

MAINTENANCE CLEANING & INSPECTION

NAVMC 2618



59-2A

M16A1



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FOREWORD

1. Purpose

This publication, NAVMC 2618, Maintenance, Cleaning and Inspection M16A1 is for use by NCOs and Officers to enable them to become thoroughly familiar with maintenance, care and cleaning and inspection procedures of the M16A1 rifle.

2. Certification

Reviewed and approved this date.

A handwritten signature in cursive script, reading "R. G. Owens, Jr.", is positioned above the typed name.

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SECTION 1

FIRST AND SECOND ECHELON MAINTENANCE REQUIREMENTS

1. General.--The M16, like any other weapon when in daily use, requires continuous attention (care and cleaning) by the user. The importance of prescribed maintenance and operating procedures cannot be overstressed. In view of the above, this handout was prepared for use in M16A1 training and discusses the following specific subjects:

- a. 1st and 2d echelon maintenance.
- b. Proper care and cleaning procedures.
- c. Proper inspection procedures.

2. Preventive Maintenance.--Preventive maintenance is the systematic care, inspection, and servicing of weapons to maintain them in operating condition, prevent breakdowns, and assure maximum operational readiness. Further, it is that maintenance authorized for, performed by, and the responsibility of the using organization on weapons in its possession. It is the first link in the chain of maintenance and is the one most often broken, either through neglect or lack of knowledge of the weapon. It is the user's responsibility to properly clean his weapon and report promptly any broken, worn, or malfunctioning parts. Prompt attention in reporting discrepancies will expedite repair or replacement of parts, and prevent serious malfunctions at a later date.

3. First Echelon Maintenance.--First echelon maintenance is performed by the user. It consists of care and cleaning of the weapon as outlined in section 2.

4. Second Echelon Maintenance.--Second echelon maintenance is performed by unit ordnance personnel (battalion/squadron armorer) and consists of care, cleaning, second echelon repairs, and transportation of weapons to the next higher echelon of maintenance when required. The following second echelon maintenance parts are authorized to be replaced by second echelon maintenance personnel:

- a. Pin, Firing Retaining
- b. Pin, Firing
- c. Pin, Bolt Cam

- d. Pin, Extractor
- e. Extractor, Small Arm Cartridge
- f. Spring, Extractor
- g. Pin, Spring (Ejector)
- h. Ejector, Small Arms Cartridge
- i. Spring, Ejector, and Selector Lever Detent
- j. Handle, Charging
- k. Pin, Pivot
- l. Screw, Machine (Pistol Grip)
- m. Washer, Flat (Pistol Grip Screw)
- n. Grip, Pistol
- o. Screw, Butt Cap
- p. Stock Assembly, Molded
- q. Sling, Small Arms: M1
- r. Spring, Detent, Takedown Pin
- s. Detent, Takedown Pin
- t. Pin, Takedown
- u. Guard, Hand, Gun: R.H.
- v. Guard, Hand, Gun: L.H.

SECTION 2

CARE, CLEANING, AND LUBRICATION OF THE RIFLE, 5.56MM, M16A1

1. General.--Normal care and cleaning will ensure proper functioning of all parts of the weapon. Improper maintenance causes stoppages and malfunctions. Only bore cleaner and cleaning solvent which is available through the supply system should be utilized. Cleaning materials are carried by the rifleman in the bipod case. Lubrication instructions in paragraphs 3, 4, and 5 apply to garrison situations. The lubrication instructions in paragraph 6 are for use in a combat environment.

2. Care and Cleaning of the Rifle

- a. Inspect and clean your rifle thoroughly each day.
- b. Inspect and clean magazines daily.
- c. Use authorized cleaning materials and lubricants only.
- d. Do not perform any unauthorized maintenance.
- e. Do not make any unauthorized modifications.
- f. Do not use flash suppressor as a tool.
- g. Do not attach jungle slings to front sight assemblies.
- h. Do not tape magazines together.
- i. Do not leave ammunition in the chamber for prolonged periods; it tends to corrode the chamber.
- j. Inspect and clean ammunition daily; watch for corrosion.
- k. If your rifle gets wet, dry and lubricate as soon as possible.
 1. Insert cleaning gear from chamber end only. This helps to preserve the lands and grooves in the rifle and ensures accuracy.

3. Cleaning and Lubrication of the Upper Receiver Group

a. Using the bore brush saturated with bore cleaner, brush the bore thoroughly, using straight-through strokes from chamber end to muzzle end. Push the brush through the bore until it extends beyond the muzzle. (Never reverse the direction of the brush while in the bore.)

