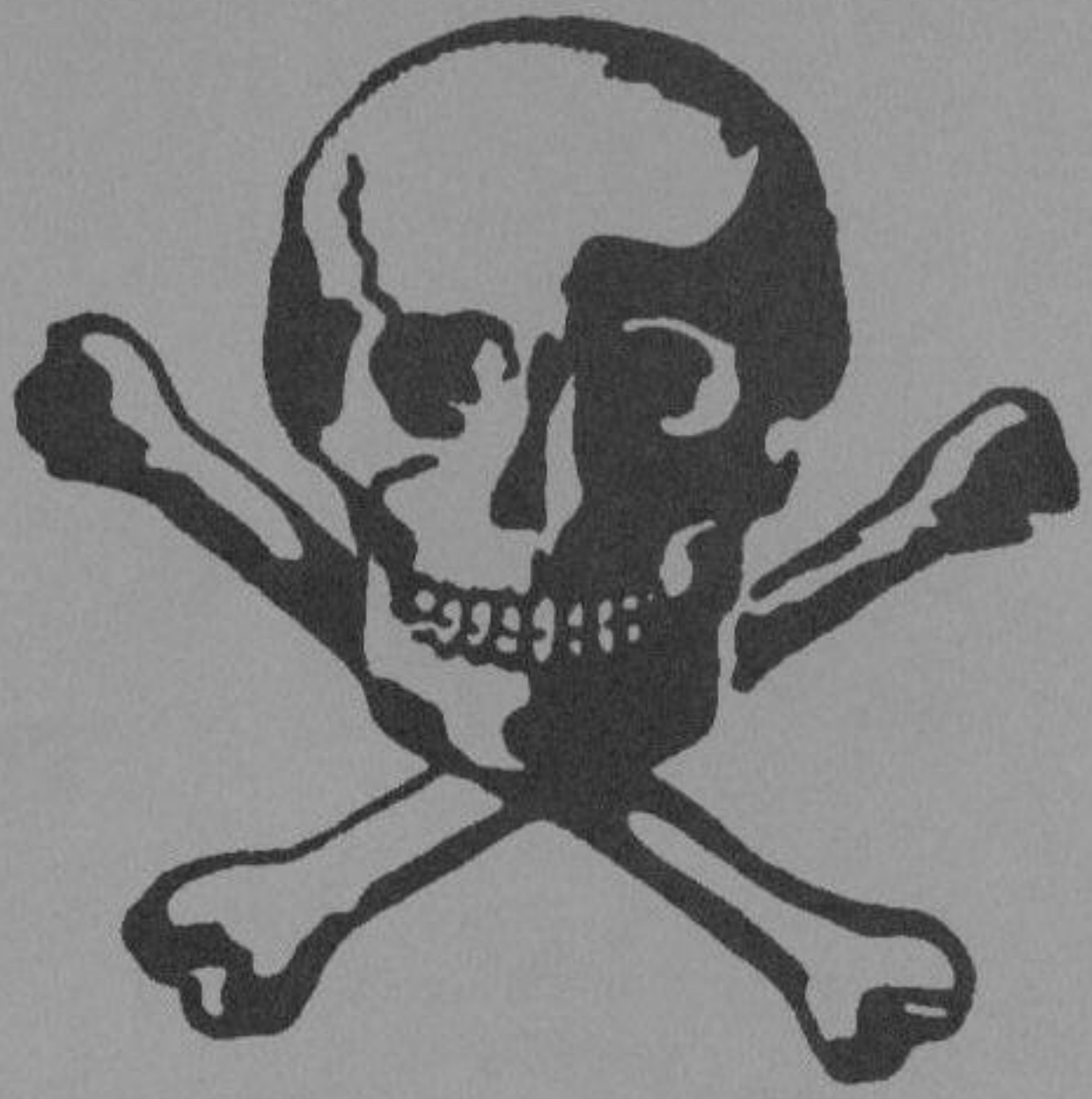

Warning!!!

Before starting an inspection, be sure to clear the rifle. Do not actuate the trigger until the rifle has been cleared. Inspect the chamber to ensure that it is empty and no ammunition is in position to be chambered. Do not keep live ammunition near work area.

To avoid injury to your eyes, use care when removing and installing spring-loaded parts.

