FMFRP 0-11A

M40A1 Sniper Rifle

7.62 mm

U.S. Marine Corps

PCN 140 000110 00

DEPARTMENT OF THE NAVY
Headquarters United States Marine Corps
Washington, DC 20380-0001

13 April 1989

FOREWORD

1. PURPOSE

Fleet Marine Force Reference Publication (FMFRP) 0-11A *M40A1 Sniper Rifle, 7.62 mm*, provides information on the operation and maintenance of the M40A1 sniper rifle.

2. SCOPE

This reference publication provides the rifle user information on the authorized procedures for operation and maintenance of the M40A1 sniper rifle and its optics. This manual should be used in conjunction with FMFM 1-3B, *Sniping*.

3. SUPERSESSION

None

4. CHANGES

Recommendations for improvements to this publication are encouraged from commands as well as from individuals. Forward suggestions using the User Suggestion Form format to—

Commanding General
Marine Corps Combat Development Command (WF 06)
Quantico, Virginia 22134-5001

5. CERTIFICATION

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

M. P. SULLIVAN
Major General, U.S. Marine Corps
Deputy Commander for Warfighting
Marine Corps Combat Development Command
Quantico, Virginia

DISTRIBUTION: TJH

USER SUGGESTION FORM

From:

To: Commanding General, Marine Corps Combat Development Command (WF 06), Quantico, Virginia 22134-5001

Subj: RECOMMENDATIONS CONCERNING FMFRP 0-11A, *M40A1 SNIPER RIFLE, 7.62 mm*

1. In accordance with the Foreword to FMFRP 0-11A, which invites individuals to submit suggestions concerning this FMFRP directly to the above addressee, the following unclassified recommendation is forwarded:

Page	Article/Paragraph No.	Line No.	Figure/Table No.
____	_____	_____	_____

Nature of Change: ☐ Add ☐ Delete ☐ Change ☐ Correct

2. Proposed New Verbatim Text: (Verbatim, double spaced; continue on additional pages as necessary.)

3. Justification/Source: (Need not be double spaced.)

NOTE: Only one recommendation per page.

Record of Changes

Change No.	Date of Change	Date of Entry	Organization	Signature

(reverse blank)

M40A1 Sniper Rifle
7.62 mm

Table of Contents

WARNING!

BEWARE OF DANGEROUS PROCEDURES

DO NOT exchange or switch bolt assemblies from one M40A1 to another. Doing so may result in your injury or death.

Use only authorized ammo that is manufactured to U.S. or NATO specifications.

If your rifle stops firing with a live round in a hot barrel (misfire), remove the round immediately. If this is not possible, wait approximately 15 minutes for the barrel to cool. Ensure that during this time you keep the muzzle pointed in a safe direction.

Keep your face away from the ejection port while clearing a hot chamber.

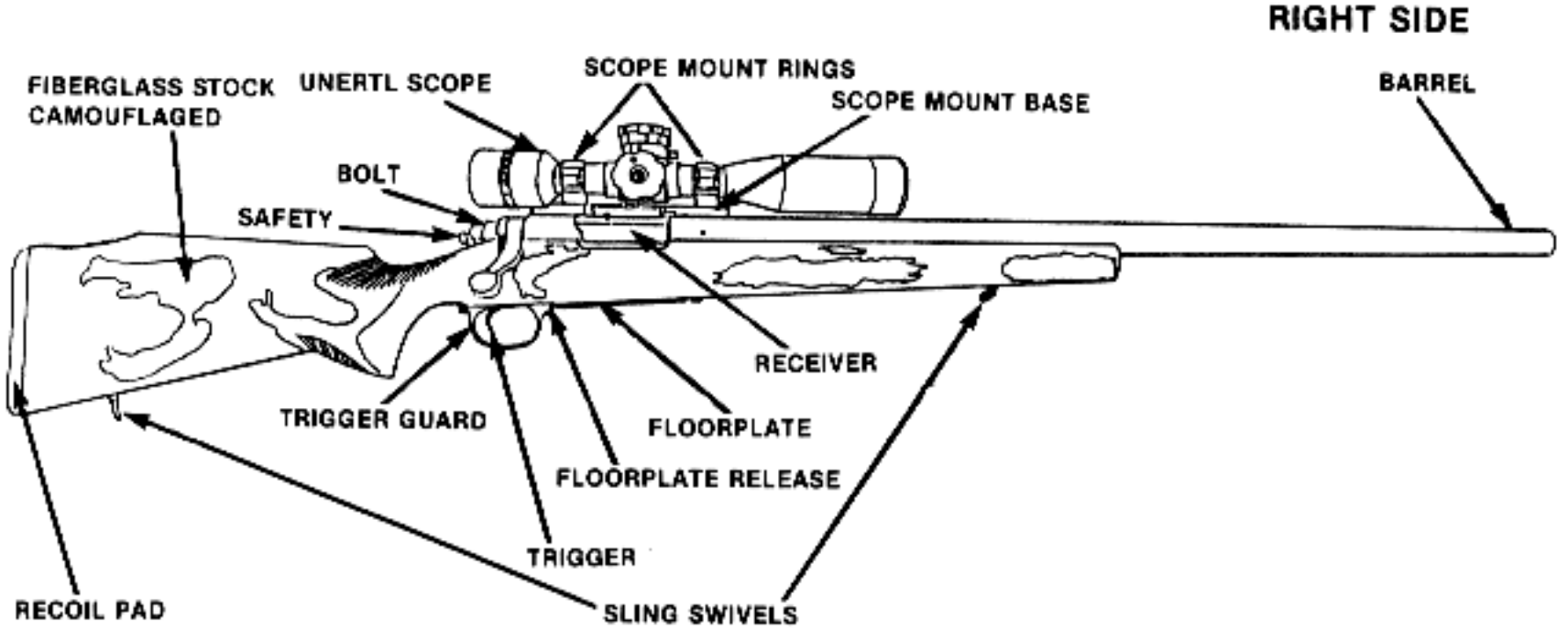
If there is water in the barrel, do not fire the sniper rifle as the steam/smoke may give away your position. Also, the weapon may malfunction and explode.

If a noticeable difference in sound or recoil is experienced, STOP FIRING. Either condition could indicate an incomplete powder burn and/or a bullet stuck in the bore.

Facts About Your Sniper Rifle

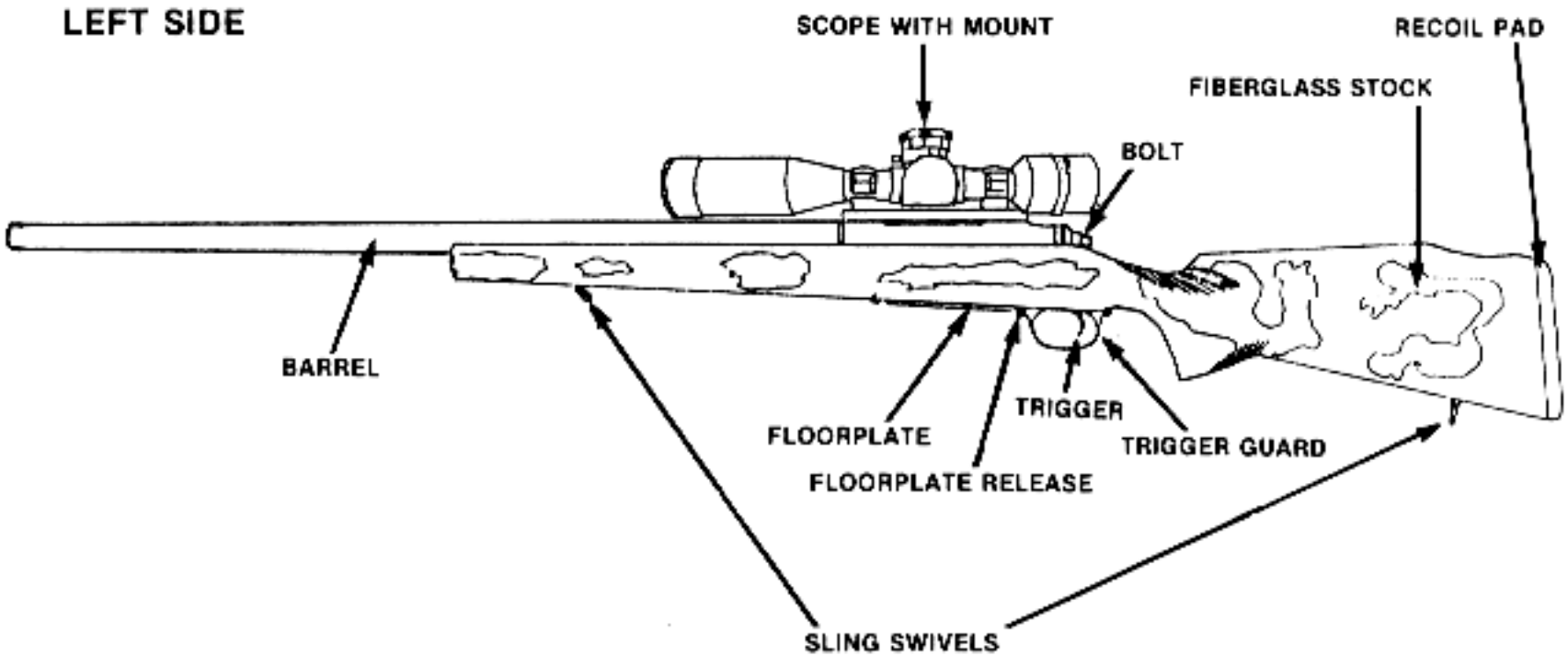
The M40A1 sniper rifle is a bolt action, magazine-fed, shoulder-fired weapon with the following characteristics:

- Overall length ..... 44 inches
- Caliber ..... 7.62 mm NATO
- Muzzle velocity ..... 2550 feet per second
- Maximum effective range ..... 1,000 yards



