

UNITED STATES MARINE CORPS
FIELD MEDICAL TRAINING BATTALION
Camp Lejeune, NC 28542-0042

FMST 108

M16/M4 Service Rifle Familiarization

TERMINAL LEARNING OBJECTIVE.

1. Given a service rifle/Infantry Automatic Rifle (IAR), sling, magazines, cleaning gear, individual field equipment, and ammunition, **perform weapons handling procedures** with a service rifle/Infantry Automatic Rifle (IAR) in accordance with the four safety rules. (HSS-MCCS-2004)
2. Given a service rifle and cleaning gear, **maintain a service rifle** to ensure the weapon is complete, clean, and serviceable. (HSS-MCCS-2005)
3. Given a service rifle that has stopped firing and ammunition, **perform corrective action with a service rifle** to return the weapon to service. (HSS-MCCS-2006)

ENABLING LEARNING OBJECTIVES.

1. Without the aid of reference, given a list of choices, **identify the characteristics of the service carbine**, within 80 percent accuracy, per MCRP 3-01A. (HSS-MCCS-2004a)
2. Without the aid of reference, given a list of choices, **identify the four safety rules** for the service carbine, within 80 percent accuracy, per MCRP 3-01A. (HSS-MCCS-2004c)
3. Without the aid of reference, given a list of choices, **identify the components of the service carbine**, within 80 percent accuracy, per MCRP 3-01A. (HSS-MCCS-2004b)
4. Without the aid of reference, given a list of choices, **identify the weapon conditions for the service carbine**, within 80 percent accuracy, per MCRP 3-01A. (HSS-MCCS-2004d)
5. Without the aid of reference, given a list of choices, **identify the ammunition for the service carbine**, within 80 percent accuracy, per MCRP 3-01A. (HSS-MCCS-2004e)
6. Without the aid of reference, given a service carbine, **disassemble the service carbine**, to 100 percent accuracy, per MCRP 3-01A. (HSS-MCCS-2005b)
7. Without the aid of reference, given a service carbine and necessary cleaning gear, **clean the service carbine** so that it is clean, serviceable, and passes a functions check, per MCRP 3-01A.(HSS-MCCS-2005c)

8. Without the aid of reference, given a service carbine, **assemble the service carbine**, to 100 percent accuracy, per MCRP 3-01A. (HSS-MCCS-2005d)

9. Without the aid of reference, given a list of choices, describe the procedures to **perform a function check of the service carbine**, to 100 percent accuracy, per MCRP 3-01A. (HSS-MCCS-2005e)

1. **CHARACTERISTICS** The M16A4 Service rifle and the M4 Service Carbine (M4 Service Carbine is the TO issue weapon for Corpsmen),(see figures 1-3) are 5.56mm, magazine-fed, gas-operated, air-cooled, shoulder-fired weapons that can be fired either in automatic three-round bursts or semiautomatic single shots as determined by the position of the selector lever.



(Figure 1. M16)



(Figure 2. M4)

M16A4		M4 Carbine
5.56 mm	<i>Caliber</i>	5.56 mm
8.79 pounds	<i>Weight (w/30 round magazine)</i>	6.9 pounds
39 5/8 inches	<i>Length (w/compensator)</i>	29.75 inches w/butt stock closed 33 inches w/butt stock open
800 rounds per minute (approximately)	<i>Cyclic rate of fire</i>	800 rounds per minute (approximately)
	<i>Maximum effective rates of fire:</i>	
45 RPM	<i>Semiautomatic</i>	45 RPM
90 RPM	<i>Burst</i>	90 RPM
12 – 15 RPM	<i>Sustained rate of fire</i>	12 – 15 RPM
	<i>Maximum effective range:</i>	
550 meters	<i>Individual/point targets</i>	500 meters
800 meters	<i>Area targets</i>	600 meters
3534 meters	<i>Maximum range</i>	3600 meters

(Figure 3, Characteristics of each service rifle)

2. **SAFETY RULES**

The following rules apply to all weapon systems at all times without exception.

SAFETY RULE #1 **Treat every weapon** as if it were loaded

- a. Never trust your memory or make any assumptions about a weapon's safety status. Always confirm what condition your weapon is in if there is ever any doubt.
- b. Check your weapon for ammunition whenever it has been out of your possession.
- c. Never hand a weapon to anyone without clearing it. Clearing is a procedure for ensuring there is no ammunition in the weapon. Whenever you assume control of a weapon from someone, your first action is to clear it, even if you have witnessed its clearing.
- d. Never move in front of a weapon held by someone else.
- e. Never engage in or tolerate horseplay with or around weapons.