(1) CAUTION: If this procedure is not followed, the bore brush could become jammed in the bore. Secondly, the lands and grooves in time will become damaged.

(2) The cleaning rod is to be supported by hand, a section at a time, to prevent flexing and damage to the rod when starting into the bore.

b. Using patches, dry the bore thoroughly. Remove the patch before reversing direction of the cleaning rod. If only .30 caliber patches are available, cut into four equal parts and use only one part.

c. Clean chamber and barrel extension using the chamber cleaning brush saturated in bore cleaner. Make sure chamber and barrel extension are free of carbon, powder residue, and foreign matter. It may be necessary to use a small bristle brush to assist in cleaning locking recesses in the barrel extension. No bristle brush is issued; however, a toothbrush can be used. Wipe the chamber and barrel extension clean and dry.

d. Clean the interior of the receiver using a small bristle brush. Clean the exterior of the gas tube by scrubbing with a bore brush and bore cleaner. Scrub the half-moon recess next to the tube to ensure it is free of carbon deposits and debris. Do not clean the interior of the gas tube.

e. Using Lubricating Oil, Semi-fluid, MIL-L-46000A (LSA), apply a thin film to the internal and external surfaces of the upper receiver and barrel including under the hand guards, bore, chamber, barrel extension and locking lugs. The charging handle should also have a thin film of LSA. Work several drops of LSA into the forward assist assembly.

4. Cleaning and Lubricating the Bolt Carrier Group

a. Disassemble bolt from carrier down to authorized level of maintenance. Using a small bristle brush and bore cleaner, scrub all carbon and dirt from the bolt, locking lugs, extractor claw, and bolt rings. No abrasives are to be used. Check the extractor and ejector for good spring tension. Bolt ring gaps must be staggered.

b. Scrub carrier key using a bore brush and bore cleaner inside and out. Clean firing pin with patch and bore cleaner; the area forward of the front shoulder must be free of carbon or burrs. The firing pin must not be bent. Gas relief ports on right side of carrier must be free of any obstruction. Use patch and bore cleaner to clean the rest of the carrier. Wipe all parts dry and apply a thin film of LSA on all parts of bolt and bolt carrier. Apply one drop of LSA inside the carrier key and one drop in each of the gas relief ports. Excessive lubrication oil in the firing pin recess of the bolt may result in a light strike on the primer, thereby causing a misfire. Avoid excessive oil on components subjected to carbon deposits.

5. Cleaning and Lubricating the Lower Receiver Group

a. Disassembly of the lower receiver group is not authorized at the first echelon of maintenance (user); however, by using a small bristle brush and patches, it may be cleaned adequately.

b. Brush as thoroughly as possible, wipe all portions with a patch and bore cleaner, then wipe dry.

c. Using LSA apply a thin film to the internal and external surfaces of the lower receiver, the firing mechanism, the action spring and guide, and the lower receiver extension.

6. Lubrication Recommended for a Combat Environment

a. Excessive lubrication only contributes to weapon malfunctions and does not eliminate the need for daily cleaning. The following is a guide for lubrication. LSA should be applied in a very thin film to the following parts:

- (1) Shank of bolt cam pin.
- (2) Bolt carrier rails.
- (3) Hammer cam surface of bolt carrier.
- (4) One drop in each of the two gas relief ports on the bolt carrier.
- (5) One drop in the bolt carrier key.
- (6) One drop on each pin end in the lower receiver group as required; will be required more frequently during wet weather or after submerging.
- (7) One drop on selector lever, detent, and spring when required to prevent selector from freezing.

b. If LSA is not available for lubrication, the following procedures are acceptable:

(1) Apply lubriplate in a very thin film to the following points:

(a) Shank of bolt cam pin.

(b) Bolt carrier rails.

(c) Hammer cam surface of bolt carrier.

(2) Apply preservative oil, PL special as follows:

(a) One drop in each of the two gas relief ports on the bolt carrier.

(b) One drop in the bolt carrier key.

(c) One drop on each pin end in the lower receiver group as required; will be required more frequently during wet weather or after submerging.

(d) One drop on selector lever, detent, and spring as required to prevent selector lever from freezing.

