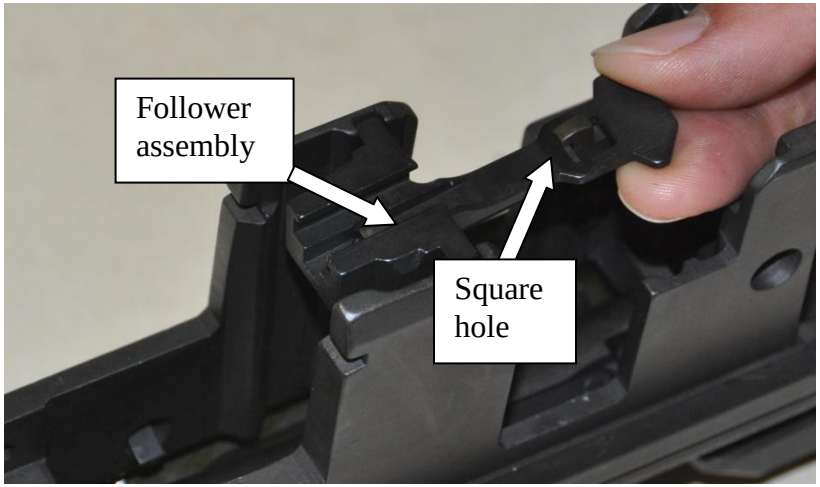

Figure 40. Follower assembly insertion

6) Place the bullet guide so that its shoulders fit into their notches in the receiver and its hole is aligned with the holes in the receiver (fig 41).

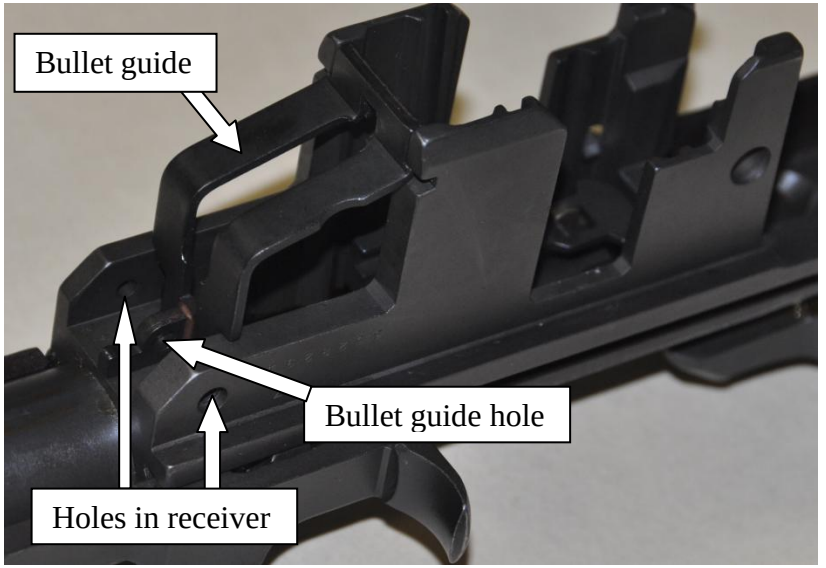

Figure 41. Bullet guide insertion

7) Lift up the lower part of the bullet guide slightly. Insert the rear arm of the operating rod catch (fig 42) through the clearance cut in the side of the bullet guide. Make sure that the rear arm is placed underneath the front lug (fig 43) of the clip latch which projects into the receiver (fig 44). Lower the bullet guide into place. Test for correct assembly by pressing down on the front arms of the operating rod catch assembly (fig 45). It should move and you should be able to feel the tension of the clip latch spring.