Do not interchange bolt assemblies or components from one weapon to another: doing so may result in injury to, or death of, personnel.

All M16A2 rifles must be inspected and gauged at least once annually for safety and serviceability.

Bolt cam pin must be installed or weapon will blow up while firing the first round. If the bolt cam pin is not installed, injury to, or death of, personnel may result.

When using carbon removing compound, P-C-111, avoid skin contact. If it comes in contact with the skin, wash off thoroughly with running water. The use of a good lanolin base cream after exposure to compound is helpful. The use of gloves and protective equipment is required. For additional first aid data, see FM 21-11.

Organizational and Intermediate Maintenance (Including Repair Parts and Special Tools List) RIFLE, 5.56-MM, M16A2 W/E NSN 1005-01-128-9936

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HOW TO USE THIS MANUAL

GENERAL

In order to use this manual efficiently, you need to know:

1. Illustrations for the maintenance procedures show only those parts affected by the operation being performed.
2. Whenever the male gender is mentioned in the manual (i.e., crewmen, repairman), it also pertains to females.

INDEXES

This manual is organized to help you find the information you need quickly. There are several useful indexes and lists.

1. Table of Contents. Lists, in order, all chapters, sections, and appendices, gives page references.
2. Nomenclature Cross-Reference List.
3. Chapter Overviews. A summary of the chapter content is located at the beginning of each chapter.
4. Symptom Index. Located before the troubleshooting table in each maintenance chapter, they list possible rifle malfunctions and the page which describes the troubleshooting procedures.
5. Alphabetical Index. Located at the end of the manual. It is a subject-to-page list of everything in the manual.

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. MARINE CORPS USERS, submit NAVMC 10772 (Recommended Changes to Technical Publications) to: Commanding General, Marine Corps Logistics Base (Code 850) Albany, Georgia 31704- 5000. A reply will be furnished direct to you. ARMY USERS, mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 direct to: Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-MAS, Rock Island, IL 61299-6000. A reply will be furnished to you.

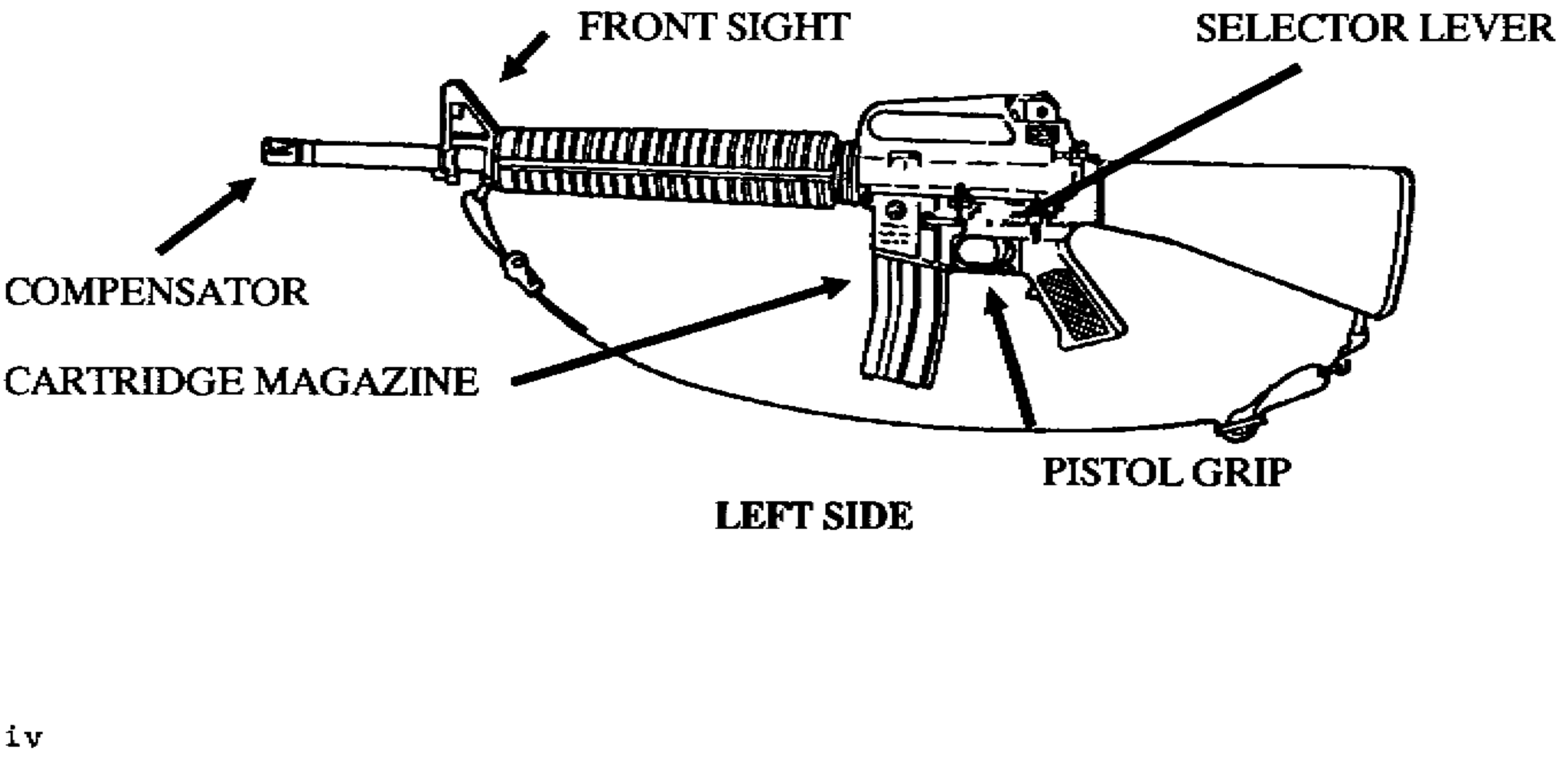
REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATION (EIR)