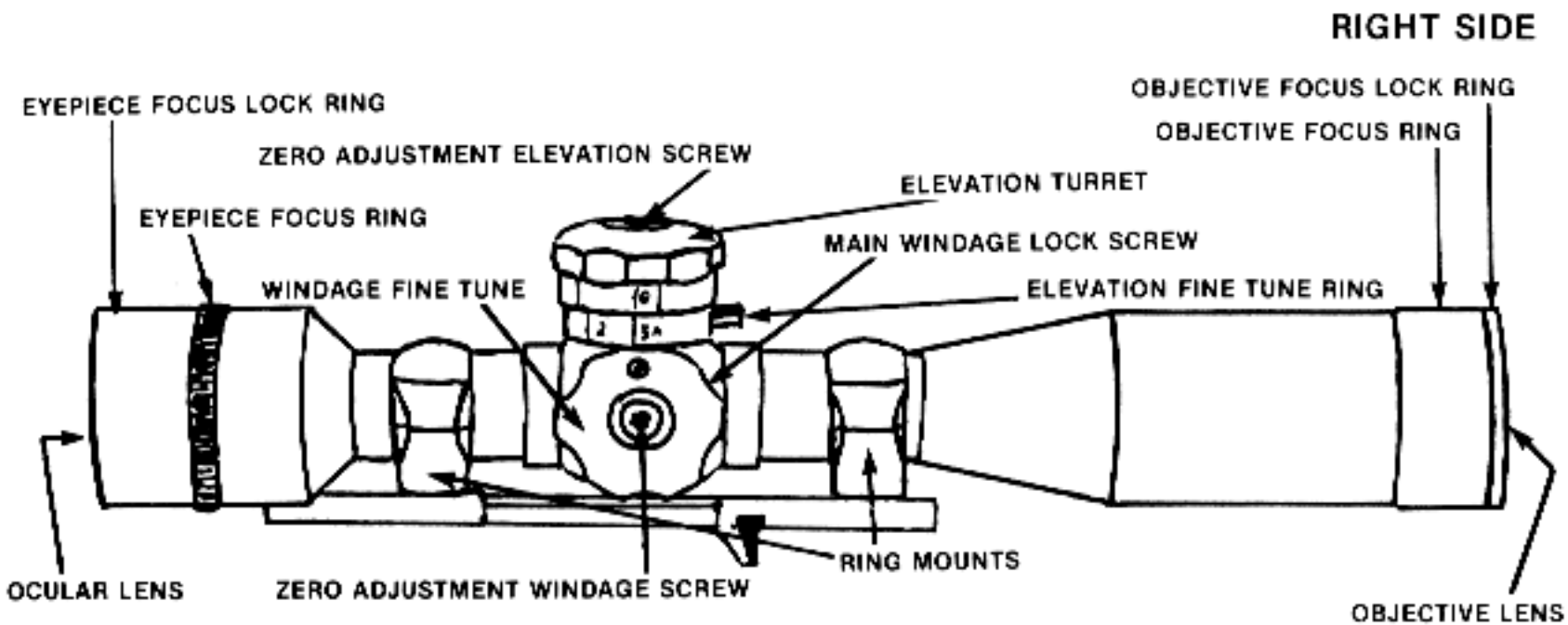
- Chamber pressure ..... 50,000 psi
- Magazine capacity ..... 5 rounds
- Weight complete ..... 14½ pounds (approx)
- Telescope ..... 10 power
- Weight of telescope ..... 2 pounds
- Barrel twist ..... 1 turn in 12 right-hand twists
- Stock ..... Fiberglass w/epoxy filler
- Barrel length ..... 24 inches

LEFT SIDE

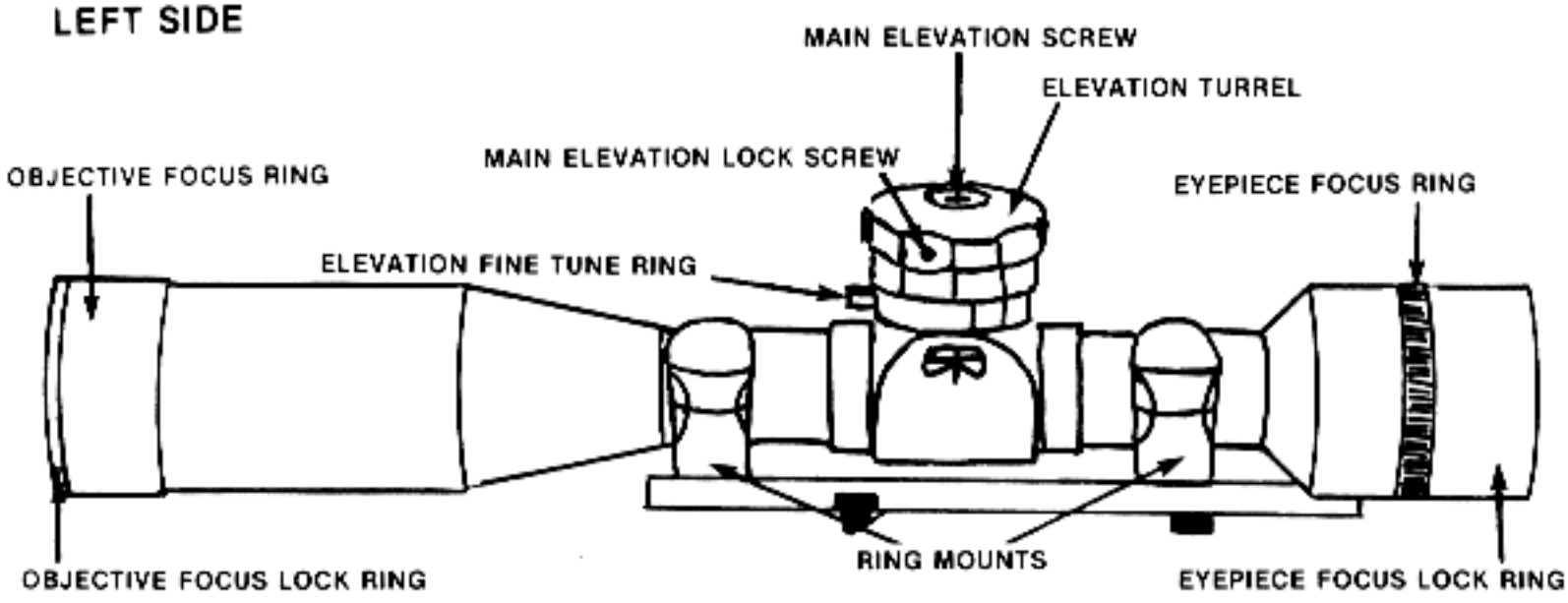


The M40A1 is equipped with a fixed 10-power Unertl sniper scope with the following characteristics:

- Length ..... 12½ inches
- Eye relief ..... 3 inches (fixed)
- Elevation and windage ..... ½ minute
- Main elevation ..... Ballistic comeups M118 match ammunition, 7.62



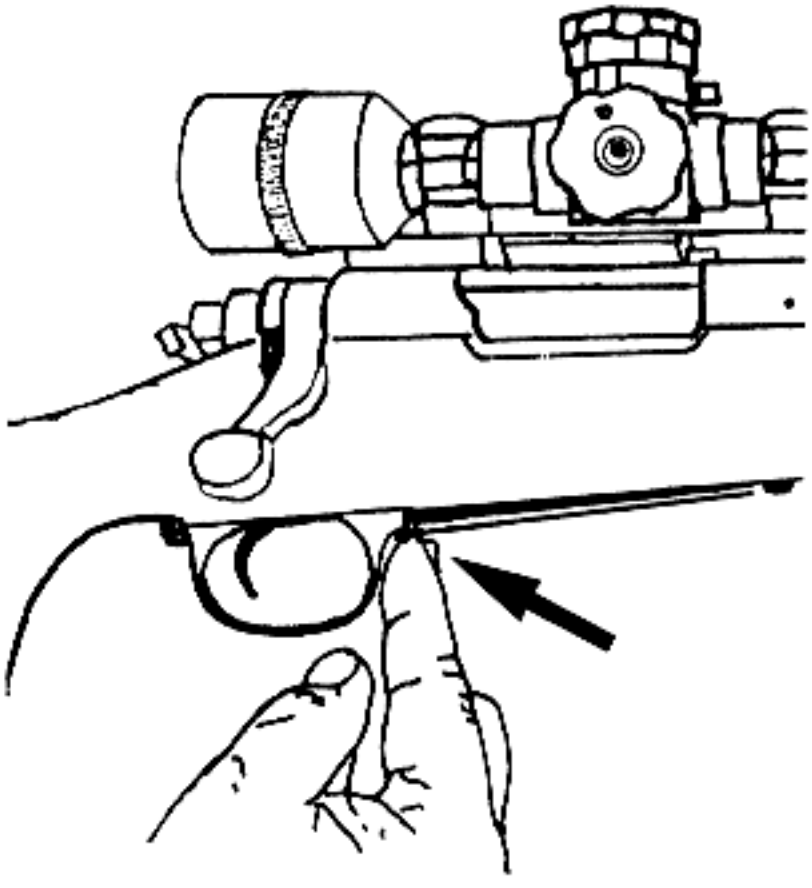
- Fine Tune Elevation ..... ±3 minutes to adjust for temperature elevation, ammunition, and zero changes.
- Windage ..... ±4½ minutes
- Steel tube with dull black chrome finish.
- Reticle ..... Mil dot duplex for range estimation and engaging moving targets.
- Lenses .... HELR coated, gathers over 92 percent of ambient light.
- Scope allows shooter to shoot point of aim/point of impact back to 1,000 yards.



Disassembly

Safety. Push the safety lever forward on the right side of the receiver for FIRING and fully to the rear for SAFE.

Magazine Release. To release live rounds from the magazine, open the floor plate to allow the rounds to drop from the rifle. Push the magazine release toward the rear of the rifle until the floor plate releases.