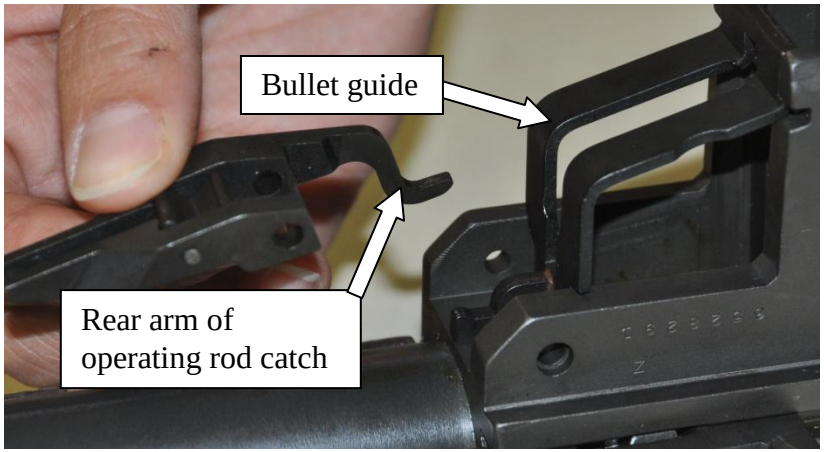

Figure 42. Rear arm of operating rod catch

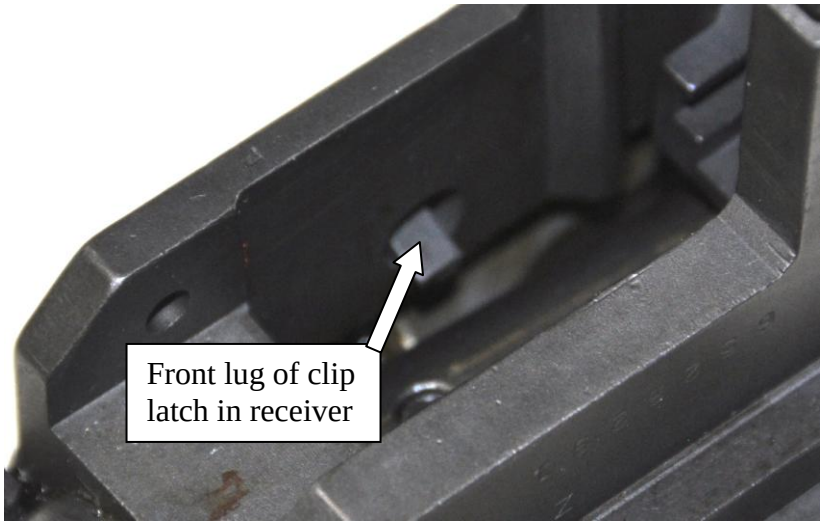

Figure 43. Lug in receiver

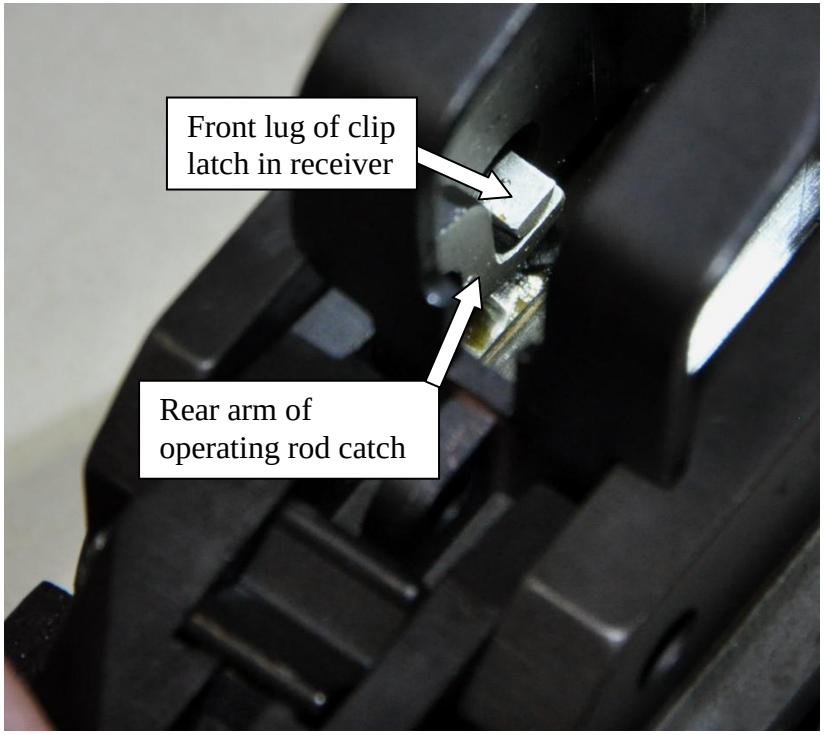

Figure 44. Rear arm of operating rod catch underneath stud of clip latch

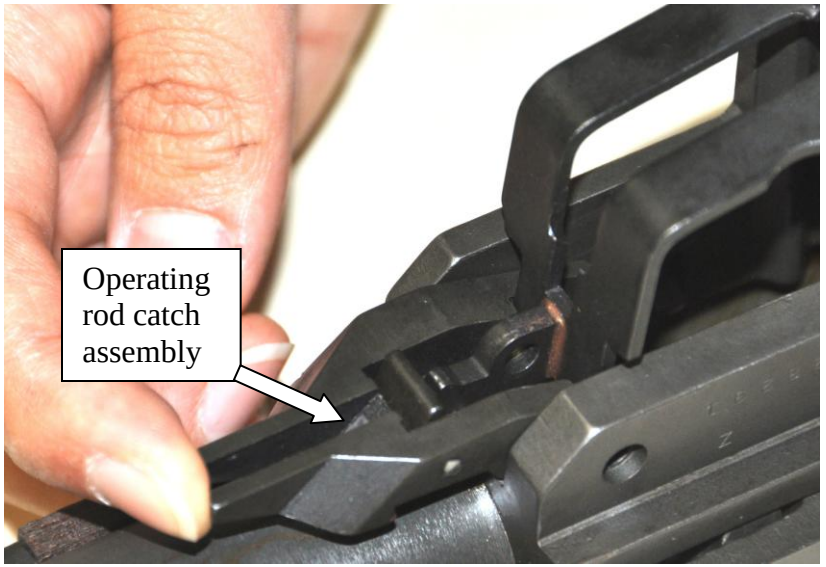

Figure 45. Testing of operating rod catch assembly

8) Lift the follower assembly and place the follower arm by passing its rear studs through the bullet guide and inserting them into the guide grooves on the follower assembly (fig 46). Align 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 operating rod side (fig 47).