SAFETY RULE #2 **Never point a weapon** at anything you do not intend to shoot

- a. Always be aware of muzzle direction and your surroundings. This ensures you will not unintentionally point your weapon at anything other than an intended target.
- b. Be aware of the maximum range of your weapon. If you do not know what is beyond your vision in any unprotected direction, do not point your weapon in that direction.
- c. Never allow the muzzle of your weapon to point at any part of your body.

SAFETY RULE #3 **Keep your finger straight** and off the trigger until you are ready to fire

- a. Never be guilty of a negligent discharge.
- b. A common reaction to a sudden shock or loss of balance while handling a weapon is an unintentional tightening of the grip. If your finger is off the trigger, you will eliminate the potential for firing a shot accidentally.

SAFETY RULE #4 **Keep the weapon on safe** until you intend to fire

The SAFE position on the selector lever is a built-in feature that has only one function. That function is to prevent inadvertent firing of the rifle.

- a. When patrolling or walking it is possible for the trigger to be unintentionally depressed by objects (e.g., branches, wire, gear) encountered en route. Keeping the weapon on safe ensures the weapon will not fire if the trigger is accidentally engaged.
- b. Never trust anyone else regarding a weapon's safety status.

3. **COMPONENTS** Before taking your rifle apart, you should know the nomenclature (names) of all externally visible parts. Using your own rifle, find and learn the nomenclature of all outside parts. Then, as you disassemble the rifle, learn the nomenclature of all internal parts (see figure 4). The three major components are the bolt carrier group, the upper receiver, and the lower receiver.