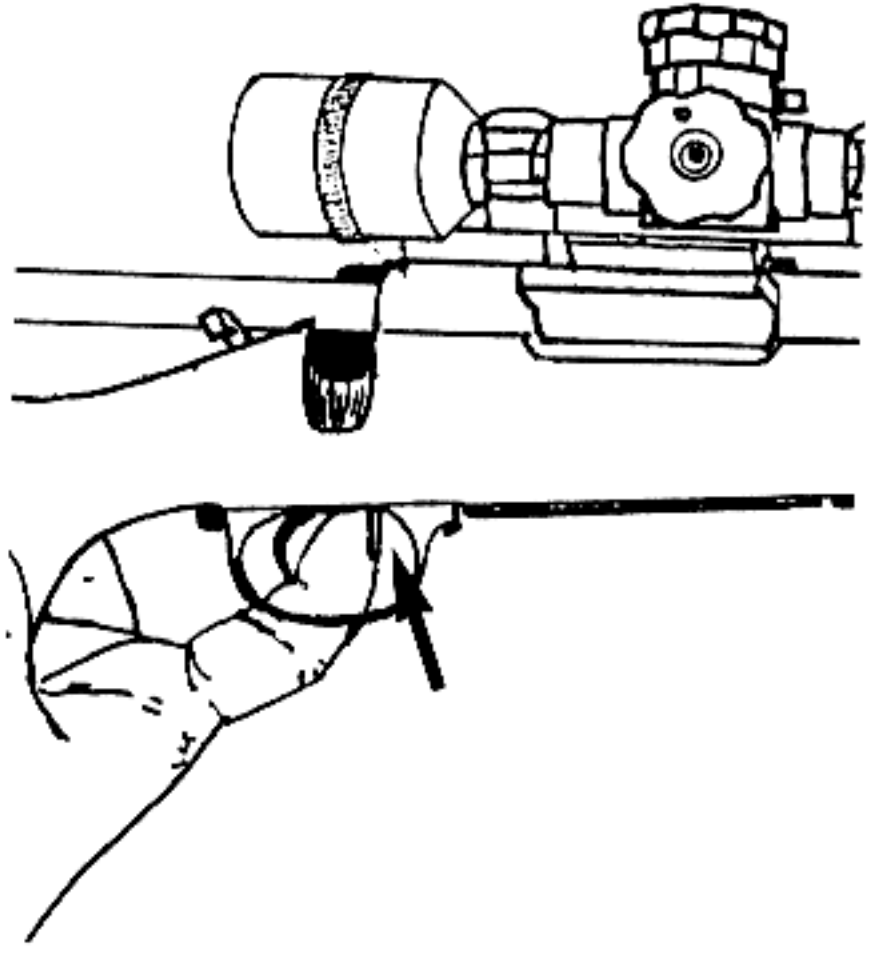
Magazine Release.

Bolt Handle. The bolt handle is located on the right side of the receiver.

- To unlock the bolt, rotate the bolt handle upward and to the rear.
- The upward rotation of the bolt also cocks the bolt.

Bolt Release. The bolt release is located inside the trigger guard and forward of the trigger.

- Depress the bolt release lever.
- Pull the bolt to the rear and out of the receiver at the same time.



Trigger. The trigger is located in the bottom of the stock, immediately below the bolt handle. To fire the rifle, squeeze the trigger to the rear.

Removing the Bolt. Ensure that you have a completely safe weapon.

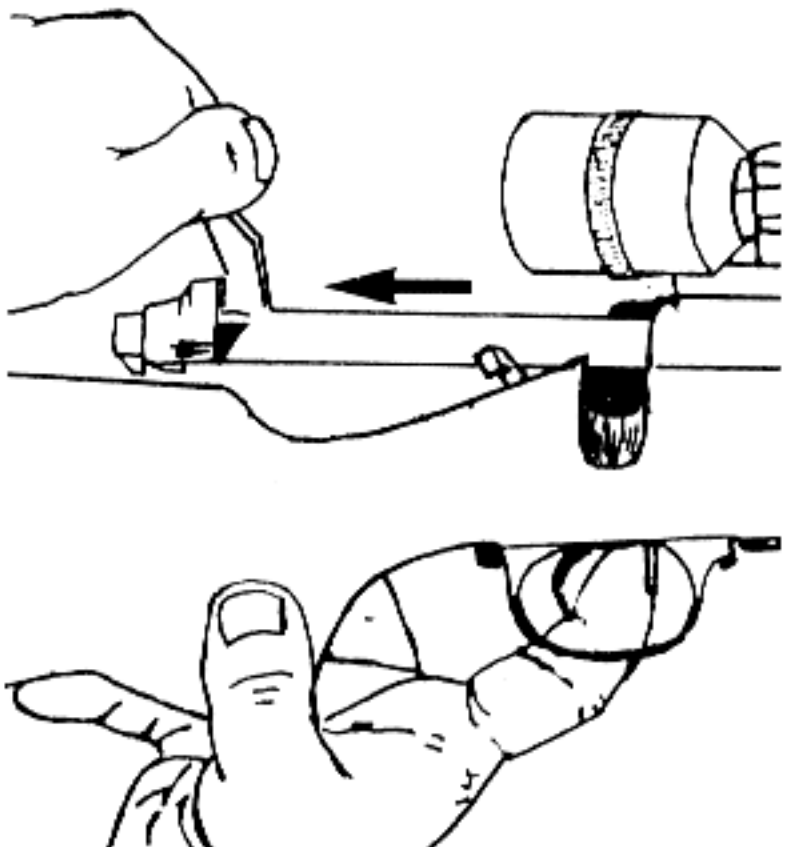
In a designated SAFE area, operate the bolt to the rear. Visually and physically check the chamber for any LIVE rounds.

- Depress the bolt release lever.
- At the same time, remove the bolt by pulling it straight to the rear and out of the receiver.

Removing the Magazine. The magazine release is located directly in front of the trigger guard.

- Depress this lever and the magazine floor plate will drop open.
- Remove the magazine follower by sliding it out of the floor plate.

NOTE: An 8541 is NOT authorized to disassemble the bolt or to remove the receiver from the stock for cleaning at any time. This is done by 2112s or authorized 2111s.



Removing the Bolt.

Inspection

Inspect your rifle to determine the need for repair, cleaning, and lubrication. A weapon in a garrison or combat environment is affected by dirt, moisture, and corrosion and must be thoroughly cleaned on a daily basis. Always inspect your rifle prior to a mission.

Before you start to clean, clear and check your weapon.

Starting at the muzzle

- Check crown for dents.
- Check bore for pits and cleanliness.
- Check barrel for bulges.

Scope

- Scope rubber serviceable.
- Objective lens lock ring tight.
- No scratches on objective lens or condensation on the inside of the lens.
- Turrets rotate smoothly and don't wobble.
- O-rings not missing or split.
- Eye piece lock ring tight.
- No scratches on eye piece lens or condensation on the inside of the lens.
- Scope snug and straight in mounts.
- Crosshairs not broken, all mil dots present (4 each direction).
- Mounting screws tight.

Receiver

- Remove the bolt. Did bolt lock move freely?
- Extractor clean and not worn.
- Receiver and magazine well cleaned.
- Floor plate opens and closes easily.
- Allen torque screws not rounded off.
- Insert bolt, should operate smooth with no binding.
- Safety on, pull trigger. Did safety work?
- Safety off. Did hammer fall?
- Pull trigger, no creep or hair trigger. If you think the trigger pull is too light or heavy, take it to a 2112 armorer.
- Safety lever should not be loose.

Stock

- Check stock and bedding for cracks.
- No solvent seeping from receiver onto bedding surface.
- No material between stock and barrel.
- Sling swivels tight.
- Butt pad serviceable.

Repairing the Rifle

Repair of the M40A1 is the responsibility of a rifle team equipment repairman, MOS 2112. The battalion 2111 may not make repairs to the weapon other than to remove the action from the stock for cleaning, and then replace it using a torque wrench.

You have no authority to disassemble your rifle except for the most superficial repair tasks, such as tightening loose screws or removing the bolt. The only tools available are the scope adjustment tools. Do not remove or tighten the torque screws that hold the action to the stock, as they are tightened to a specific torque setting.

Cleaning the Rifle

Improper cleaning can cause just as much damage to your rifle as not cleaning it at all. Clean it properly, and it will function correctly. Authorized materials for cleaning the M40A1 are—

- Cleaning patches.
- Camel's-hair brush (for lenses).
- Bore brush, .30 caliber.
- Bore brush, .45 caliber.
- Bore cleaner.
- Lubricant, medium.
- Lubricant, light.
- Brush, all-purpose.
- Lens paper, optical.
- Antifog compound.
- Cleaning rod, brass.
- Bore guide.
- Cleaning rod, .45 caliber.

Specific material NOT to be used.

- Steel sectioned cleaning rod.
- Dry cleaning solvent.
- WD-40.

When to Clean the M40A1.

Before Firing

The rifle MUST ALWAYS be cleaned prior to departing on a mission or firing the weapon on a range. If not cleaned prior to firing, the extra solvent or lubrication remaining in the bore will cause a puff of smoke or steam, and possibly allow detection by the enemy. Also, the extra fluids cause an increase in chamber pressure that cause an increase in elevation of the first round fired.

After Firing

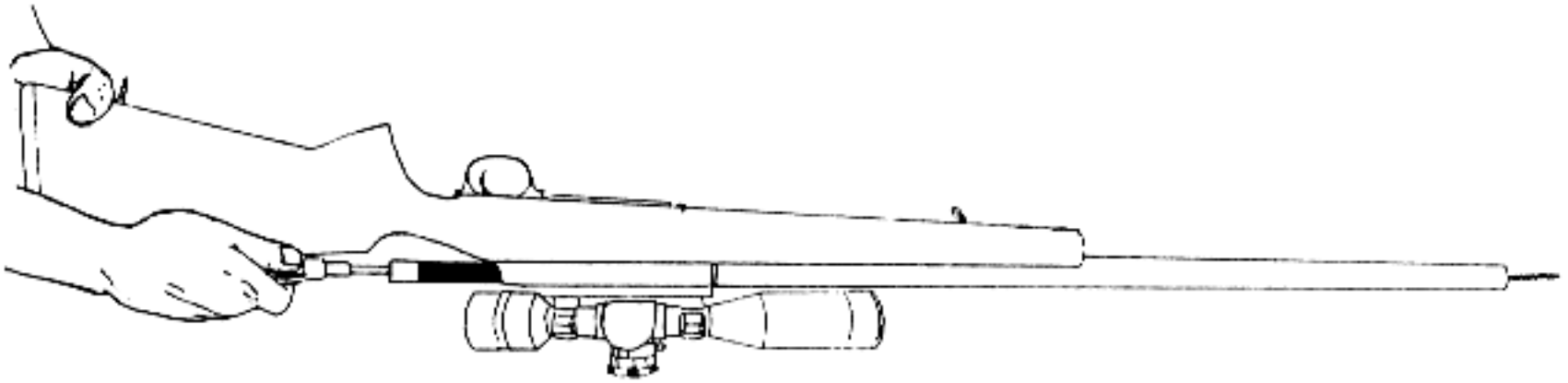
The rifle must be cleaned after it is fired because firing produces deposits of primer fouling, powder residue, carbon, and metal filings. These deposits collect moisture and cause rust. Although modern ammunition has a noncorrosive primer which makes cleaning easier, the primer still leaves a deposit. The rifle must be cleaned within a reasonable time interval (a couple of hours) after completion of firing. Repeated firing will not injure the rifle if it is properly cleaned prior to the first round. After a weapon has been fired, it must be cleaned for at least three consecutive days. For several days after firing, check the rifle for signs of corrosion and fouling by running a clean patch through the bore. Graphite and carbon deposits will sweat from the pores of the metal for three days, thus the need for repeated cleaning.