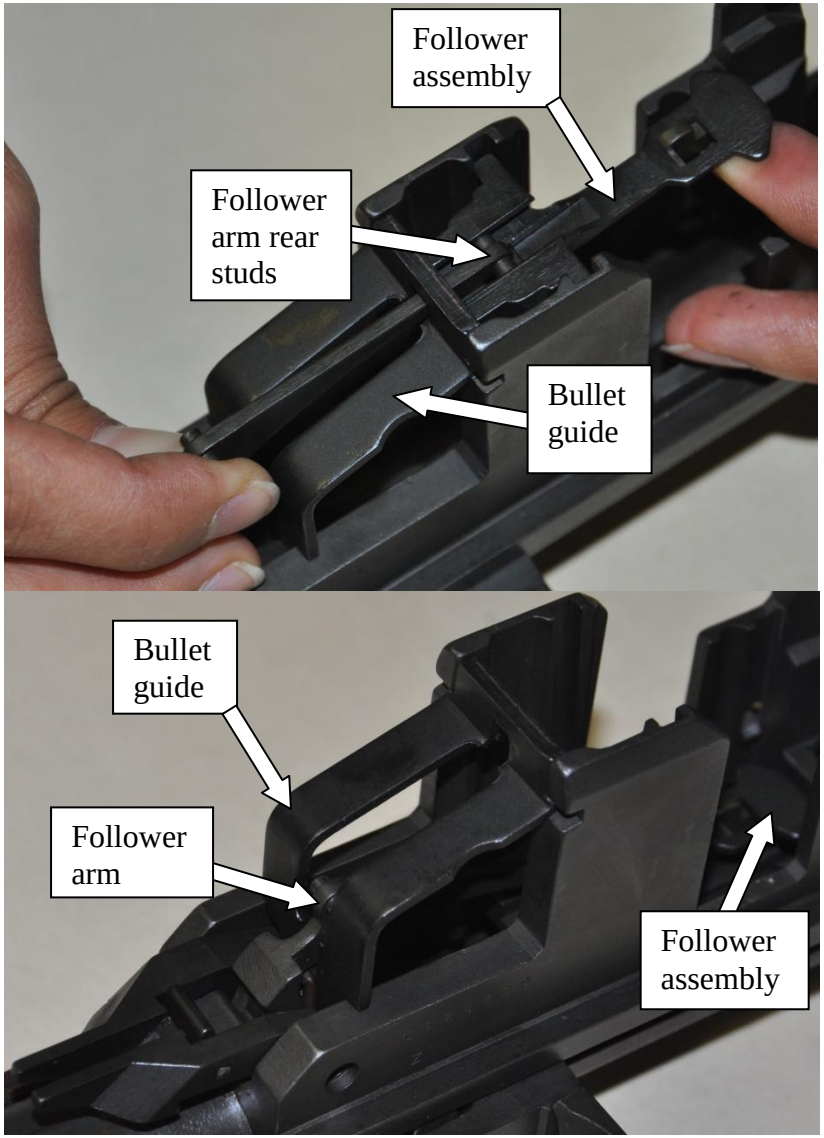

Figure 46. Follower arm engaged

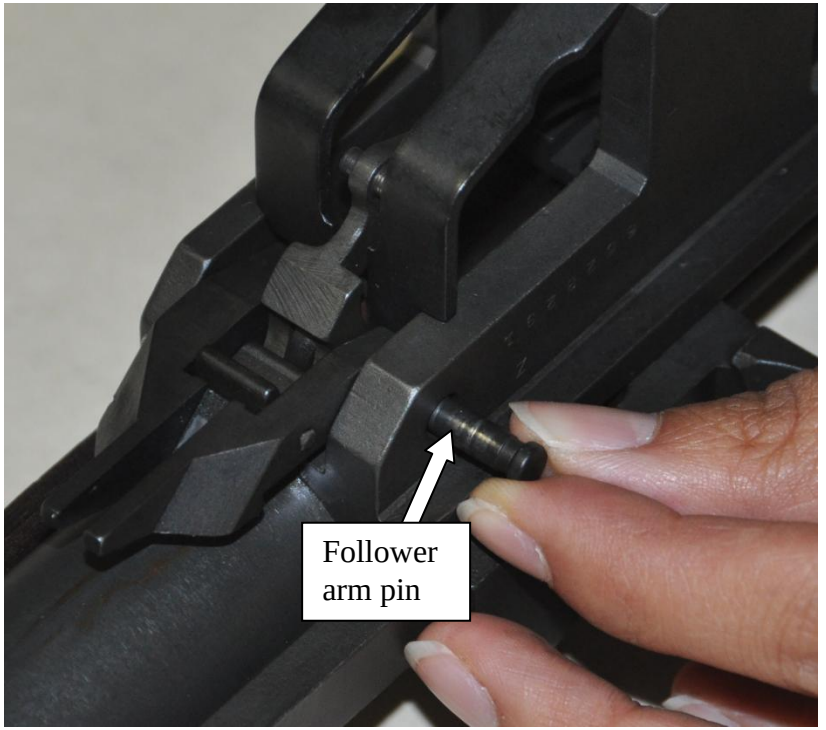

Figure 47. Insertion of follower arm pin

9) Insert the loose end of the operating rod spring into the operating rod. Grasp the follower rod, making sure that its hump is down/toward the barrel (fig 48). Compress the operating rod spring, and engage the forks of the follower rod with the front studs of the follower arm (fig 49). You may have to raise the follower assembly to do this.

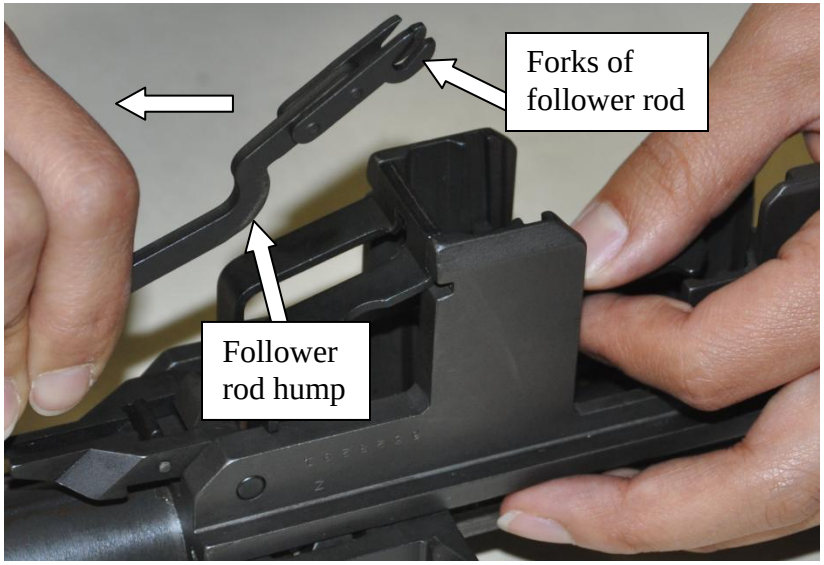

Figure 48. Orientation of follower rod

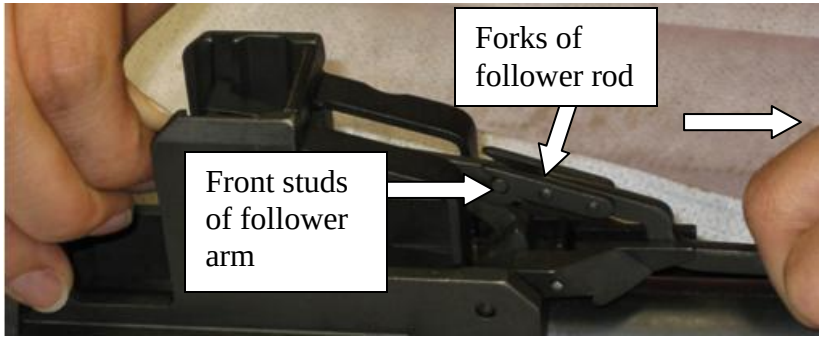

Figure 49. Insertion of operating rod spring

2.7 Assembly of the Three Main Groups

1) Pick up the stock group and engage the U-shaped flange on the front of the stock into the lower band, then lower the stock group onto the barrel and receiver group (fig 50).

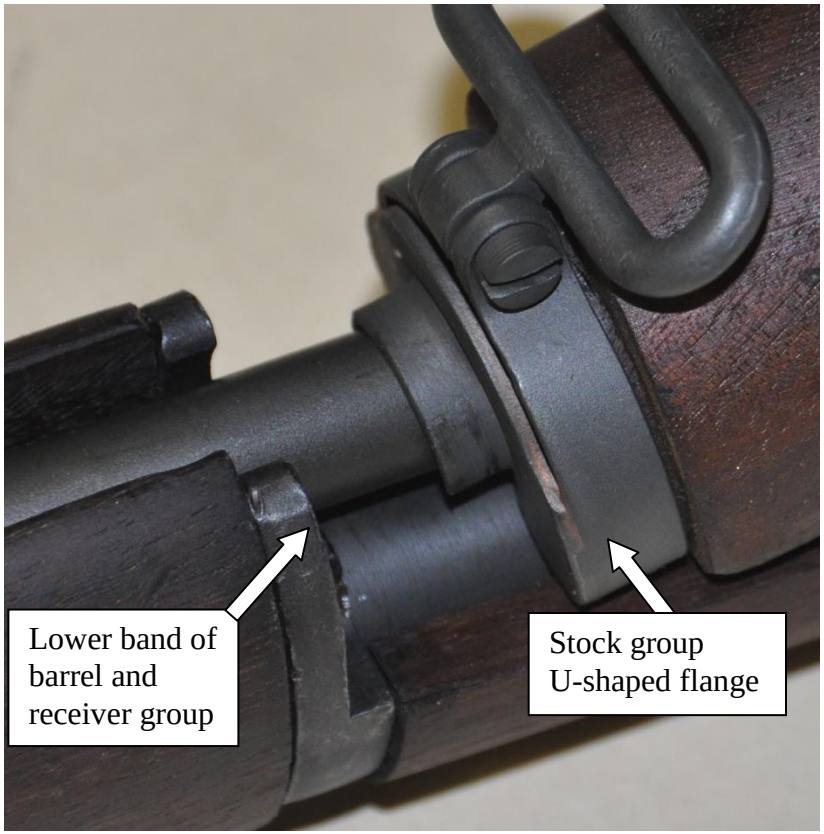

Figure 50. Assembly of stock group

2) Unlatch and open the trigger guard. Keeping the trigger group level, insert it straight down into the receiver, making sure that the locking lugs on the trigger guard enter their recesses in the receiver (fig 51). Close the trigger guard and latch it by pressing firmly down until it locks. You may need to strike it with the heel of the hand.