If your rifle needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. MARINE CORPS PERSONNEL, submit EIRs in accordance with MCO 1650.17. ARMY PERSONNEL, submit a SF 368 (Quality Deficiency Report). Mail to Commander, US

Army Armament, Munitions and Chemical Command, ATTN: AMSMC-QAD, Rock Island, IL 61299-6000. A reply will be furnished to you.

EXTERNAL VIEW OF 5.56-MM RIFLE M16A2

RIGHT SIDE



LEFT SIDE

CHAPTER 1
INTRODUCTION

CHAPTER OVERVIEW

This chapter contains general information, equipment description and data, and principles of operation for the M16A2 rifle.

Section I. GENERAL INFORMATION

1-1. SCOPE.

a. *Type of Manual.* Organizational and Intermediate Maintenance.

b. *Model Number and Equipment Name.* 5.56-mm Rifle M16A2.

c. *Purpose of Equipment.* Provides personnel an offensive/defensive capability to engage targets with small arms fire.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS.

Refer to: TM 4700- 15/1 (Marine Corps), DA PAM 738-750, (ARMY).

1-3. DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE.

Refer to: TM 750-244-7.

1-4. PREPARATION FOR STORAGE OR SHIPMENT.

Refer to: MCO P4450.7 (Marine Corps), TM 740-90-1 (ARMY).

1-5. NOMENCLATURE, CROSS-REFERENCE LIST.

Common Name/*Nomenclature*
Action Spring/*Compression Helical Spring* (8448629)
Bolt Catch Spring/*Compression Helical Spring* (8448633)
Burst Disconnector/*Lock-Release Lever* (9349113)
Cam Clutch Spring/*Helical Spring* (9349109)
Charging Handle Assembly/*Handle Assembly* (8448517)
Disconnector Springs/*Compression Helical Spring* (9349116)
Ejector Spring/*Helical Spring* (8448516)
Extractor Spring Assembly/*Spring Assembly* (8448755)
Hammer Spring/*Torsion Helical Spring* (9349107)
Magazine Catch Spring/*Compression Helical Spring* (8448637)
Peel Washer/*Shim* (9349051)
Pivot Pin Detent/*Takedown Pin Detent* (8448585)
Rifle Barrel Assembly/*Barrel Assembly* (9349124)
Semiautomatic Disconnector/*Lock-Release Level* (9349114)
Trigger Spring/*Torsion Helical Spring* (8448593)
Weapon/*Rifle, 5.56-mm, M16A2*

1-6. REPORTING OF UNSATISFACTORY EQUIPMENT.