How to Clean the M40A1

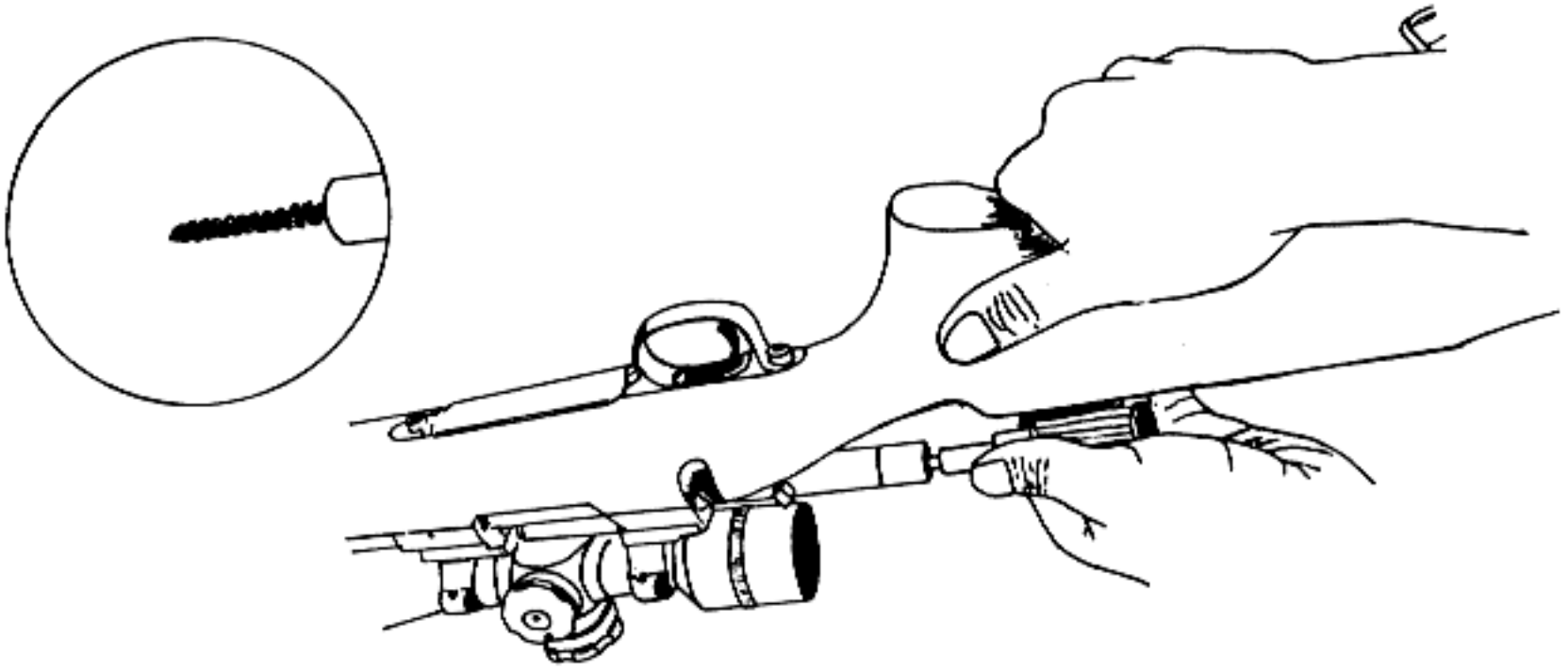
When cleaning the rifle, be careful not to damage the scope lens or the barrel's crown and chamber. If you adhere to the following procedures, you won't have any problems.

The Bore

- When cleaning, always keep the muzzle end lower than the receiver to prevent solvent from running into the trigger housing.
- Do not allow solvent to work its way into the bedding surface, as this will slowly damage the bedding and cause the accuracy to suffer.
- Remove the bolt by depressing the bolt release located between the front of the trigger guard and the trigger.
- Pull the bolt straight to the rear.
- Replace the bolt with the bore guide.



- Use a brass cleaning rod and push a .30 caliber bore brush dipped in solvent through the bore from the receiver end. Push the brush all the way through. Never clean the M40A1 from the muzzle end as you may damage the crown.
- Repeat this procedure at least two times per round fired.
- Never use a steel cleaning rod.
- Run cleaning patches through the bore from the receiver end, once again using your bore guide.
- Push the patch all the way through the bore and pull back through.
- Repeat this procedure with a clean patch until the patch comes out clean.



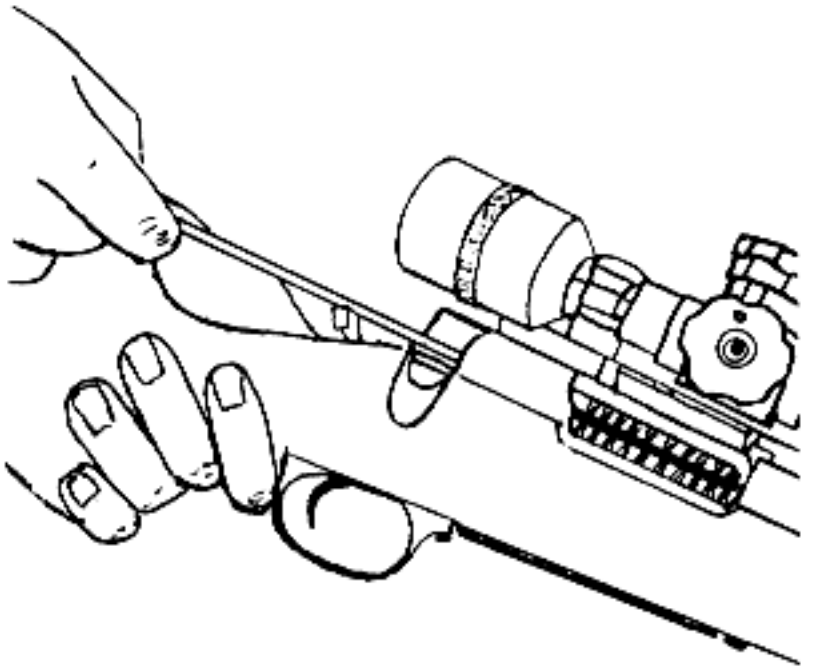
The Chamber

- Attach a .45 caliber bore brush to the pistol rod.
- Remove the bore guide and insert the .45 caliber brush into the chamber with a twisting motion.
- Continue rotating the brush a mimimum of 10 times. As you remove the brush, continue to rotate.
- Do not *scrub* the chamber with an in and out motion. This will raise burrs in the chamber and can result in spent brass getting stuck in the chamber.
- To dry the chamber, wrap a patch around the .45 caliber brush and, using the same rotating motion as before, insert it into the chamber and rotate 4-5 times.
- Change to a clean patch and repeat until a patch comes out clean and dry.

The Bolt. Use your all-purpose brush (or toothbrush) and scrub the entire bolt with an authorized solvent/lubricant. Pay particular attention to the face of the bolt. Be sure to remove all primer residue and to clean underneath the extractor.

The Receiver. The receiver, floor plate, sling swivels, magazine follower and spring, trigger, and trigger guard should all be scrubbed down using an authorized solvent/lubricant and the all-purpose brush.

The Stock. Clean the stock with a damp rag. Be sure water does not work its way into the action.



Cleaning the Chamber.

How to Lubricate

Normal. For temperate environments, lightly coat all metal parts with a lubricant. Lightly lubricate the bolt with rifle grease around the locking lugs and put a drop of lubricant in the V-shaped notch by the bolt handle. These are high friction points which require extra care.

Cold Weather. In freezing tempreatures, apply only lightweight oils or graphite. Heavy oils will thicken and make bolt operation sluggish. Store all weapons at outside temperatures if they are to be used in cold weather. This will prevent condensation from forming when the cold rifle is brought into a warm room or tent. If the condensation is not removed in the warm area, it will freeze when taken back into the cold. If the rifle is to be cleaned in the warm area, allow it to warm up fully, remove the condensation, then clean it.

Hot, Humid Climate. In this type of climate, clean the weapon daily to protect it from moisture and rust. Check the telescope for fungus growth inside.

Salt Water Exposure. Salt water and a salt water atmosphere have extreme and rapid corrosive effects on metal. When operating in such an environment (on ship for example), inspect your rifle daily. The weapon, including the bore, should be well lubricated.

If the weapon is exposed to salt water, immediately rinse it in fresh water and give it a good thorough cleaning. Get it to a 2112 as soon as possible.

Desert Areas. In a desert environment, sand and sun are the rifle's enemies. If sand gets between moving parts, it acts as an abrasive and grinds the metal. Lubrications, such as grease or a light lubricant, help pick up and hold sand. Therefore, use only lighter weight oils and graphite in this environment. A sniper gun bag or the carrying case issued for the M40A1 will help.