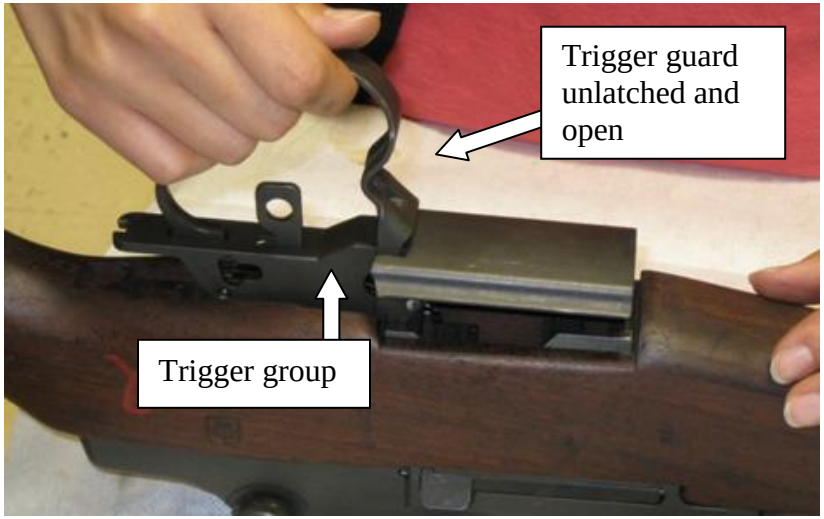

Figure 51. Insertion of trigger group

2.8 Blank Firing Adapter (BFA)

The threads on the BFA, and where it screws into the barrel, should be examined. For lock screw assembly/tightening procedure, see section 2.5.

2.9 Test for Correct Assembly

Each time the rifle is disassembled and assembled it should be tested to make sure that it is put together properly. To do this, pull the operating rod to its rearmost position. The bolt should stay open. Close the bolt and snap the safety to its locked position. Squeeze the trigger. The hammer should not fall. Push the safety to its unlocked position and squeeze the trigger. The hammer should fall. This test checks the operation of the safety.

3.0 Operation and Functioning

3.1 Loading Rounds into a Clip

1) Start placing rounds in the lower left of the clip and make sure that each round is against the rear wall so that the inner rib of each clip engages the extracting groove of each round (fig 52).

2) ***Each time rounds are loaded into a clip, the clip should be checked for long rounds.*** If one round extends beyond the others, it is possible that a live round has been mixed in with blanks. Make sure you never fire any ammunition other than the supplied blanks in your rifle. Firing unauthorized ammunition may result in severe injury to yourself and others nearby, or damage to the weapon.

Figure 52. Loading rounds into clip

3.2 Loading the Rifle

To load a single round, pull the operating rod all the way to the rear. While holding the muzzle below the horizontal, place a round in the chamber and seat it with the thumb. With the knife edge of the right hand against the operating rod handle, force the operating rod slightly to the rear. Push down on the follower assembly with the right thumb and allow the bolt to ride forward. Remove the thumb from the follower assembly and release the operating rod handle, allowing the operating rod to go all the way forward.

To load a clip (fig 53), hold the rifle and pull the operating rod handle all the way to the rear. Place the clip on top of the follower assembly. Place the thumb on the center of the top round into the clip and press the clip straight down into the receiver until it latches. Remove your hand and allow the bolt to travel forward freely. Note that the operating rod is not held to the rear after fully inserting a loaded clip. In order to chamber the first round, it may be necessary to strike the back of the operating rod handle with the heel of the right hand to fully close and lock the bolt.

Figure 53. Loading of clip into rifle

3.3 Unloading the Rifle (not due to a misfire)

To unload a round from the chamber, support the rifle; with the right hand grasp the operating rod handle and pull the operating rod slowly to the rear. At the same time, place the left hand, palm down, over the receiver to catch the round as it is ejected.

To unload a clip, unload the round that is in the chamber as described above. When the operating rod reaches its rearmost position, hold it there. Place the palm of the left hand over the receiver and depress the clip latch (fig 54) with the left thumb, allowing the clip to be ejected up into the hand. Do not relax the rearward pressure on the operating rod handle until after the clip has been removed.

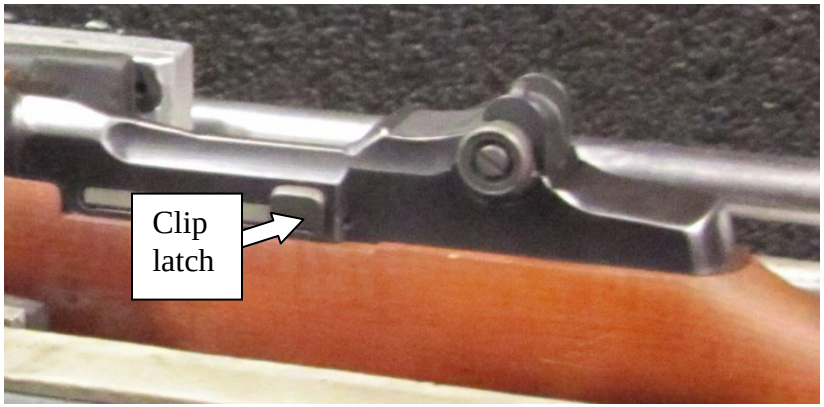

Figure 54. Clip latch

3.4 Functioning of the Rifle

1) **Feeding**. Feeding takes place when a round is moved into the path of the bolt. This is done through the follower assembly exerting upward force on the remaining rounds within the clip. The follower assembly exerts continuous upward force on the remaining rounds through compression of the operating rod spring through its connection to the follower rod and follower arm (fig 55).

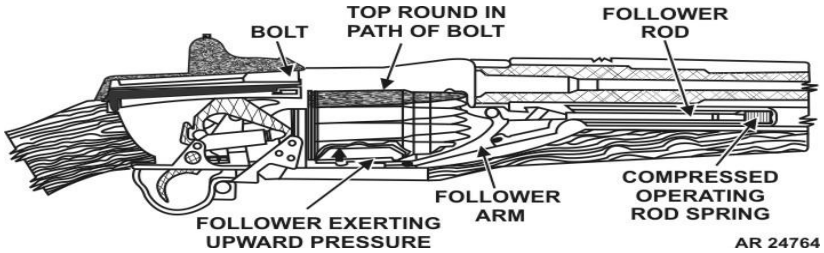

Figure 55. Position of parts when the bolt is in the rearmost position

2) **Chambering**. Chambering occurs when a round is moved into the chamber. This takes place as the bolt goes forward under force from the operating rod spring, picking up the top round in the clip and driving it forward into the chamber. Chambering is complete when the extractor snaps into the extracting groove on the cartridge case and the ejector is forced into the face of the bolt (fig 56).

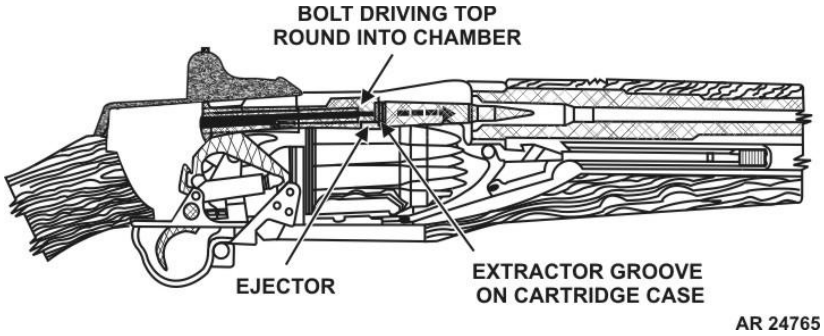

Figure 56. Chambering

3) **Locking**. Locking is complete when the bolt is fully closed. The bolt is moved into its fully locked position through the camming action of the operating rod which forces the operating lug of the bolt down. This engages the locking lugs on the bolt with their recess in the receiver (fig 57).

