

## MACHINE GUN CAL 7.62 MM

### I. CHARACTERISTICS:

#### A. GENERAL:

1. M60 Machine Gun - is an air cooled, belt-fed, gas operated automatic weapon. The weapon features fires from the open bolt position. Ammunition is fed into the gun by disintegrating metallic split-linked belt. Two barrels are issued with each weapon.
2. The weapon features fixed headspace, which permits rapid changing of barrels.

#### B. SIGHT:

The M60 has a front sight permanently affixed to the barrel.

3. The rear sight left is mounted on a spring type dovetail base. It can be folded forward to the horizontal when the gun is to be move. The range plate on the sight left is mark for each 100 meters, from 300 meters, to the maximum effective range of 1,000 meters. Range changes maybe use / made by using either the slide release of the elevating knob. The slide release is used for making major changes in elevation. The elevating knob is used for fine adjustments, such as during zeroing. The windage knob is located on the left side of the sight.

#### C. SAFETY:

4. A safety lever is located on the left side of the trigger housing. It has a safe position. On the safe position the bolt can not be pulled to the rear or released to go forward. The cocking handle, on the right side of the gun, is used to pull the bolt to the rear. The cocking handle must be returned manually to its forward position each time the bolt is manually pulled to the rear.

#### D. FLASH SUPPRESSOR:

5. A flash suppressor is affixed to the muzzle of the barrel. The risk on its suppressor vibrates during firing and dissipates flash and smoke.

#### E. BIPOD MOUNT:

6. The hinge shoulder rest provides support for the rear of the gun.
7. The movable carrying handle provides a method for carrying the gun short distances and can be positioned out of the gunner's line of sight.
8. The weapon can be fixed by using bipod or tripod mount.

### II. GENERAL DATA:

Ammunition - 7.62 MM      ball  
Tracer  
Armor piercing  
Armor piercing incendiary  
Blank  
Dummy  
Armor and armor piercing incendiary  
are not authorized for training.

Length of gun - - - - - 43.5 in  
Weight of gun - - - - - 23 lbs.  
Wt of tripod mount M122 with traversing & elevating mech. & pintle and  
platform group - - - 19.5 lbs.  
Maximum range - - - - - 3,725 m  
Maximum effective range - - 1,100 m  
Height of the gun on tripod mount M122 - - - 16.5 in

Rates of fire:

(Maintain) sustained - - - - - 100 rds per min  
(Change barrel every 10 min)  
(With speed) rapid - - - - - 200 rds per min  
(Change barrel every 2 min)  
Cyclic - - - - - 500 rds per min  
(Change barrel every 1 min)

Basic load of ammunition - - - - - 600 to 900 rds (on crew)

Gunner carries three (3) 100 rds bandoleers (one attached to weapon)

Asst. gunner carries 100 rds bandoleers per gun

Tracer burn out - - - - - 900 meters approx.

### III. OPERATION AND FUNCTIONING:

#### A. General:

The M60 machine gun is loaded, fired, unloaded, and geared in the open bolt position. The safety must be placed the FIRE position before the bolt can be pulled to the rear.

#### B. Loading:

1. Place the safety on the FIRE position.
2. Pull the bolt to the rear, using the cocking handle.
3. When the bolt is held to the rear, return the cocking handle to the forward position and place the safety on the SAFE position.
4. Raise the cover and insure that feedtray, receiver chamber is clear.
5. Place the first round on the bolt in the feedtray groove and close the cover insuring that the round remains in the feedtray groove.

#### C. Unloading:

Pull the bolt to the rear, place safety on the SAFE position, and return the cocking handle to the forward position. Raise the cover and remove any ammunition or link from the feedtray.

#### D. Clearing the Gun:

1. After the gun is unloaded.  
The cover, feedtray, receiver, and chamber are checked to insure they are clear.
  - a. The safety is placed on the FIRE position, the trigger is pull and the safety is placed on the SAFE position.
2. The gun is cleared during mechanical training instruction with the bolt forward, safety on the SAFE position and the cover raised. During

live fire exercise a cleaning rod through the bore until the end is visible in the receiver and then removed.

3. For detailed clearing procedures are appendix V para 25.

E. Cycles of functioning - the cycles starts by putting a round in the feedtray groove and the pulling the trigger, releasing the sear notch. It stops when the trigger is released and the sear again engage the sear notch in the operating rod. When the trigger is held to the rear, the rear of the sear is lowered and disengaged from the sear notch. This allows the operating rod and bolt to be functioning the steps of the cycle can be traced.

1. Feeding:

- a. As the bolt begins its forward movement, the feed can be forced to the right, causing the feed can layer to pivot in the opposite direction and forcing the feed pawl over the next round in the bolt, ready to place it in the feedtray groove when the rearward action occurs again.
- b. As the bolt move to the rear after firing, the cam roller on the top of the bolt forces the feed cam to the left. The feed cam lever is forced to pivot, moving the feed pawl to the right placing a round in the feedtray groove.

2. Chambering:

- a. As the bolt travel forward, the upper locking lug engages the rim of the cartridge. The pressure of the front and the rear cartridge guide hold the round so that positive contact is made with the upper locking lug of the bolt. The front cartridge guide prevent the link's forward motion as the round is stripped from the bolt.
- b. The upper locking lug carries the round forward. The chambering cam causes the nose of the cartridge to come downward into the chamber.
- c. When the round is full seated in the chamber, the extractor shape over the extractor rim of the cartridge and the ejector on the face of the bolt is depressed.