Refer to: MCO 4855.10.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-7. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

a. *Characteristics.*

(1) Lightweight
(2) Air-cooled
(3) Gas-operated
(4) Magazine-fed
(5) Semiautomatic or burst fire

b. *Capabilities.* Provide an offensive/defensive capability to engage targets with direct small arms fire.

c. *Features*

(1) The bolt locking action is one of the mechanical features of the weapon. The bolt and barrel extension contain locking lugs which engage and lock the bolt firmly in the barrel extension. The initial force of the explosion of the cartridge is absorbed by the barrel, barrel extension, and bolt.

(2) The trigger guard is easily adaptable to winter operations. A spring-loaded retaining pin is depressed to allow ready access to the trigger when wearing arctic mittens.

(3) The ejection port cover prevents dirt or sand from getting into the ejection port. The cover must be closed during periods when firing is not anticipated. It opens automatically by the forward or rearward movement of the bolt carrier.

1-8. DESCRIPTION OF MAJOR COMPONENTS.

A **CARTRIDGE MAGAZINE.** 30 cartridge capacity.

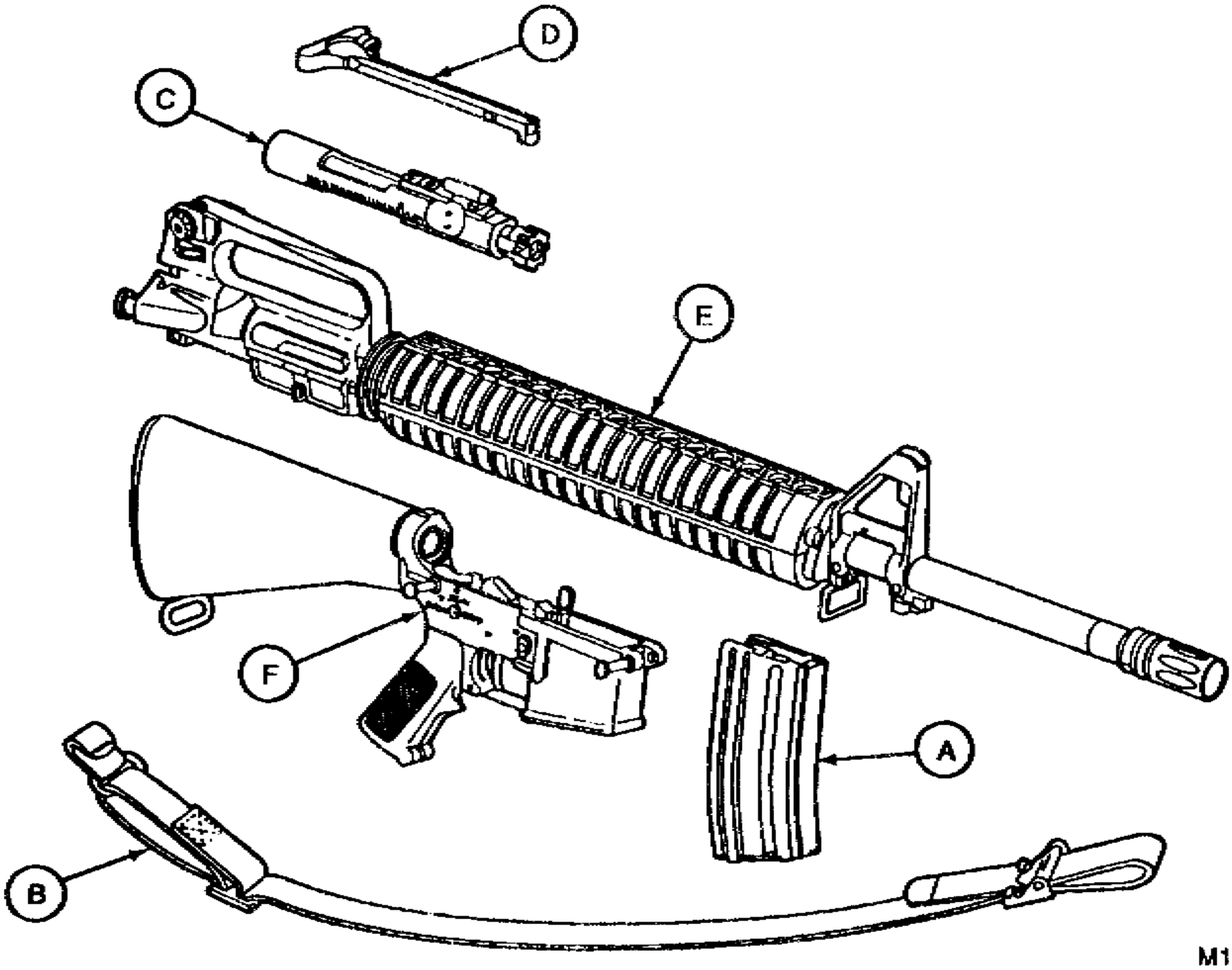
B **SMALL ARMS SLING.** The small arms sling is adjustable and provides a means to carry the weapon.