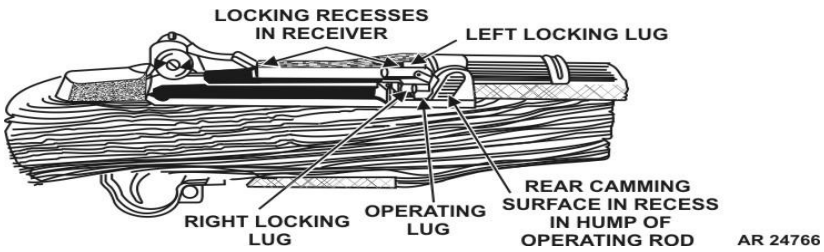

Figure 57. Locking

4) **Firing**. Firing occurs when the firing pin strikes the primer. As the trigger is pulled the trigger lugs are disengaged from the hammer hooks and the hammer is released. The hammer moves forward under the force of the hammer spring and strikes the tang of the firing pin, driving the firing pin against the primer and firing the round (fig 58).

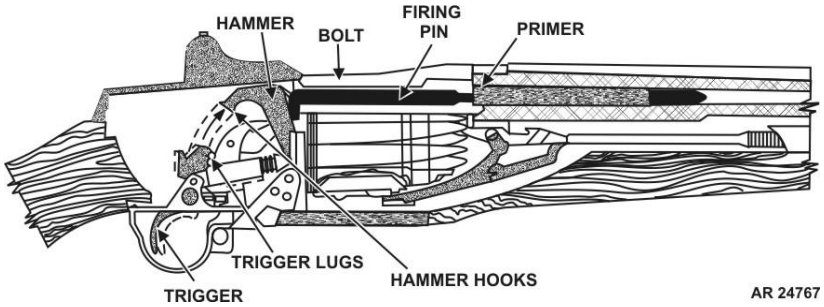

Figure 58. Firing

5) **Unlocking**. Unlocking occurs after the round is fired. Once the round is initiated, a small portion of the gas expands through the gas port into the gas cylinder, forcing the operating rod to the rear (fig 59). The camming surface inside the recess in the hump of the operating rod, in combination with the guideway in the side of the receiver, forces the operating lug of the bolt upward, disengaging the locking lugs from their recesses in the receiver. The bolt is thus unlocked and ready to be moved to the rear.

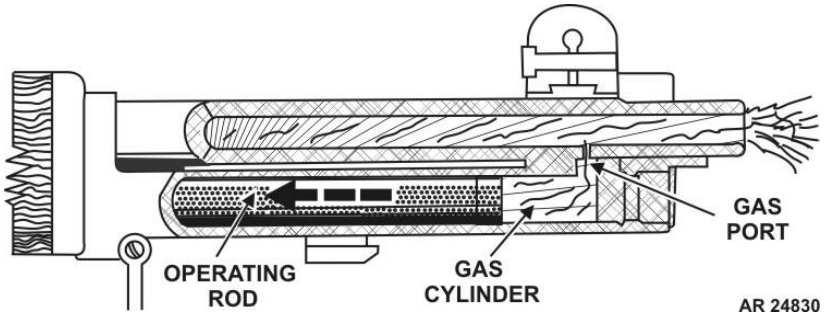

Figure 59. Action of gas

6) **Extracting**. Extracting is the pulling of the empty cartridge case from the chamber. The extractor, which is engaged with the extracting groove on the cartridge case withdraws the empty case as the bolt moves to the rear (fig 60).

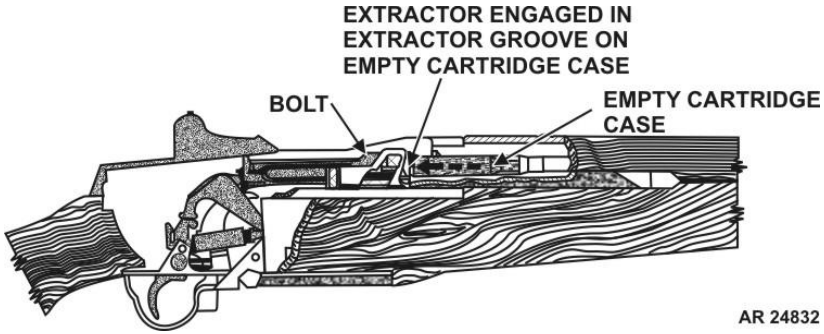

Figure 60. Extracting

7) **Ejecting**. Ejecting is throwing the empty case from the rifle. As the bolt moves to the rear, withdrawing the case from the chamber, the round is held in place by the chamber walls. When the mouth of the empty case clears the chamber, it is ejected up and to the right due to the force exerted by the ejector.

8) **Cocking**. Cocking occurs when the hammer is forced into the proper position for firing the next round. This happens as the bolt moves to the rear. The rear end of the bolt forces the hammer back and rides over it. The hammer is caught by the sear if the trigger is still held to the rear, and is caught by the trigger lugs if trigger pressure has been released.

4.0 Stoppage, Immediate Action, Malfunctions, and Ammunition Malfunction Reporting

A stoppage is any unintentional interruption in the cycle of operation. Most stoppages occur because of dirty, worn or broken parts, and/or lack of lubrication. The user should watch for these defects and take corrective action to eliminate them before they cause a stoppage. Some of the more common stoppages, with their usual causes and remedies, are shown in Table 1.

4.1 Immediate Action

Immediate action is the prompt action taken by the user to overcome a stoppage. To perform immediate action, pull the operating rod handle all the way to the rear with the right hand, palm up then release it. Next, aim the rifle and try to fire it.

4.2 Malfunctions

A malfunction is a failure of either the weapon or ammunition to function as intended.

Normally, the user will instinctively apply immediate action which in most instances will overcome or correct the stoppage even when caused by a hangfire or misfire. Misfires are caused by one of three factors: the user, the weapon (due to excessive dirt, residue, etc), or faulty ammunition. When misfires are caused by faulty ammunition, the lot number should be reported to JMC. The alpha-numeric lot numbers are printed on the ammunition can.