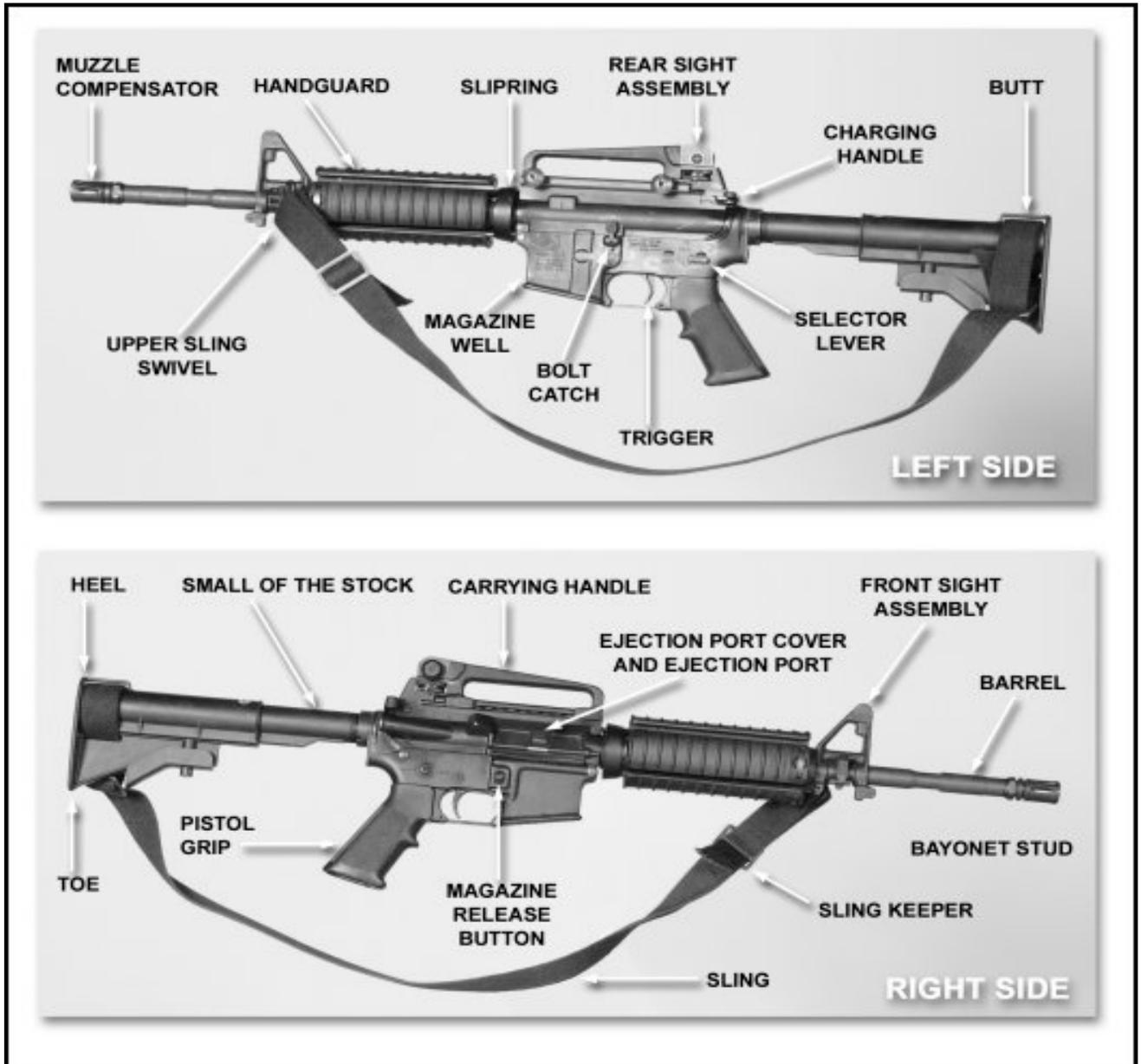


Figure 4. Components of External Parts

4. WEAPONS CONDITIONS

Condition Four (Leave the M16/M-4 in this condition unless told to do otherwise)

Magazine removed
Bolt forward
Chamber empty
Ejection port cover closed
Weapon on safe

Condition Three

Magazine inserted
Bolt forward
Chamber empty
Ejection port cover closed
Weapon on safe

Condition Two

Not applicable for the M16/M4

Condition One

Magazine inserted
Bolt forward
Round in the chamber
Ejection port cover closed
Weapon on safe

5. AMMUNITION (see figure 5)

Four types of ammunition are authorized for use with the M16/M4 service rifle: ball, tracer, dummy, and blank. Shown below are: ball M193 round, ball M855 round, and Tracer M196 and M856 (shown as one round), dummy M199 round and blank M200 round.

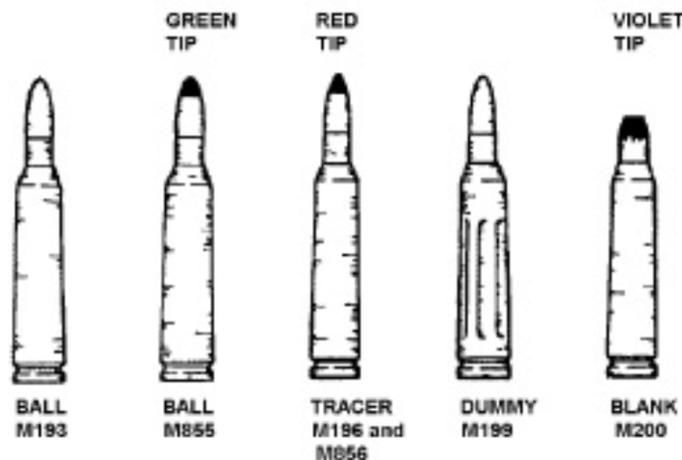


Figure 5. Ammunition

M193 Ball: This ammunition is a 5.56mm center fire cartridge with a 55-grain gilded metal jacket, lead alloy core bullet. The primer and case are waterproofed. The M193 ball ammunition has no identifying marks.

M855 Ball:

This ammunition is the primary ammunition for the M16A2 rifle. Identified by a green tip, its 5.56mm center fire cartridge has better penetration than the M193. It has a 62-grain gilded-metal jacket bullet. The rear two-thirds of the core of the projectile is lead alloy and the front one-third is a solid steel penetrator. The primer and case are waterproofed.

M196 and M856 Tracer

This ammunition has the same basic characteristics as ball ammunition. Identified by a bright red tip, its primary uses include observation firing, incendiary effect, and signaling. Tracer ammunition should be intermixed with ball ammunition in a ratio no greater than 1:1. The preferred ratio is one tracer to four balls (1:4) to prevent metal fouling in the bore.

M199 Dummy

This ammunition has six grooves along the side of the case. It contains no propellants or primer. The primer well is open to prevent damage to the firing pin. The dummy cartridge is used during dry fire and other training purposes.