C **BOLT CARRIER ASSEMBLY.** Carries bolt to chamber and fires the weapon. Contains the firing pin, extractor, bolt, ejector, and cam pin.

D **HANDLE ASSEMBLY.** Provides a means of charging the weapon.

E **UPPER RECEIVER AND BARREL ASSEMBLY.** Upper receiver contains rear sight, ejection port, ejection port cover, and a housing for the bolt carrier and bolt assembly. Rifle barrel assembly is aircooled, contains compensator and front sight assembly, and holds the two handguards and the sling swivel.

F **LOWER RECEIVER AND BUTTSTOCK ASSEMBLY.** Lower receiver contains the trigger assembly, sear, hammer assembly, selector lever, rifle grip, bolt catch, and buttstock assembly. The buttstock assembly houses the action spring, buffer assembly, and extension assembly.



M16A2

1-9. EQUIPMENT DATA.

Weight:

Rifle M16A2 without magazine and sling	7 1/2 lb
Sling, Adjustable.	4 oz
Empty magazine.	4 oz
Loaded magazine	1 lb 1 oz
Rifle M16A2 w/sling and loaded magazine.	8 3/4 lb
Bayonet-Knife M7	10 1/2 oz
Scabbard M8A1	5 oz

Length:

Rifle w/compensator	39 5/8 in
Rifle w/bayonet-knife.	44 7/8 in
Barrel	20 in
Barrel with compensator	21 in

Mechanical features:

Rifling.	right-hand twist
	6 grooves-1 turn
	in 7 inches
Method of operation	direct gas
Type of breech mechanism	rotating bolt
Method of feeding.	magazine
Cooling	air
Trigger pull	5 to 8 1/2 lb

Ammunition:

Caliber	5.56-mm
Type.	ball, blank,
	dummy, and
	tracer

Firing characteristics:

Muzzle velocity (approximate)	3,100 fps
Muzzle energy	1,322 ft-lb
Chamber pressure	52,000 psi
Cyclic rate of fire (approximate)	800 rds/m

Maximum rate of fire:

Semiautomatic ..... 45 rds/m
Burst ..... 90 rds/m

Sustained rate of fire ..... 12/15 rds/m

Maximum range ..... 3,534 meters

Maximum effective range:

Individual/point targets ..... 550 meters
Area targets ..... 800 meters

NOTE

Some weights and measures are approximations using M855 ammunition.

Whenever the term "Cleaner Lubricant and Preservative" (CLP) or the words "lubricant", "lube", "LSA", or "LAW" are cited in this TM, they are to be interpreted to mean that CLP, LSA and LAW can be utilized as applicable. The following constraints must be adhered to:

a. Under all but the coldest arctic conditions, LSA or CLP are the lubricants to use on your weapon. Either may be used at - 10°F and above. However, do not use both on the same weapon at the same time.

b. LAW is the lubricant to use during cold arctic conditions, + 10°F and below.

c. Any of the lubricants may be used from -10°F to + 10°F.

d. Do not mix lubricants on the same weapon. The weapon must be thoroughly cleaned during change from one lubricant to another. Dry Cleaning Solvent (SD) is recommended for cleaning during change from one lubricant to another.

Rifle Bore Cleaner (RBC) may be used to remove carbon buildup in the bore and other portions of the weapon.

Section III. PRINCIPLES OF OPERATION

1-10. GENERAL. The weapon:

a. *Is gas-operated.* It fires in either the semiautomatic or burst mode.

b. *Has positive locking of the bolt.* Firing pin is part of the bolt and carrier assembly and cannot strike the primer until the bolt is fully locked.