Sniper Scope Maintenance

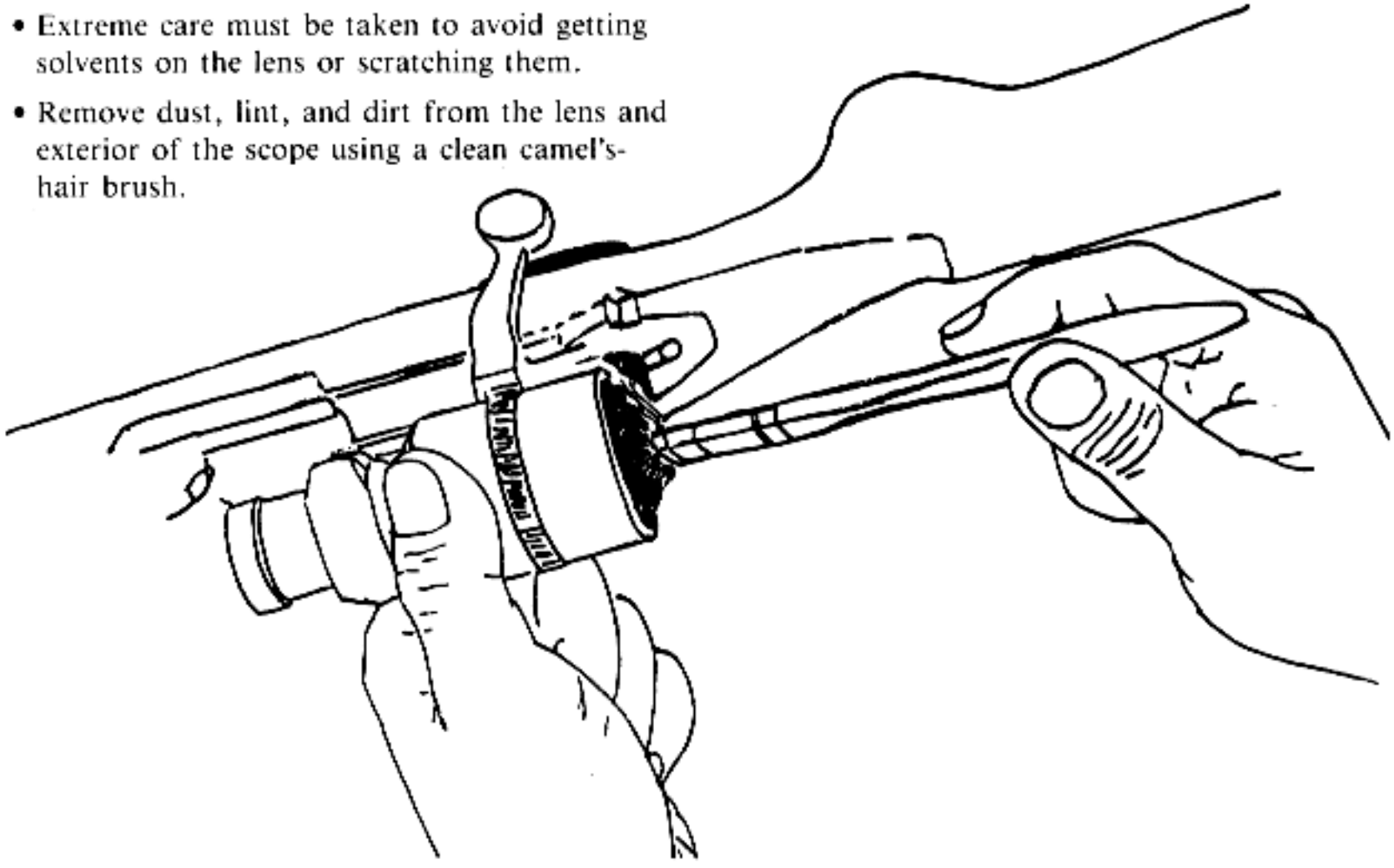
The scope must be protected from the elements when in use and from mistreatment in garrison and during training. It is designed to be a field scope, able to withstand accidental submersion in water and exposure to extreme hot and cold. It was never intended to be impervious to mistreatment.

To keep your scope in good shape, follow these procedures:

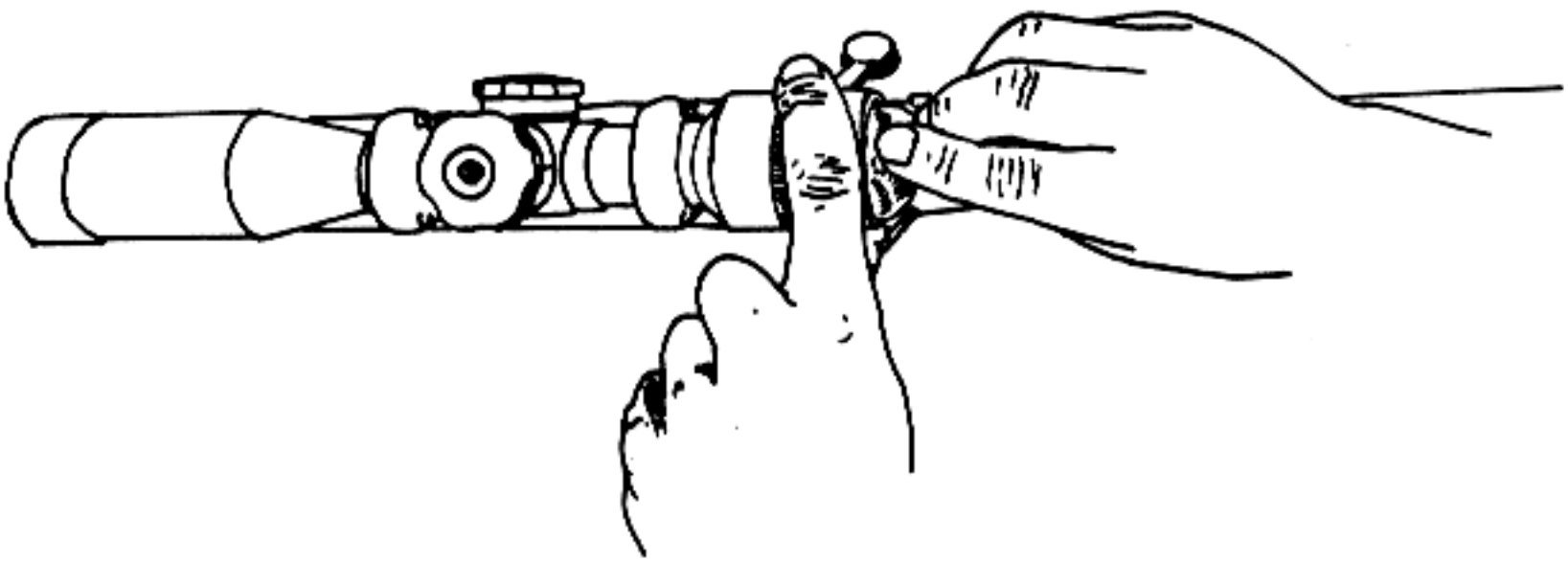
- When you store the rifle in the rifle case, place it with the scope nearest the handles. That way, if the case is dropped, the scope will not be damaged.
- When not stored in the armory, the scope cover should always be on.
- Do not store the rifle with scope rubber on. Moisture can collect and result in massive rust.
- Do not allow sunlight to shine directly through the scope. Light focused on the crosshairs and mil dots might warp them.
- When zeroing the scope, do not overtighten the lock screws or force the knobs.
- Keep the rubber O-rings serviceable. They alone keep dirt out of the ballistic inner workings of the scope turrets.
- When adjusting the scope, adhere closely to the scope adjustment procedures on pages 19 and 20 in this manual.
- Avoid breathing on lens in cold weather as they will frost up.

Cleaning Your Optics

- Extreme care must be taken to avoid getting solvents on the lens or scratching them.
- Remove dust, lint, and dirt from the lens and exterior of the scope using a clean camel's-hair brush.



- To remove smudges from the lens, breathe heavily on them and wipe off moisture with lens paper. If lens paper is not available, use a soft, clean, dry cloth.
- Keep all Allen screw fittings on sniper scope clear of mud and dirt. If fittings get clogged, use a safety pin to dig out the debris.
- Keep lens free of oil and grease. If there are fingerprints, oil spots, etc., on the lens, use rubbing alcohol with lens paper to remove. Pat the lens. Do not scrub.
- After cleaning, apply a light coat of lubricant to the scope body. If you can see the oil, it is too much.



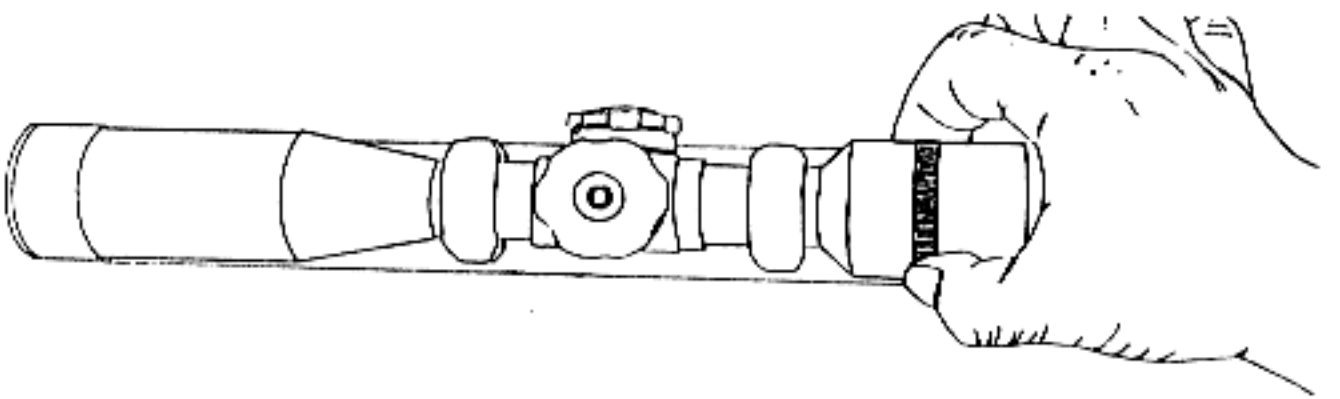
Scope Adjustment and Theory

Magnification and Light Gathering. The average unaided eye can distinguish an one-inch object at 100 yards. Using the sniper scope, detail of 1/10th inch can be distinguished, depending on color and background. This scope then has a 10-power magnification. The scope has a field of view of 10 feet at 100 yards. The lens are coated with magnesium fluoride, a special nonreflective coating. The military refers to this coating as HELR. HELR allows the scope to gather and transmit at least 92-93 percent of the ambient light to the sniper's eye.

Focusing the Scope. The scope is prefocused at the factory. However, since all human eyes are not the same, you must know how to adjust the focus correctly.

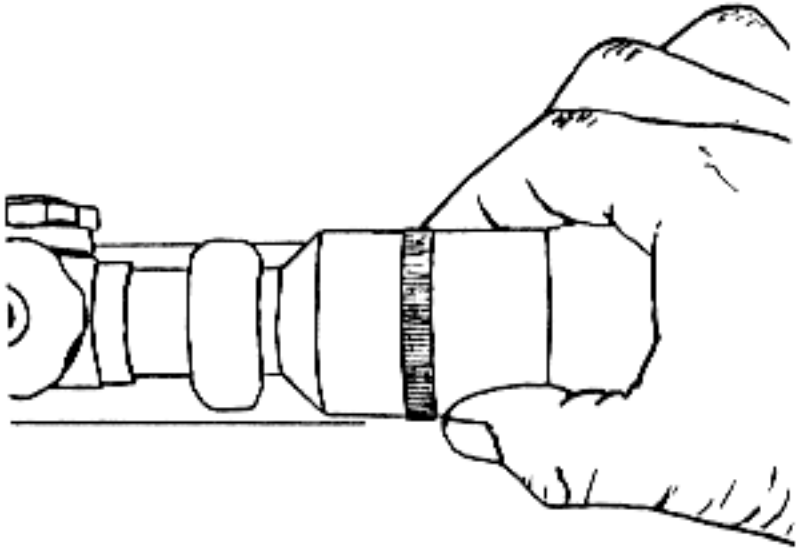
With proper focus, both target and reticle have maxium sharpness. To properly focus the scope, you must have an area where you can see 300 yards to a target, and a white card or piece of cloth. Take your time and follow these steps.