Table 1. Malfunctions, Probable Causes and Actions/Remedies

Stoppage/Malfunction	Probable Cause	Action/Remedy
Failure to load	• Damaged clip	• Replace clip
	• Improperly assembled receiver components	• Disassemble and reassemble (Section 2.4/2.5)
Failure to feed ammunition	• Lack of lubrication of operating parts	• Clean and lubricate parts. (Section 5.1/5.2)
	• Defective or worn follower rod/operating rod spring	• Replace follower rod/operating rod spring
	• Short recoil	• See "Short recoil" stoppage/malfunction within this table
Failure to chamber ammunition	• Lack of lubrication of operating parts	• Clean and lubricate parts. (Section 5.1/5.2)
	• Dirty chamber	• Clean chamber. (Section 5.2)
	• Defective ammunition	• Replace ammunition
Failure to lock bolt	• Lack of lubrication of operating parts	• Clean and lubricate parts. (Section 5.1/5.2)
	• Dirty chamber	• Clean chamber. (Section 5.2)
	• Dirty locking recesses	• Clean recesses. (Section 5.2)
	• Weak operating rod spring	• Replace follower rod/operating rod spring. (section 2.4/2.5)
Failure to fire ammunition	•Bolt not in battery	•See "Bolt fails to close tightly" stoppage/malfunction within this table
	• Defective ammunition	• Replace ammunition
	• Defective firing pin	• Replace firing pin - contact CMP
	• Defective trigger housing group	• Replace trigger housing group (section 2.3/2.6)
	•Weak or broken hammer spring	• Replace trigger housing group (section 2.3/2.6)
Failure to unlock bolt	• Dirty chamber	• Clean chamber. (Section 5.2)
	• Lack of lubrication of operating parts	• Clean and lubricate parts. (Section 5.1/5.2)
	• Insufficient gas	• Tighten and/or clean gas cylinder lock screw, and/or adjust or replace gas cylinder (Section 5.1/5.2 or 2.4/2.5)
	• Follower arm pin worn	• Replace follower arm (section 2.4/2.5)
	• Follower arm bent or out of tolerance	• Replace follower arm (section 2.4/2.5)
Failure to extract spent cartridge case	• Dirty chamber	• Clean chamber. (Section 5.2)
	• Defective ammunition	• Replace ammunition
	• Broken extractor	• Replace extractor - contact CMP
Failure to eject cartridge case	• Broken ejector or spring	• Replace ejector or spring – contact CMP
	• Short recoil	• See "Short recoil" stoppage/malfunction within this table

Table 1. Malfunctions, Probable Causes and Actions/Remedies (continued)

Stoppage/Malfunction	Probable Cause	Action/Remedy
Failure to cock hammer	• Defective trigger housing group	• Replace trigger-housing group (section 2.3/2.6)
	• Short recoil	• See 'short recoil'
Cartridge clip inserts with difficulty	• Deformed cartridge clip	• Replace cartridge clip
	• Broken clip ejector	• Replace clip ejector –contact CMP
	• Interference between bullet guide and follower arm	• Replace bullet guide or follower arm (section 2.4/2.5)
	• Bad follower assembly	• Replace follower assembly (section 2.4/2.5)
Short recoil (operating rod does not fully cycle)	• Gas cylinder lock screw loose	• Tighten lock screw (section 2.6)
	• Undersized or out of round op rod piston	•Replace operating rod (section 2.4/2.5)
	• Improperly installed or versized gas cylinder	• Adjust gas cylinder (section 2.6) replace (section 2.4/2.5).
	• Carbon in gas cylinder or barrel port	• Clean gas cylinder or barrel port (section 2.4/5.2/2.5)
	• Operating rod assembly binding	• Replace operating rod assembly if damaged, or relieve wood from gun stock assembly, where operating rod binds on wood (section 2.4/2.5)
	• Leak in gas cylinder lock screw with valve	• Replace gas cylinder lock screw with valve (section 2.4/2.5)
	• Defective operating rod spring.	• Replace operating rod spring (section 2.4/2.5)
	• Bolt binding	• Remove burs from bolt - contact CMP
	• Distorted or damaged receiver	• Replace receiver – contact CMP
Bolt fails to close tightly	• Extractor does not snap over rim of cartridge	• Clean bolt assembly and extractor recess (Section 5.2)
	• Operating rod assembly binding	• Replace operating rod assembly if damaged, or relieve wood from gun stock assembly, where operating rod binds on wood (section 2.4/2.5)
	• Weak or broken operating rod spring	• Replace follower road/operating rod spring (section 2.4/2.5)
	• Dirty chamber	• Clean chamber. (Section 5.2)
	• Frozen ejector spring and plunger	• Replace ejector spring and plunger - contact CMP
	• Damaged bolt and/or receiver	• Replace bolt or receiver – contact CMP
	• Insufficient headspace	• Replace bolt assembly by selective fit or headspace - contact CMP

4.3 Ammunition Malfunction Reporting

In the event of an ammunition malfunction contact the US Army Joint Munitions Command:

Points of Contact:
Daniel R. Saito
E-mail: Daniel.r.saito.civ@mail.mil
Telephone: 309-782-6078

Bounkham L. Khounlo
E-mail: Bounkham.l.khounlo.civ@mail.mil
Telephone: 309-782-7194

5.0 Maintenance

5.1 Cleaning Materials, Lubricants, Equipment, and Parts

See CMP's website or contact CMP (see paragraph 1.1 for contact information) for current information on how and where to obtain cleaning materials, lubricants, equipment, and parts.

5.1.1 Cleaning Solutions

1) Bore cleaner should be used as the primary cleaning solvent for cleaning the bore.
2) Hot, soapy water or boiling water is no substitute for bore cleaner and should not be used.

   Caution: Individual protective measures must be taken when using cleaning solutions.

5.1.2 Lubricants

1) Lubricating gun oil or grease is used for lubricating the rifle at normal temperatures. It should be applied to the areas shown in Figures 61 through 64:

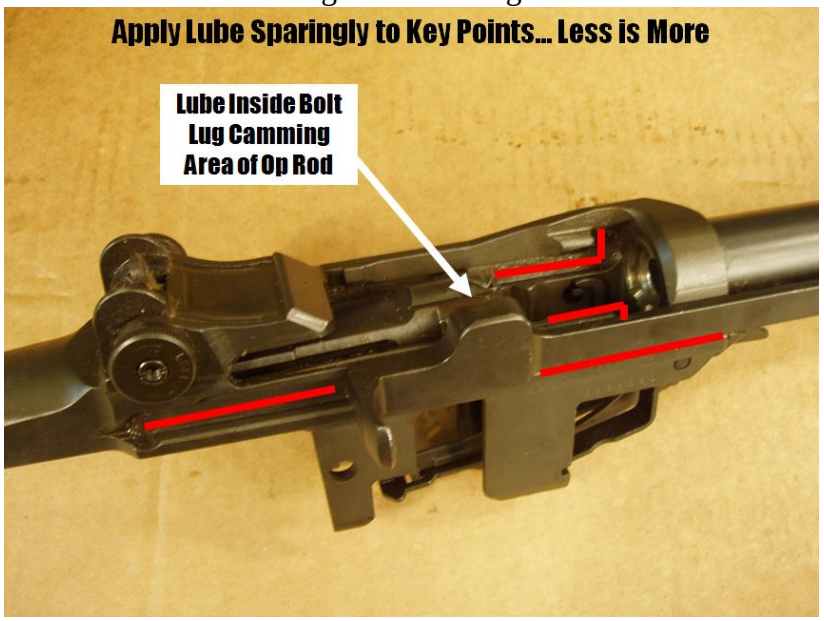

Figure 61. Lubrication

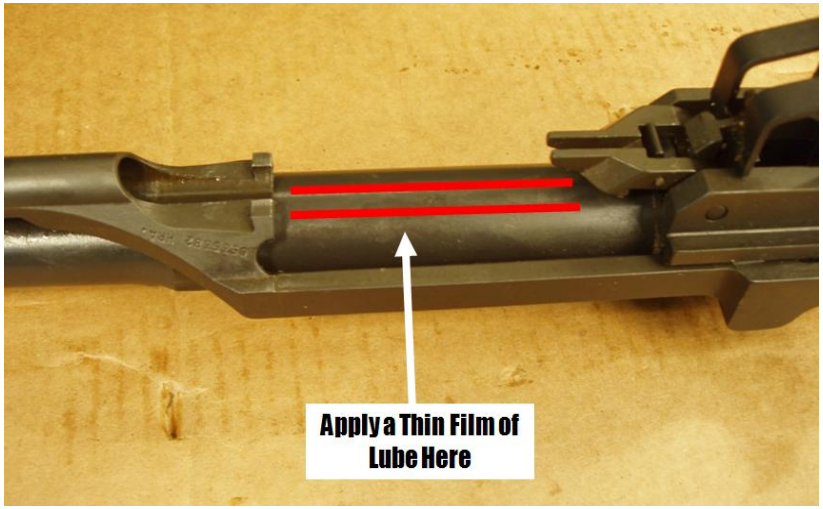

Figure 62. Lubrication

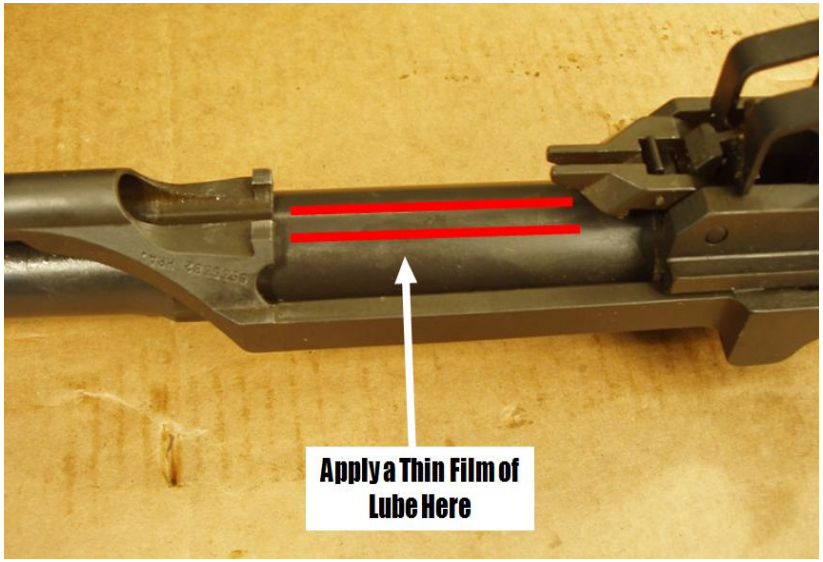

Figure 63. Lubrication

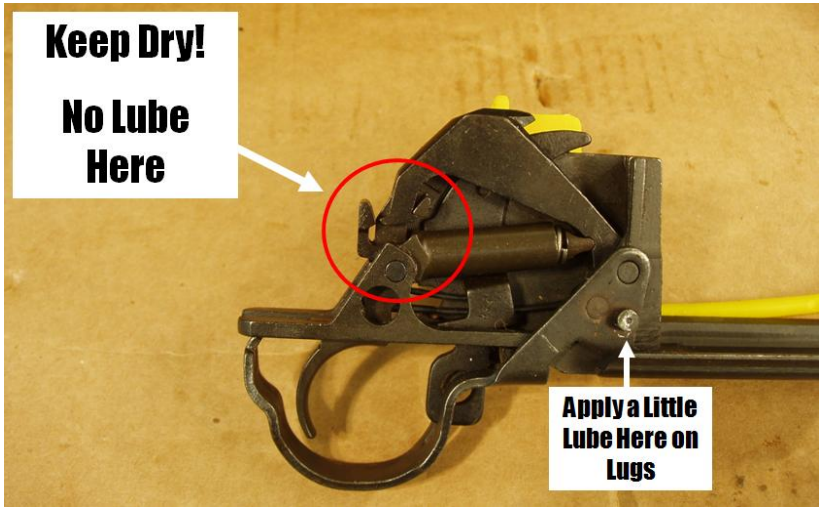

Figure 64. Lubrication

5.1.3 Equipment

5.1.3.1 Cleaning Equipment

1) Small arms .30 cal bore cleaning brush
2) Lubricant
3) Chamber cleaning brush
4) Cleaning rod

5.1.3.2 Blank Firing Adapter

The optimal vent hole size for a BFA is **0.172** inches. Blank firing adapters can be purchased pre-drilled to this size from commercial retailers. This BFA will typically result in the best performance of a M1 Rifle in good operating condition. Along with the rest of the weapon the BFA should be cleaned. Use a .22 caliber brush or similar device to clean the hole and a rag or brush to clean all available surfaces.

5.2 Cleaning the Rifle

The rifle should be thoroughly cleaned no later than the evening of the day it is fired, particularly if the weapon is not expected to be used within the next few days.

5.2.1 Chamber

Remove the patch holder from the cleaning rod and insert two patches about halfway through the slot. Dip the patches in bore cleaner, then wring or squeeze the excess fluid from the patches. Screw the commercially available cleaning rod together (less the patch holder) and insert it all the way into the bore. Flare the patches out, then, insert the patch holder with the wet patches into the chamber. Push the threaded end into the chamber until it touches the cleaning rod. Hold it there with one hand and screw the cleaning rod and the patch holder together. Pull the patches to the chamber; at the same time turning the rod clockwise. Turn the rod several times, wiping the chamber thoroughly. After the chamber has been thoroughly cleaned use the chamber brush in the following manner:

1) Screw a section of the commercially available cleaning rod into a threaded hole of the driver ratchet.
2) Place the brush into chamber of the barrel.
3) Allow the rifle bolt to close slowly against the end of the driver ratchet.
4) Using the rod section as a handle, rotate the driver clockwise and counterclockwise to loosen and clean residue from the chamber.
5) Insert a dry patch in the patch holder and insert into the chamber to remove any excess bore cleaner.

5.2.2 Bore

To clean the bore, saturate the bore brush with cleaning compound solvent (rifle bore cleaner) and:

1) Insert the bore brush into the chamber. Insert the cleaning rod into the bore and screw the brush onto the rod.
2) Pull the brush through the bore. Remove the brush and repeat the procedure as often as required to clean the bore.
3) Then use one cleaning patch dampened with bore cleaner in the following manner:
   a. Place the patch in the patch holder and insert it into the chamber.
   b. Insert the cleaning rod (less the patch holder) into the bore and screw it onto the patch holder.
   c. Pull the cleaning rod through the bore. Repeat this procedure using as many patches as required until the patches come through the bore clean.
4) Remove the excess bore cleaner in the following manner:
   a. Place a dry patch in the patch holder and insert it into the chamber.
   b. Insert the cleaning rod (less the patch holder) into the bore and screw it onto the patch holder.
   c. Pull the cleaning rod through the bore. Repeat this procedure using as many patches as required until the patches come through the bore clean.

5.2.3 Gas Cylinder Lock Screw Assembly

Remove carbon deposits by using bore cleaner then wipe the part and oil it lightly (do not use abrasives). Check the valve to see that it is not held open by particles of dirt or sand.