M200 Blank

This ammunition has the case mouth closed with a seven-petal rosette crimp. It contains no projectile. Blank ammunition, identified by its violet tip, is used for training purposes.

6. DISASSEMBLY: Before you disassemble the rifle ensure the weapon is on safe (see figure 6).

Clearing the M16/M4 Carbine Service Rifle (Safety Features/Precautions)

- Attempt to point the selector lever to safe. If the weapon is not cocked, the selector lever cannot be pointed to safe. (see figure 6)
- Remove the magazine from the weapon by grasping it with the left hand, press the magazine release button with your right index finger, and pull the magazine straight down - Lock the bolt carrier to the rear by grasping the charging handle, pressing the charging handle latch, and pull the charging handle all the way to the rear.
- Press in on the bottom of the bolt catch with the thumb or forefinger. Allow the bolt carrier to move slowly forward until the bolt engages the bolt catch. Return the charging handle to its forward position.
- Inspect the receiver and chamber by looking through the ejection port to ensure these areas do not contain ammunition.



Figure 6. Selector Switch on Safe

The rifle is clear and safe only when:

There is no round in the chamber

The magazine is out

The bolt carrier is locked to the rear

The selector lever is in the safe position

Disassembly - When the weapon is clear you can disassemble the weapon by doing the following:

Allow the bolt carrier to go forward by depressing the upper portion of the bolt catch.

Remove the sling and place the rifle on the table or a flat surface, muzzle to the left, weapon on the right side.

Remove the hand guards

Place the butt of the weapon against a flat surface and pull down on the slip ring until the lower lip of one hand guard is clear.

Pull out and down on the hand guard until the upper lip is cleared of the hand guard cap.

Repeat the same operation to remove the other side of the hand guard.

Considerable pressure is required to remove the hand guard from the slip ring.

Detach the upper receiver from the lower receiver (see figure 7).

Press out the take down pin from left to right until the upper receiver swings free of the lower receiver.

Press out the receiver pivot pin.

Separate the upper and lower receiver groups.

Place the lower receiver group on the table.



Figure 7. Detach upper and lower receiver

Removing the charging handle and the bolt carrier group

Hold the upper receiver group with the muzzle and carrying handle up. Grasp the charging handle.

Press the charging handle. Latch and pull the charging handle three inches to the rear to withdraw the bolt carrier from the receiver (see figure 8).

Grasp the bolt carrier and pull it out from the receiver. When the bolt carrier is removed, the charging handle can be removed from its groove in the receiver.

Place the upper receiver on the table.



Figure 8. Removing the bolt carrier

Disassemble the bolt carrier group (see figure 9)

Press out the fire-retaining pin from right to left.

Elevate the front of the bolt carrier and allow the firing pin to drop free from its recess in the bolt. Rotate the bolt until the cam pin is clear of the bolt carrier key and remove the cam pin by rotating the head 90 degrees (1/4 turn) in either direction. Lift out of well in the bolt and bolt carrier. After the cam pin is removed, the bolt can be removed from its recess in the bolt carrier and disassembly of the bolt carrier group is complete.

Remove the buffer assembly

Push down on the buffer retainer. Allow the buffer assembly to move forward slowly until it is clear of the buffer retainer. Depress the hammer to the rear (downward) to allow the buffer assembly to clear the hammer. Remove the buffer assembly and the action spring.