1. Place the weapon on a steady rest and loosen the eyepiece focus lock ring.



Loosen Focus Lock Ring.

2. Point the scope at the sky, wall, or card, and turn the focus ring until the reticle is sharp and distinct.



Turn Focus Ring.

3. When adjusting the focus, turn the ring back and forth through the focus point until you have the clearest possible focus.

4. Now, look away at some distant (300 yards) item/target and focus on it with just your eyes.

5. With your eyes focused for distance, quickly look into the scope at the reticle. It should appear clear and sharp.

6. If the reticle appears blurred, then it is not adjusted properly and must be adjusted again.

7. Repeat steps 2-6 as many times as required until the reticle is clear and sharp.

8. When the reticle is properly adjusted, hold the focus ring with one hand and tighten the locking ring firmly. Ensure that the focus ring does not turn.

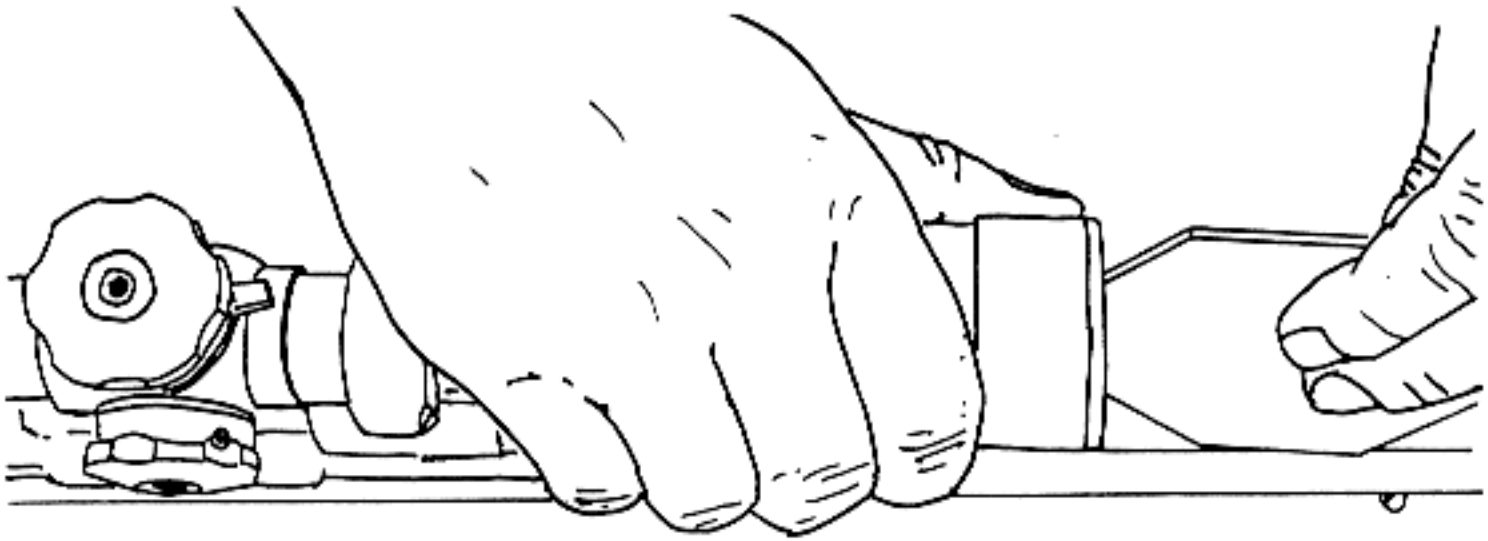
Once you have focused the reticle, do not touch it again. Still using your target at 300 yards, look through the scope and see if the target is clear in your scope. If not, parallax is present.

Parallax. It is the apparent movement of the reticle across the target when the position of the head is moved. To check for parallax—

- Place the rifle on a steady rest and sight on your target 300 yards away.
- Without touching the rifle, look through the scope at the target.
- Slightly move your head side to side, or up and down, watching for movement of the target in your field of view.
- If movement is seen or the target is not clear, parallax is present and MUST be adjusted.

Adjusting Parallax

- Lie prone behind the weapon and have your partner loosen the objective focus lock ring with the spanner wrench. It is not necessary to loosen the ring more than ¼ to ½ turn.



Loosen Ring With Spanner Wrench.

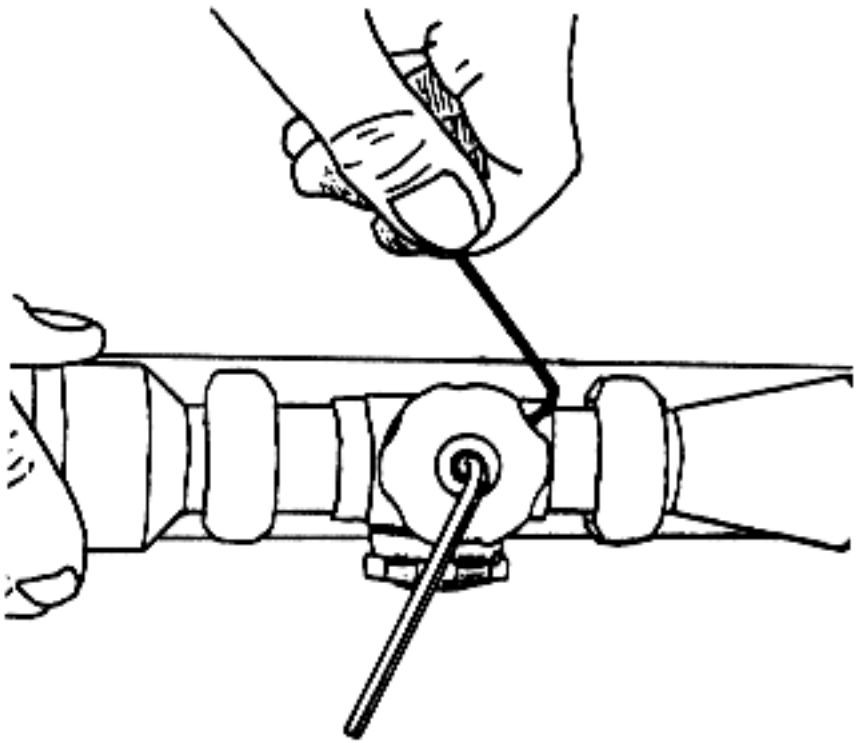
- While looking through the scope, have your partner turn the focus ring ¼ turn one way or the other, then snug the locking ring back down. Check for parallax again. If it is not present at this point, leave scope as is. If it is still present, repeat the steps, and retest for parallax.
- If you see no change occurring within ½ to ¼ turn, STOP. Adjust in the opposite direction.
- Snug down the locking ring during each adjustment. Otherwise the objective lens will *float*.
- With the scope adjusted in this manner (300 yards), parallax is not present and is only slightly apparent at ranges of 800-1000 yards.
- If the shooting range is less than 300 yards (urban terrain), adjust your scope at that range (100-200 yards). At closer range, parallax is more apparent, and pinpoint accuracy is needed in urban environments.

Zeroing the Scope

With the sniper scope properly adjusted, zero your rifle.

300-Yard Method

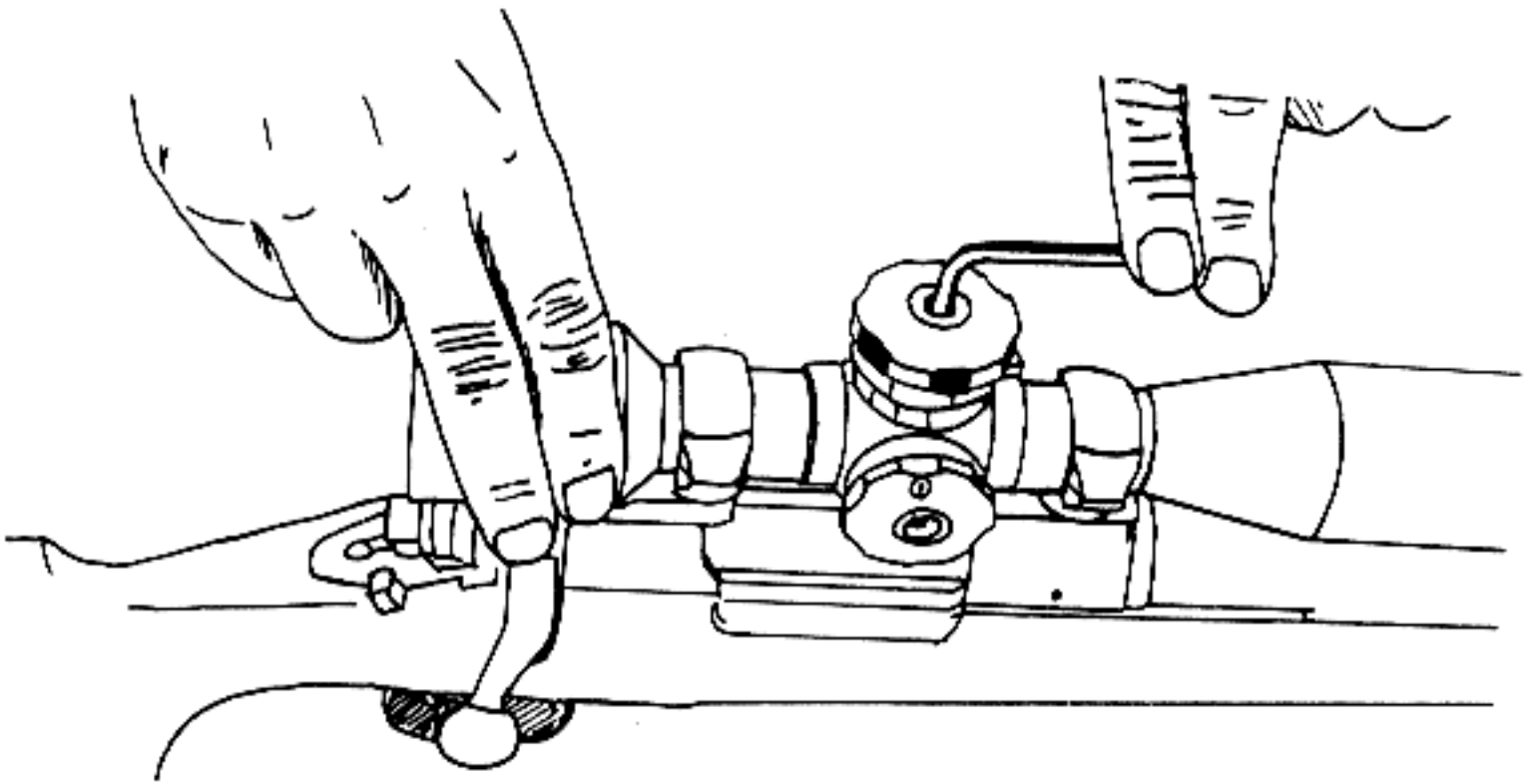
- Set the elevation knob to 3 for 300 yards.
- Set the windage and elevation fine tune knobs to 0, unless there is an apparent wind. Then you would dial on the proper setting.
- Fire a 3-shot group at 300 yards.
- Calculate the distance needed to move the point of impact to coincide with the point of aim.
- Once this has been determined, loosen the small Allen set screws located on the side of the turrets.
- Using the large Allen wrench, adjust the point of impact to the point of aim. Do not overadjust! The scope should not require more than ⅛ to ¼ turn to zero.