5.2.4 Piston Operating Rod

Remove carbon from the piston with bore cleaner. Take care not to damage the piston. Oil it lightly after cleaning (do not use abrasives).

5.2.5 Gas Cylinder

Clean the gas cylinder with bore cleaner and patches. Once complete, the bore cleaner must be removed with dry, clean patches or a clean cloth.

5.2.6 Face of the Bolt

Clean the face of the bolt with a patch and bore cleaner, paying particular attention to its inside edges. Remove the bore cleaner with dry patches and oil the part lightly.

5.2.7 All Other Parts

Use a dry cloth to remove all dirt or sand from other parts and exterior surfaces. Apply a light coat of oil to the metal parts.

5.3 Routine Maintenance

5.3.1 Daily Inspection

When in use, the rifle should be inspected daily for evidence of burred, worn, or cracked parts, rust and general appearance. A light coat of oil (any protective lubricant) should be maintained on all metal parts.

6.0 Ammunition

6.1 Ordering Ammunition

1) Only authorized organizations that have been issued weapons through the Ceremonial Rifle Program managed by the United States Army Tank-automotive and Armaments Command (TACOM) located in Warren MI are authorized to order and receive blank ammunition or ammunition clips.

2) The request to order .30 Caliber blank ammunition and clips can be sent either by letter, e-mail, fax or phone call –NOTE: A new form needs to be requested each time an organization needs to order blank ammunition or clips. For authorized civilian and veterans organizations, forms (as well as the ammunition shipment itself) are sent to the appropriate officer's /individual's residential address and not the organization. For Law Enforcement and Public Safety related organizations the forms (and ammunition shipments) are sent to the organization.

3) The request for issue of ammunition should be directed to:

US Army Joint Munitions Command
Attn: AMSJM-CDS
1 Rock Island Arsenal
Rock Island, IL 61299-6000

Point of Contact:
Dawn Folland
E-mail: Dawn.L.Folland.civ@mail.mil
TOLL FREE: 877-233-2515 or Commercial 309-782-4608
FAX: 309-782-7292/309-782-1776

4) Quantity ordered is limited to 2 boxes or 2,480 rounds. Ammunition is packed: 1,240 rounds in 2 metal ammunition containers over-packed inside a wooden box.

5) **No payments are required. Ammunition and Clips are provided free of charge to authorized organizations (Shipping and Handling fees are not required).**

6) Organizations will be notified by letter of the approximate shipment date of your ammunition/clip order. Allow 6-8 weeks for delivery after Rock Island receives and processes your order.

7) All ammunition is shipped via Federal Express (FEDEX) from the Lake City Army Ammunition Plant, Independence, MO. Normal FEDEX delivery will be Monday through Friday between 9:00 AM and 5:00PM. A signature will be required upon receipt.

6.2 Authorized Ammunition

DO NOT FIRE:
SERIOUSLY CORRODED AMMUNITION OR DENTED CARTRIDGES

ONLY .30 CALIBER M1909 BLANK AMMUNITION OBTAINED FROM THE JOINT MUNITIONS COMMAND IS AUTHORIZED TO BE FIRED THROUGH THE M1 GARAND RIFLE

BLANK AMMUNTION SHOULD NOT BE FIRED TOWARD PERSONNEL

DO NOT LUBRICATE AMMUNITION UNDER ANY CIRCUMSTANCES

IF AMMUNITION IS WET OR DIRTY, WIPE IT OFF WITH A RAG PRIOR TO USE; DUST AND OTHER ABRASIVES THAT COLLECT ON OILY AMMUNITION ARE DAMAGING TO OPERATING PARTS OF THE GUN

DO NOT FIRE THE M3 GRENADE CARTRIDGE

1) If an organization's ammunition source is unknown that ammunition should be inspected for the

presence of the .30 Caliber M3 Grenade Cartridges. The grenade cartridge generates more pressure than the M1909 .30 Caliber Blank Cartridge and is not designed or intended to be fired with a blank firing adapter. The significant physical difference between the Grenade Cartridge and the Blank Cartridge is that the Blank Cartridge has 6 crimps and the Grenade Cartridge has 5 crimps (See fig 65 and 66).

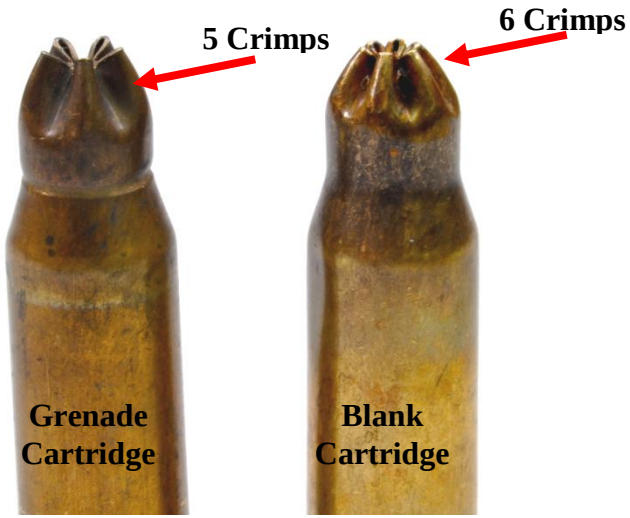

Figure 65. Grenade Cartridge vs. Blank Cartridge

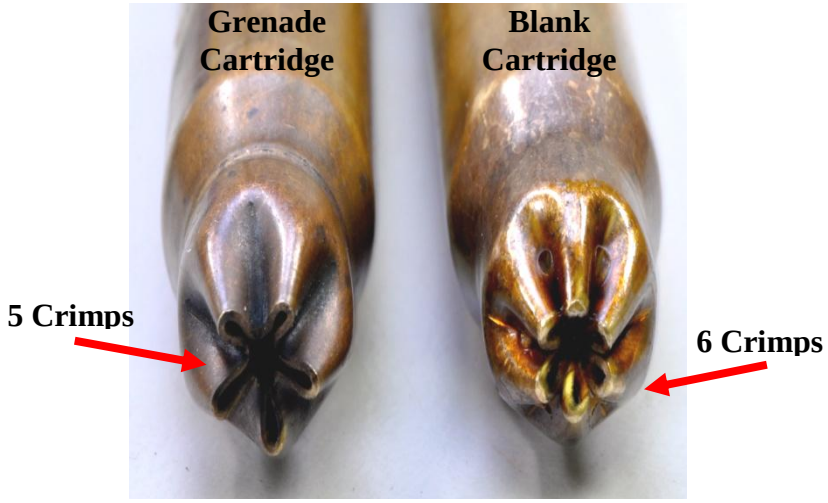

Figure 66. Grenade Cartridge vs. Blank Cartridge

7.0 Comments, Questions and Suggestions

7.1 Comments, questions or suggestions with regards to this maintenance guide should be forwarded to the following:

US Army
Armament Research Development and Engineering Center
Attn: RDAR-EIL-LA
Picatinny Arsenal NJ, 07806-5000

Point of Contact:
Telephone: 973-724-3056 Fax: 973-724-4633
E-mail: usarmy.pica.ardec.list.publication-change-notification@mail.mil