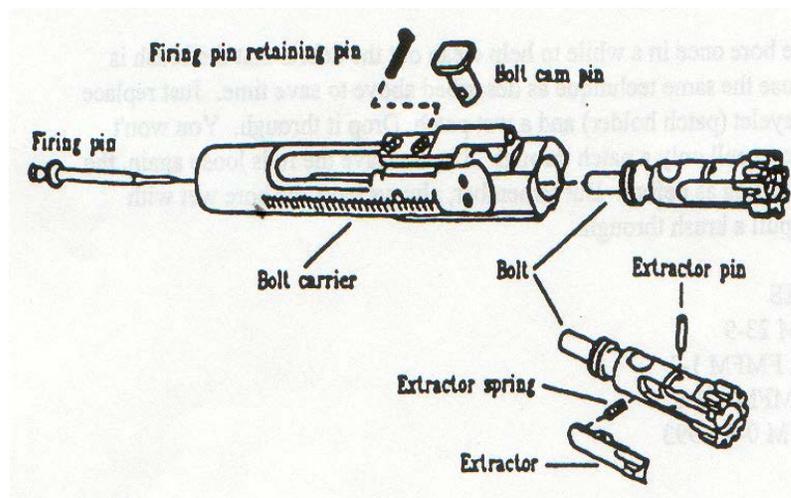


Figure 9. Bolt Carrier Group

7. CLEAN THE SERVICE RIFLE

Normal care and cleaning will result in proper functioning of all parts of the weapon. Improper maintenance causes stoppages and malfunctions. Only "issued" cleaning materials should be used. These cleaning materials are carried in the compartment provided in the stock of the weapon on the M16 or in the cleaning kit for the M4 Carbine. Do not use any abrasive material to clean the rifle. Cleaner Lubricant and Preservative (CLP) is the only authorized lubricant for the M16/M4 Carbine rifle.

Cleaning and lubrication of the upper receiver

Clean the upper receiver until free of powder.

After cleaning, coat the interior surfaces of the upper receiver with CLP. Pay particular attention to shiny surfaces which indicate areas of friction.

Cleaning and lubrication of the barrel

Attach a bore brush to the cleaning rod, dip it in CLP, and brush the bore thoroughly.

Brush from the chamber to the muzzle using straight-through strokes.

Push the brush through the bore until it extends beyond the muzzle compensator.

Continue this process until the bore is free of carbon and fouling (never reverse the direction of the brush while in the bore).

Remove the brush from the cleaning rod and dry the bore with clean patches.

Do NOT attempt to retract the patch until it has been pushed all the way out of the muzzle compensator.

CAUTION: The cleaning rod is to be supported by hand, one section at a time, to prevent flexing and damage to the bore.

Cleaning the chamber

Attach the chamber-cleaning brush to a section of the cleaning rod.

Dip it in CLP, and insert it in the chamber.

Scrub in a circular motion.

Remove the brush and dry the chamber thoroughly with clean patches.

Clean the locking lugs in the barrel extension, using a small bristle brush dipped in CLP to remove all carbon deposits.

Clean the protruding exterior of the gas tube in the receiver with the bore brush attached to a section of the cleaning rod.

After cleaning, lubricate the bore and locking lugs in the barrel extension by applying a light coat of CLP to prevent corrosion and pitting. If the hand guards have been removed, rub a light coat of CLP on the surface of the barrel.

Place one or two drops of CLP on the front sight post.

Cleaning and lubrication of the bolt carrier group

Thoroughly clean all parts with a patch or an all-purpose brush dipped in CLP.

Clean the locking lugs of the bolt, using an all-purpose brush and CLP.

Ensure that all carbon and metal filings are removed; then wipe it clean with dry patches and lubricate lightly.

Use an all-purpose brush dipped in CLP to scrub the extractor to remove carbon and metal filings; also clean the firing pin recess and the firing pin.

When dry and before final assembly, apply a coat of CLP to the bolt body, rings and carrier key.

When bolt carrier group is reassembled, apply a liberal amount of CLP to all exterior surfaces with particular emphasis to the friction points (i.e., rails and cam area). Put one drop of CLP in the cam pin track and two drops in the gas ports.

Cleaning and lubrication of the lower receiver group

Wipe any particles of dirt from the trigger mechanism with a clean patch or brush and place a drop of CLP on each of the pins for lubrication. Components of the lower receiver group can be cleaned with CLP and a brush.

Use a scrubbing action to remove all carbon residue and foreign material and then drain the CLP from lower receiver and wipe dry.

Cleaning and lubrication of the magazine

Disassemble the magazine, being careful not to stretch or bend the spring.

Scrub the inside of the magazine with a bristle brush, dipped in CLP, and wipe it dry.

The magazine is made of aluminum and does not need any lubrication.

Scrub the spring clean of any foreign material using an all-purpose brush dipped in CLP.

Wipe dry and apply a very light coat of CLP to the spring.

8. ASSEMBLY OF THE M16/M4 CARBINE RIFLE

Lower receiver group assembly

Press hammer to the rear (downward).

Insert the buffer assembly into the recess in the stock of the weapon.

Depress the buffer retainer so that the buffer assembly will insert into the recess completely.

Release the pin so the buffer assembly is locked into place.

Set the bolt carrier group down on the table.

Bolt carrier group assembly

Insert the bolt through the front end of the carrier with the extractor facing at the 11 o'clock position.