3. Locking - As the round is chambered, the bolt enter the barrel socket. The upper and lower locking lugs contact the bolt coming surfaces inside the barrel socket and continues forward, causes the bolt to complete its one quarters turn clockwise rotation. Locking is then completed.

4. Firing - After the bolt reaches its fully forward and locked position, the operating rod continues to go forward independently of the bolt, for a short distance. The yoke, engage between the firing pin spools carries the firing pin forward. The striker of the firing pin protrudes through the aperture in the face of the bolt, striking the primer of the cartridge and detonating it.

5. Unlocking:

- a. After the cartridge is fully forwarded and locked position, the gas port, part of the expanding gasses enter the gas cylinder through the gas port. The rapidly expanding gases enter the hollow gas

piston and force it to the rear. The operating rod, being in contact with the piston is pushed to the rear.

- b. As the operating rod continues to the rear, the operating rod yoke acts against the bolt coming slot. This causes the bolt to begin its counter-clockwise rotation. The upper and lower locking lug of the bolt, contracting the bolt coming surfaces inside the barrel socket causes the bolt to complete its one quarter turn rotation (counter-clockwise) and unlocks the bolt from the barrel socket. Unlocking begins as the yoke of the operating rod contacts the curve of the bolt coming slot, and ends as the bolt clears the end of the socket.
6. Extracting - While unlocking is going on, extraction is beginning. The rotation of the bolt in unlocking loosens the cartridge case in the chamber. As the operating rod and bolt continue to the rear, the extractor (gripping the rim of the cartridge) pulls the cartridge case from the chamber.
  7. Ejecting - As the case is withdrawn from the chamber the ejector expands. The ejector presses in the base of the cartridge case, forcing the front of the spent case against the right side of the receiver. As the bolt continues to the rear, the action of the ejector pushing against the base of the cartridge case to spin from the gun as the case reaches the ejection port. The empty link is forced out of the link ejection port as the rearward movement of the bolt causes the next round to be positioned in the feedplat groove.
  8. Cocking :
    - a. As the expanding gases force the gas piston to the rear, the operating rod is initially moved independently of the bolt, the yoke of the operating rod acts against the rear firing pin spool, withdrawing the firing pin from the primer of the spent cartridge case. The action of the operating rod yoke continuing to the rear against the rear firing pin spool fully compresses the firing pin spring.
    - b. As long as the trigger is held to the rear, the weapon will continue to complete the first seven steps of functioning automatically. When the trigger is released and the rear again engages the rear notch, the cycle of functioning is stopped and the weapon is cocked.

#### IV. MALFUNCTION, STOPPAGES AND IMMEDIATE ACTION:

- A. Malfunction - is a failure of the gun to function satisfactorily. Defective ammunition or improper operation of the gun by a crew member is not considered a malfunction of the gun are sluggish operation and runaway gun.
  1. Sluggish Operation and Corrective Action. Sluggish operation the gun usually is due excessive friction caused by diet of carbon, lack of proper lubrication, burred parts of excessive loss of missing gas port plug. Clean and lubricate the gun. Inspect thoroughly for burred parts and replace parts as necessary.
  2. Runaway Gun and Corrective Action. A runaway gun is a gun that continues to fire after the trigger is released. It may be caused by a

worn sear, worn sear notch or short recoil (where the operating group recoils sufficiently to feed sear notch) and caused by the loss of gas or excessive carbon build-up in the operating rod tube.

a) Hold the fire on the target until feeding is stopped or the ammunition is expended. The best method of stopping the gun depends on many factors such as the amount of ammunition remaining in the bolt, how the gun assault firing with the bandoleer attached to the gun the gunner continues to move forward keeping the gun on the target however, either the gunner or the assistant gunner may be able to stop the gun by:

- (1) Raising the cocker, thus stopping the feeding action.
- (2) Twisting or breaking the bolt to stop the feeding.
- (3) Grasping the cocking handle firmly and pulling it to the rear to stop the belt from going forward.

b) When the gun has ceased firing, disassemble it and check the sear and the sear notch for excessive wear. Check gas system to ensure that the gas port plug, gas cylinder extension and gas cylinder nut are tight. Clean the operating rod tube. Replace parts as necessary.

B. Stoppages - A stoppage is any interruption in the cycle of functioning caused by faulty action of the gun or faulty ammunition. Stoppages are classified by their relationship to the cycle of functioning.

C. Immediate Action - The action taken to reduce the stoppages without investigating the cause. This action must be accomplished within ten seconds, including waiting time, when the barrel is hot enough to cause the cook off.

1. If a stoppage occurs, five seconds,(the bolt must remain forward for the first five seconds to the possibility of a hang fire).
2. After the five seconds wait, raise the cover and remove the ammunition bolt and links from the feed tray.
3. Pull the cocking handle to the rear, making sure that the sear engages sear notch in the operating rod; close the cover immediately then return the cocking handle to its forward position.
4. During the retraction of the bolt, observe if the round is extracted and ejected.
  - a) If the round is not extracted, pull the trigger attempting to fire the round. If the round does not fire and the barrel is not, wait at least five minutes with the bolt in the forward position to preclude damage or injury in the event of the cock.
  - b) If a round is extracted, or when a round is removed from the chamber, inspect the weapon and the ammunition to determine the cause of the stoppage.
5. After clearing the weapon, reload, relay on the target and attempt to fire.

- E N D -

