

SECOND RECRUIT TRAINING BATTALION
MARINE CORPS RECRUIT DEPOT
PARRIS ISLAND, SC

U.S. RIFLE CAL. 30 M-1

The functioning of the M-1 Rifle consists basically of two movements: (1) The Rearward and (2) the Forward movements. There are ten steps to the rear movement: (1) Ignition, (2) Action of the gas, (3) Movement of the Operating Rod to the rear, (4) Unlocking of the bolt, (5) Withdrawal of the firing pin, (6) Extraction of the empty cartridge, (7) Ejection of the empty cartridge, (8) Cocking of the hammer, (9) Action of the follower, (10) Termination of the rearward movement.

(1) Ignition: When the rifle is loaded and the bolt is closed the hammer spring is compressed and the trigger lugs are engaged in the hammer hooks holding the hammer in the cocked position. Pressure is then applied to the trigger, the trigger lugs are disengaged from the hammer hooks, and the striker then protrudes from the face of the bolt and strikes the cartridge there by igniting it.

(2) Action of the gas: When the bullet passes the gas port some of the gases escape into the gas cylinder. The gas strikes the piston with sufficient force to drive the operating rod to the rear compressing the operating rod spring.

(3) Movement of the operating rod to the rear: The initial movement of the operating rod to the rear imparts no motion to the bolt for the first 5/16ths of an inch. The operating lug on the bolt merely slides in the straight section of the recess in the operating rod. This delay in the initial movement of the operating rod permits the bullet to leave the muzzle, thus clearing the enormous chamber pressure in the barrel and chamber before the bolt is opened.

(4) Unlocking the bolt: After the initial movement, the cam surface of the recess in the operating rod contacts the operating lug camming it up, rotating the bolt counter clockwise and disengaging the locking lugs from their corresponding locking recesses, in the receiver.

(5) Withdrawal of the firing pin: Rotation of the bolt also cams the hammer back from the firing pin and withdraws the firing pin into the bolt.

(6) Extraction of the empty cartridge: The operating rod continues to travel to the rear, carrying with the bolt, which slides along the receiver, the empty cartridge is carried from the chamber by the extractor.

(7) Ejection of the empty cartridge: The base of the cartridge case is continually pressed against the ejector, when the cartridge case clears the mouth of the breech the ejector throws the empty round up and to the right of the receiver.

(8) Cocking of the hammer: The rear end of the bolt rides over the hammer, forcing it back, compressing the hammer spring and comes to rest near the end of the receiver.

(9) Action of the follower: While the bolt is at its extreme rearward position the top cartridge is uncovered. The follower actuated by the follower arm and the follower rod which transmits this pressure from the operating rod spring, forces the cartridge upward in the clip so that the top cartridge is in the path of the bolt.

(10) Termination of the rearward movement: The rearward movement of the operating rod terminates when the rear end of its board section contacts the front face of the receiver.

U. S. RIFLE CAL. 30 M-1

Forward Movement:

(1) Action of the compressed operating rod spring: As the bolt starts forward, actuated by the compressed operating rod spring the lower part of the face of the bolt comes in contact with the base of the top cartridge of the clip, sliding it forward into the chamber, the hammer actuated by the hammer spring rides on the bottom of the bolt, and tends to follow it, but is caught and held by the trigger lugs, which engaged the hammer hooks. If the pressure on the trigger is still held back after firing, the sear will engage the rear hammer hooks, subsequent release of the trigger dis-engaging the sear from the hammer which then slides into engagement with the trigger lugs.

(2) Feeding: When the bolt approaches its forward position the rim of the cartridge is engaged by the extractor and the base of the live round forces the ejector into the bolt, thus compressing the ejector spring.

(3) Locking: The operating lug on the bolt cammed downward by the camming surface of the operating rod. This rotates the bolt clockwise engaging the locking lugs in the locking recesses. This locks the bolt.

(4) Termination of the forward movement: The operating rod continues to move 5/16ths of an inch until the rear end of the straight section of the recess in the operating rod contacts the operating rod lug on the bolt. Thus the rifle is ready to fire.

AUTOMATIC RELEASE OF THE OPERATING ROD: The automatic release of the operating rod which allows the bolt to close when a cartridge is inserted, in the receiver, is accomplished in the following manner: When the loaded clip is forced down into the receiver, it depresses the follower. As the follower nears the bottom of the receiver, the front end (square shoulder) of the follower arm contacts and rotates the accelerator. The accelerator in rotating about its pin in the operating rod catch assembly, bears on the toe of the bullet guide (which acts as a fulcrum) and forces down the front end of the operating rod catch assembly, thus releasing the operating rod. The operating rod and bolt are then moved downward by the pressure of the compressed operating rod spring.

AUTOMATIC EJECTION OF THE EMPTY CARTRIDGE: When the last round of a clip is fired, the operations of unlocking and opening of the bolt and extracting and ejecting of the empty cases are accomplished as already described. The bolt clears the tip of the receiver, in its movement to the rear and since the clip is empty the follower is pushed up to its extreme top position by the action of the follower rod and the operating rod spring. The position of the follower rod under these conditions is such that it cams the forward end of the operating rod catch upward to engage the hood in the operating rod; at the same time the rear (I-shaped) arm of the operating rod catch, pivoting about the follower arm pin, forces down the lug on the front end of the clip latch, thus rotating the clip latch and dis-engaging it from the clip. The clip ejector, which has been continually exerting upward pressure on the clip, throws out the empty clip when it is so dis-engaged. With the operating rod held to the rear by the operating rod catch, and the receiver empty, a loaded clip may be inserted without delay. Firing may then resume.

IMMEDIATE ACTION: Immediate action is the unhesitating application of a probable remedy for a stoppage.