Insert the cam pin into the carrier and rotate it $\frac{1}{4}$ turn.

Insert the firing pin through the rear of the carrier and let it drop into the recess for the firing pin.

Insert the firing pin retainer pin into the carrier from left to right.

Set the bolt carrier group down on the table.

Upper receiver group and charging handle assembly

Replace the charging handle by placing the charging handle inside the upper receiver. This is done by lining up the grooves on the charging handle with the slots in the upper receiver and pushing it in about one inch. Then, insert the bolt carrier group, with the carrier key resting in the charging handle, into the upper receiver until they lock into place.

Assembly of major parts

Align the upper receiver with the lower receiver together, push in the pivot, and take down pins to lock the receivers together.

Insert the top of each hand guard cap and pull down on the slip ring so the bottom lip of the hand guard will slip in and lock in place when you release the slip ring.

Lock the bolt to the rear by pulling on the charging handle and pressing the bolt catch and letting the carrier go forward slowly until the bolt catch engages the bolt carrier group.

Return the charging handle to the original position. Place the selector lever on safe.

Replace the sling on the weapon.

9. **FUNCTION CHECK** A function check of the rifle consists of checking the operation of the rifle while the selector lever is in each position; Safe, Semi, and Burst

1. Pull the charging handle to the rear and release
 2. Place selector lever on SAFE
 3. Pull trigger – Hammer should not fall
 4. Place selector lever on SEMI
 5. Pull the trigger and hold to the rear – Hammer should fall
 6. Pull the charging handle to the rear and release
 7. Release trigger and pull to the rear again – Hammer should fall
- b. Place selector lever on BURST
1. Pull charging handle to the rear and release
 2. Pull trigger and hold to the rear – Hammer should fall
 3. Pull charging handle to the rear three times and release
 4. Release the trigger and pull again – Hammer should fall

10. **WEAPONS TRANSPORTS** Transports are used when no immediate threat is present of enemy. They are also beneficial when both hands are needed.

Strong Side Sling Arms (see figure 10)

- a. Release the pistol grip of the rifle
- b. Lower the butt stock of the rifle and bring the rifle to a vertical position
- c. With the right hand, grasp the sling above the left forearm.
- d. Guide the rifle around the right shoulder with the left hand and extend the right arm through the sling
- e. Place the sling on the right shoulder and apply downward pressure on the sling with the right hand to stabilize the rifle on the shoulder.
- f. Release the hand guard



Figure 10. Strong Side Sling Arms

Weak Side Sling Arms (Inclement Weather) (see figure 11)

- a. Release the pistol grip of the rifle
- b. Lower the butt stock of the rifle and bring the rifle to a vertical position
- c. Rotate the rifle outboard until the pistol grip is pointing toward the body
- d. Reach over the left forearm and grasp the sling with the right hand.
- e. Rotate the muzzle down with the left hand while sliding the right hand up the sling. Place the sling on the left shoulder
- f. Grasp the sling with the left hand and apply downward pressure to stabilize the rifle on the shoulder.
- g. Release the hand guard



Figure 11 Weak Side Sling Arms

Cross Body Sling Arms

The cross body transport is used when both hands are required for work, such as digging a fighting hole. It is employed with the web sling. The rifle is slung across the back with the muzzle up or down. Normally, the weapon will be carried with the muzzle down to prevent pointing the muzzle in an unsafe direction, unless the situation dictates otherwise. To assume this transport

- a. Muzzle Down (Weak Side) (see figure 12)
 - 1) With your right hand, grasp the sling.
 - 2) With your left hand, grasp the hand guards.
 - 3) Pull up on the rifle with both hands.
 - 4) Slide the sling over your head.
 - 5) Position the rifle so it is comfortable across your back.



Figure 12 Cross Body Muzzle Down

b. Muzzle Up (Strong Side) (see figure 13)

- 1) With your left hand, grasp the sling.
- 2) With your right hand, grasp the pistol grip.
- 3) Pull up on the rifle with both hands.
- 4) Slide the sling over your head.
- 5) Position the rifle so it is comfortable across your back



Figure 13 Cross Body Muzzle Up

REFERENCES

MCO 3574.2K

MCRP 3-01A

M16/M4 Review

1. Describe the characteristics of the M16/M4 Service Rifle.
2. Describe the difference between weapons condition 3 and condition 1.
3. List the differences between the M16 and the M4 Carbine.
4. What product is used to clean the service rifle?