Loosen Allen Set Screw.

- Once you have adjusted the scope, retighten the set screws and fire another 3-shot group.
- Repeat the last four steps until you have a perfect point of aim/point of impact.

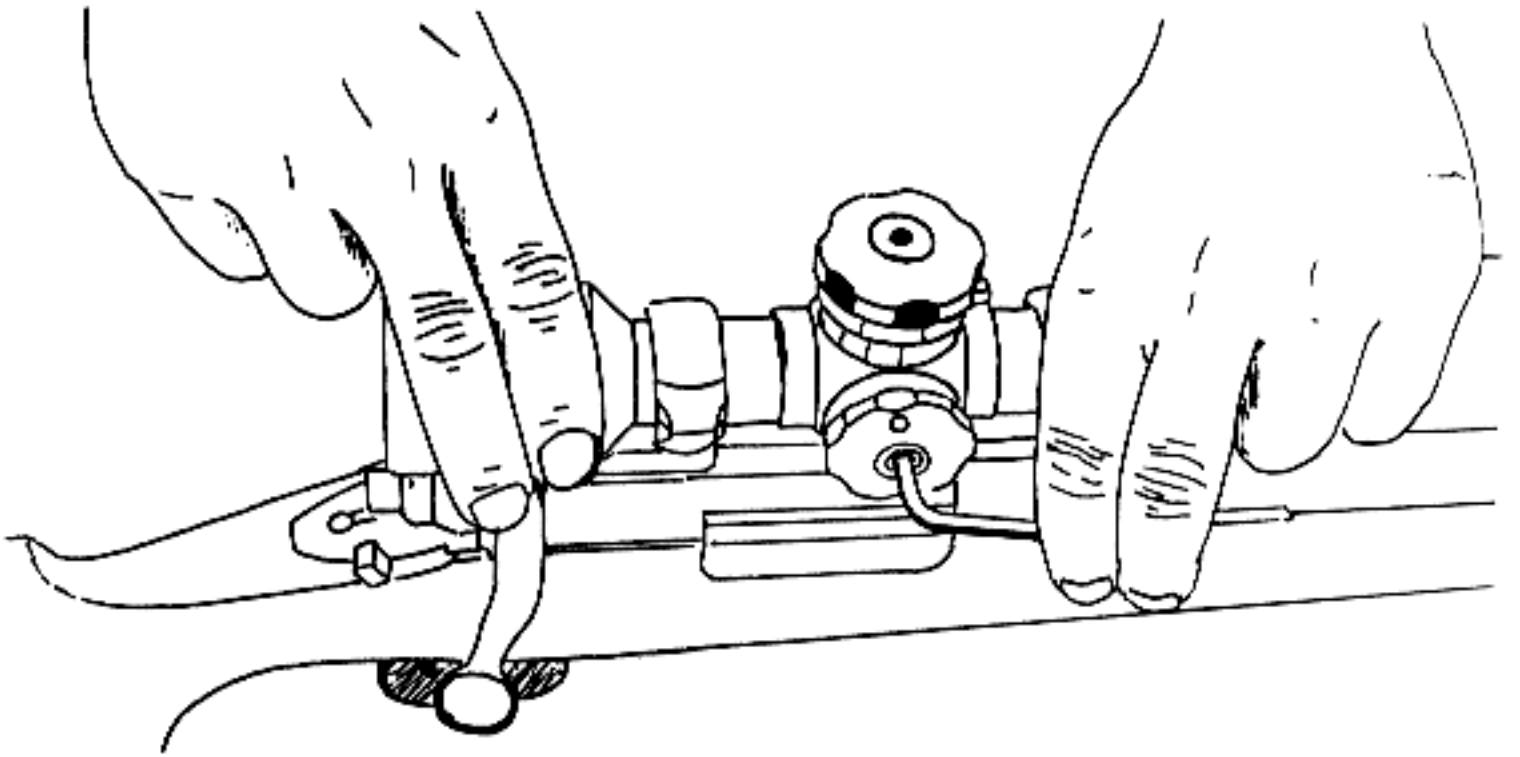
Remember that to bring the strike of the bullet right or up, turn the large Allen screws counter-clockwise. To bring the strike of the bullet left or down, turn the large Allen screws clockwise.



Adjusting Zero for Elevation.

The scope may also be used to fire other ammo lots or types like 168-grain Sierra loads. The comeups are close and only some fine tuning may be required.

Also the mil dots can be used for aiming points if the weather or wind exceeds the capabilities of the scope adjustment. Remember, 1 mil equals 3.3 minutes. For example, if you are 4 minutes low at 1000 yards, hold 1 mil dot on the target and dial on ½ minute fine tune. Always use the crosshairs or a mil dot for your aiming point.



Adjusting Zero for Windage.

Field Expedient Zeroing

In most combat areas, you will not have access to a known distance range. In such cases, you must still confirm your zero prior to departure on a mission. There are two methods to use.

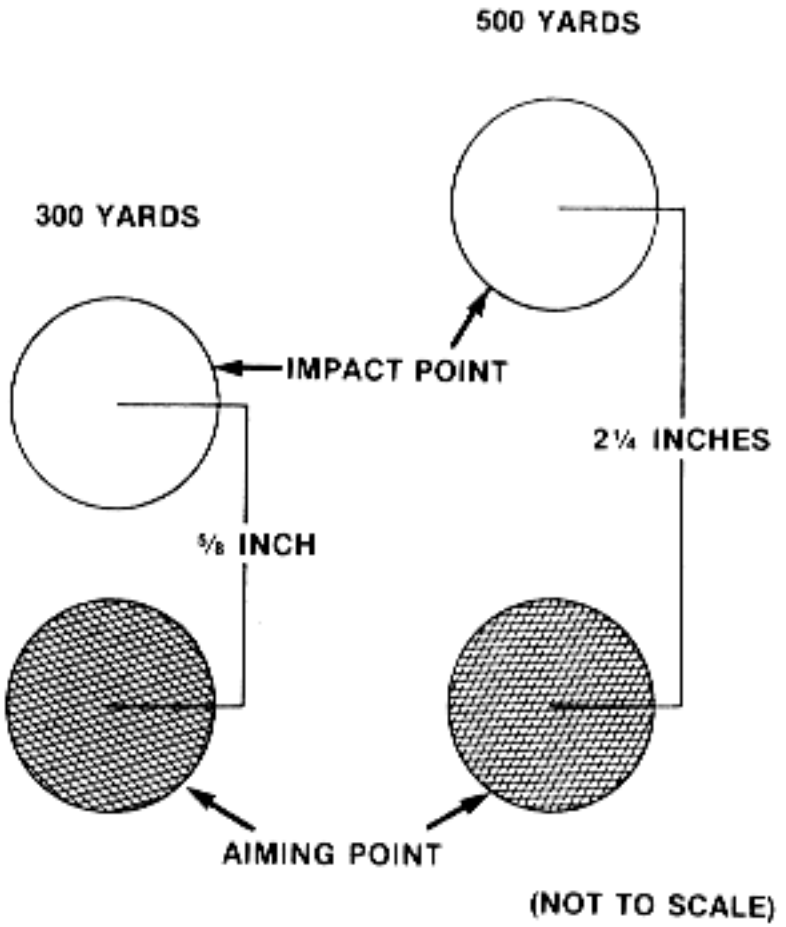
900-Inch Method

Using this method, a 300- or 500-yard zero may be confirmed.

- Dial on 300 and fire on your target 25 yards (900 inches) away. Adjust your impact to be ⅝ inches ABOVE your aiming point.
- Dial on 500 and fire on your target 25 yards away. Adjust your impact to be 2¼ inches ABOVE your aiming point.

Observation-of-Impact Method

- Pick a target so that your observer can clearly see the impact of your rounds.
- Determine the exact range to the target and dial this onto your scope.
- Fire on this target and have your observer spot the impacts. Make adjustments to bring the impact of the bullet onto your target.



900-Inch Zeroing Target.

Ammunition

Various types of ammunition may be shot through the M40A1. It is important to know how to care for ammunition and what effect various types of ammunition have on accuracy and the life of the weapon.

Care of Ammunition. Once you draw your ammunition, protect it from the elements. Keep it dry and clean, and out of direct sunlight. Do not use cleaning solvent on it. Be sure to inspect your ammunition before you depart on a mission. Look for—

- Dented casings.
- Bullets seated crookedly.
- Improperly seated primers.
- Corroded cases.

Types of Ammunition and Their Effects

Tracer—Never use it with the M40A1 as corrosive elements associated with tracer ammunition will corrode the barrel and greatly reduce its life.

M118 Match (white box)—This 173-grain round was designed for this weapon. It will yield maximum accuracy and should be used if available. However, it is no longer manufactured and will, therefore, be in short supply (if available at all).