7. Care and Cleaning of Ammunition

a. When necessary to store ammunition in the open, raise it on dunnage at least six inches from the ground; protect it with a cover but leave enough space for circulation of air.

b. Ammunition is adversely affected by moisture and high temperature; do not open boxes until ammunition is to be used. Ammunition removed from airtight containers, particularly in damp climates, may corrode. Protect ammunition from high temperatures and the direct rays of the sun. More uniform firing is obtained if rounds are of the same temperature.

c. Do not attempt to disassemble the cartridge or alter any of its components.

d. The use of oil or grease on cartridges is prohibited.

e. Ammunition should be protected from sand, mud, moisture, frost, snow, ice, grease, corrosion, and all foreign matter. Wet, dirty or lightly corroded ammunition may be cleaned with a clean, dry cloth.

f. Brass cartridge cases are easily dented and should be protected from hard knocks and blows.

g. Twenty-round paper cartons deteriorate when wet and adhere to cartridges.

h. Inspect all ammunition prior to loading into magazines. Do not use ammunition which is dirty, corroded, dented, or has a loose bullet.

8. Care, Cleaning, and Lubrication of Magazines

a. Carefully disassemble the unloaded magazine.

b. Thoroughly scrub the inside of the magazine and the follower with a brush or rag soaked in rifle bore cleaner.

c. Dry all parts of the magazine with a clean, dry cloth.

d. Inspect follower spring. If it's not broken or deformed, apply a light coat of LSA to the spring only. (No other lubrication is required or authorized.)

e. Reassemble magazine.

9. Water in Bore.--If the rifle is fired with water in the bore, the excessive pressures generated can damage the barrel and possibly injure the individual. During the rainy season or after fording a stream, take the following precautions prior to firing:

a. Point the muzzle down.

b. Pull the charging handle back slightly so that air can enter and let the water out.

c. Press the forward assist to reseat the round and lock the bolt in the firing position.

SECTION 3

INSPECTION PROCEDURES

1. General.--Inspections have definite functional values. The M16A1 rifle cannot be completely inspected while assembled. The serviceability of the weapon cannot be determined unless the weapon is field stripped. When the situation permits, the weapon should be entirely field stripped and inspected as follows:

a. Upper Receiver

(1) Inspect overall finish and flash suppressor for looseness.

(2) Inspect bore and chamber. They must be free of powder residue, carbon buildup, and foreign matter.

(3) Inspect the locking recesses in the barrel extension for carbon buildup, chips, or cracks around recesses.

(4) Inspect interior of receiver, exterior of gas tube, and the half-moon recess next to gas tube, making sure they are free of carbon deposits. The gas tube must not be bent or crimped.

(5) Inspect front and rear sights for freedom of movement.

(6) Check handguards for cracks and loose heat shields.

(7) Inspect forward assist assembly for proper functioning; check forward tang for excess wear or burrs.

(8) Inspect gas tube for dents or crimps. Gas tube is bent to conform to barrel taper. Do not attempt to straighten gas tube.

b. Lower Receiver

(1) Inspect overall finish, butt stock, and pistol grip for cracks and looseness.

(2) Inspect bolt catch and magazine catch for freedom of movement.

(3) Check selector lever for freedom of movement. Selector spring must not be cut or broken.

(4) Inspect takedown and pivot pin to ensure they will not come free of receiver.

(5) Check automatic sear for excessive wear or damage. (Top and bottom plus sear spring.)

(6) Function check firing parts for proper assembly, operation, and excessive wear.

c. Bolt Carrier Group

(1) Check carrier key to ensure it is tight and free of carbon.

(2) Check carrier to ensure it is free of carbon deposits, cracks, and fractures and that the cam pin track has no excessive wear.

(3) Inspect bolt; it must be free of carbon deposits, nicks, and burrs. Inspect the extractor claw for chips and cracks.

(4) Inspect the extractor and ejector for spring tension.

(5) Make sure locking lugs are free of burrs, cracks, and fractures.

(6) Inspect bolt rings for chips and cracks. They must be clean and gaps are to be staggered.

(7) Inspect firing pin for damage and excessive wear. Make sure firing pin is free of carbon and is not bent. Check for freedom of movement and protrusion through the face of the bolt.

(8) Inspect charging handle for excessive wear and latch for spring tension.

2. Followup Procedures.--In addition to the above list, the weapon should be inspected for proper care and cleaning as described in section 2. Any defects in the weapon that are noted must be brought immediately to the attention of your unit ordnance personnel for repair. CAUTION: Failure to do so will negate the usefulness of the inspection.