M118 Special Ball (brown or white box with white sticker reading "M118 Special Ball")—This 173-grain round is the replacement for the M118 Match. It is somewhat less reliable from longer ranges (700-1000 yards) than the *white box*, but is currently the designated ammunition for the M40A1.

7.62 Blank—This is essential for certain training applications. It may be used without damage to the M40A1. However, in order to avoid damage to the barrel, the rifle should be cleaned ASAP after firing blanks (3-4 swabs of the bore brush per blank fired). The rifle should always be cleaned before subsequent firing, as blank ammunition leaves a residue that is highly corrosive when scratched into the bore by live ammunition.

De-Linked 7.62 Machine Gun Ammunition— The M40A1 was not designed to shoot the 147-grain type of ammunition, although shooting it will not cause damage to the weapon itself. The relative lack of quality control in the manufacture of this ammunition makes it sufficiently inaccurate so as to limit its training and/or operational value. This ammunition should never be used when M118 Match or M118 Special Ball is available.

Gun Book Recording

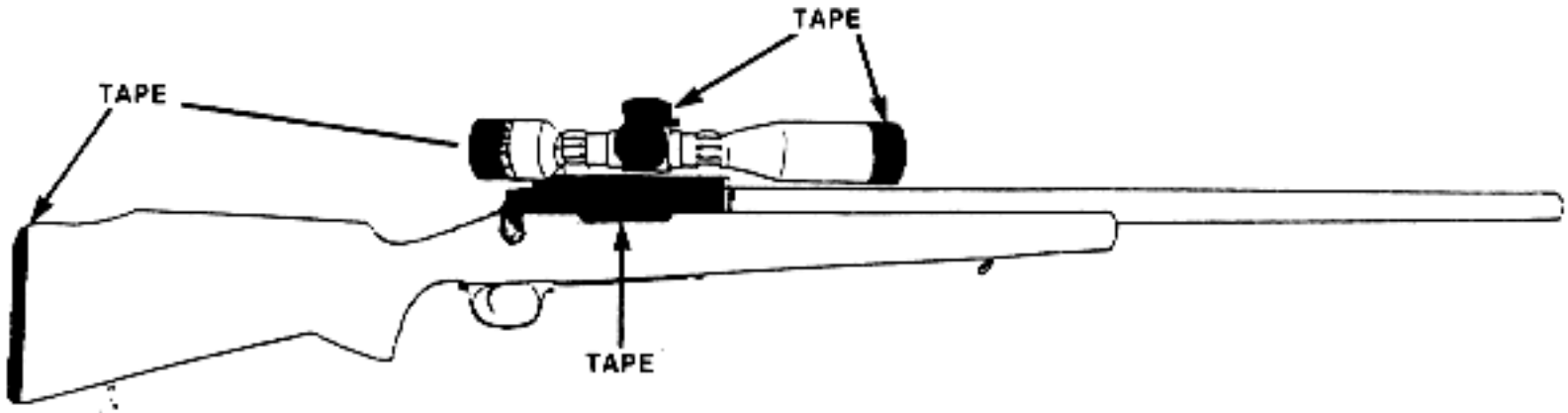
The M40A1 is to be rebarreled after 10,000 rounds. In order to keep an accurate count, you must maintain the gun book (Weapon Record Book, Part II - Tube Data, NAVMC 10558a). It is the responsibility of every scout/sniper to record entries of rounds fired, by type and number. Do not procrastinate where round-count documentation is concerned. Entries should be made on the day that firing occurs, in the gun book itself, not just in the sniper's databook. This is an example of entries in a gun book record book.

UNIT COMMANDER'S RECORD			
1. DATE	2. TYPE OF ROUND	3. ZONE	4. NO. OF ROUNDS / EFC VALUE
Sep 10, 88	*LC 015*		*90 / 3145*
Sep 20, 88	*LC 015*		*80 / 3225*
Sep 21, 88	*LC 015*		*120 / 3345*
Sep 22, 88	*LC 015*		*65 / 3410*
Sep 23, 88	*LC 015*		*85 / 3495*
Sep 24, 88	*LC 015*		*30 / 3545*
Sep 26, 88	*LC 015*		*68 / 3613*
Oct 5, 88	*Test*		*8 / 3667*
		PAGE TOTAL	5.
		TOTAL FROM PREVIOUS PAGE	6.
		ACCUMULATIVE TOTAL	7.

Painting the Weapon

Camouflage the weapon and scope with Marine Corps-issue flat colored spray paint or other similar commercial brands. Tape over surfaces that do not get painted.

- Wipe the weapon down with either acetone or dry-cleaning solvent. It must be free of any lubrication for the paint to adhere to the surface. DO NOT LET THE SOLVENT GET INTO THE BEDDING SURFACES.
- Remove the bolt; do not paint the bolt.
- Tape over the rear and ejection port of the receiver.
- Plug the muzzle with a cork.
- Place a soft cloth or cotton against the lenses and then tape over the objective and eyepiece lens of the scope. Make sure the lens surface is well protected.
- Tape over the numbers on the windage and elevation knobs.
- Tape over the butt stock pad.

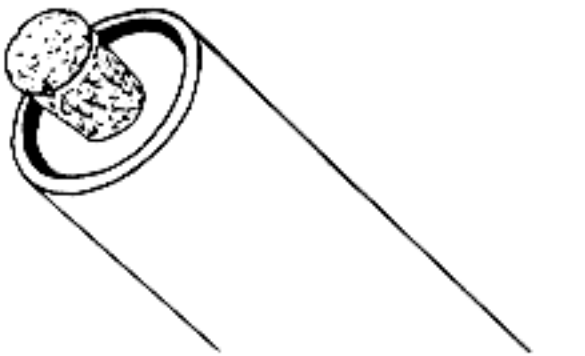


Preparing the Rifle for Painting.

Spray the weapon with the pattern/colors desired. Use as light a coat as possible/necessary to achieve the desired results. The base coat should be of the lightest color desired and subsequent colors in progressively darker shades.

Prior to any second painting, remove the existing coat of paint with acetone. Do not allow a buildup of coats of paint.

When camouflaging the crown with paint, place a small cork in the end of the muzzle ensuring a watertight fit. Then paint over the crown.



Use of the Plug.

Preparing the Weapon for Field Use

Prior to leaving on a mission, test-fire the weapon, confirm its zero, and garnish and protect from inclement weather. To do so properly, follow these procedures.

- Test-fire the weapon/confirm the zero.
- Clean the weapon; leave the bore as dry as the climate will allow.
- Tape over the muzzle/crown to keep moisture and foreign objects/debris from entering the bore. Duct tape works well for this purpose.
- Tape the floorplate closed; if it pops open, rounds in the magazine fall out the bottom of the weapon.
- Place a soft clean cloth or cotton (.45 cleaning patches work well) against the lens of the scope and duct tape over the objective and eyepiece lens of the scope to prevent foreign objects from scratching and damaging the lens.

- Place a small strip of cloth or rag between the stock and barrel of the weapon so that any debris that may get in during movement can easily be removed prior to firing. Remember the cloth MUST be removed PRIOR to firing.

Use of the Drag Bag

If a soft gun bag or *drag bag* is available, and the mission allows, place the rifle in this bag during the movement phase. If possible, keep the gun in the bag until the final firing position is reached. This provides maximum protection for the weapon and minimizes the chance of malfunction or other problems with its firing. Many missions preclude the extensive use of the drag bag, but it should be used whenever possible or practical.

If a drag bag is used, camouflage it with the type of vegetation through which it will be transported. If a drag bag is not used, attach local vegetation/garnish to the weapon. Be sure that there is no interference with its functioning. Also, use camo stick (or camo compact kits) to camouflage/reduce glare on areas of the weapon (other than the scope lenses) that appear to reflect light or shine.

Preparation in Winter Environment

With snow on the ground and in the trees, take these special measures to prepare the M40A1 for field use.

- Camouflage the weapon by using white and green spray paint, adhesive tape, medical tape, camo stick, or any combination of these. Natural vegetation may be effectively used as well. The glare of the sun reflecting off the snow causes temporary blindness so pay particular attention to reducing the amount of light entering into the objective lens of the scope.

- Camouflage the *black hole* appearance of the objective lens against the white background. To alleviate both problems, tape over the objective lens with adhesive or white tape, leaving a small ¼ by 1-inch vertical slot centered for light to pass through or tape over he objective lens completely with two layers of medical gauze material.

- Store the scope/rifle in a place roughly the same temperature as the outside temperature. This will prevent condensation from forming inside the scope, rendering it useless.

M40A1 Component List SL-3-05539B

Item #	Stock Number	Item Identification	Unit of Measure	Qty Used
		Supply System Responsibility		
1.	1005-01-030-8020	7.62 mm sniper rifle M40A1	ea	1
2.	1005-00-937-1024	Case, carrying rifle, molded plastic	ea	
3.	1240-01-123-4766	Mount, telescope, Unertl	ea	
4.	1005-00-714-1245	Sling, small arms, leather	ea	
5.	1240-01-123-4730	Telescopic sight, Unertl 10x, fixed	ea	
		Collateral Material		
		NSN 9999-00-841-4026		
6.	1005-00-556-4174	Brush, cleaning, small arm, .30 caliber	ea	1
7.	1005-00-550-4036	Brush, cleaning, small arm, .45 caliber	ea	1
8.	1005-00-791-3377	Case, lubricant	ea	
9.	4933-00-652-9950	Extractor, ruptured cartridge	ea	1
10.	1005-01-058-8795	Rod, cleaning (brass), 3 sections, .30 caliber	ea	1
11.	7920-00-205-0565	Brush, artist's hog bristle (camel's-hair)	ea	1
12.	1005-00-494-6602	Brush, cleaning, all-purpose	ea	1
13.	6640-00-285-4694	Paper, lens	hd	1

Proposed Addition to Current List

14.	None	Tools, scope adjustment (spanner wrench, Allen wrenches)	set	1
15.	None	Spacers, butt stock, removeable	set	1
16.	None	Cleaning gear, pull-through	ea	
17.	None	Bipod, removable	ea	1
18.	None	Bag, gun cloth (drag bag)	ea	1
19.	1005-00-167-4336	Sling, small arms, black nylon web	ea	1
20.	None	Guide, bore, plastic	ea	1
21.	None	Replacement for carrying case (McMillan medium)	ea	1
22.	None	Cordura nylon scope cover	ea	1