

CHAPTER 2

OPERATION AND FUNCTION

This chapter discusses the operation of the M203 grenade launcher and its function when loaded with ammunition.

2-1. OPERATION

The grenadier's operations include loading, unloading, and firing the weapon. The weapon uses a *high-low propulsion system* to fire a 40-mm round. The firing pin strikes the primer, whose flash ignites the propellant in the brass powder-charge cup inside the *high-pressure chamber*. The burning propellant produces 35,000 psi chamber pressure, which ruptures the brass powder-charge cup at the vent holes and allows the gases to escape to the *low-pressure chamber* in the cartridge case. There the pressure drops to 3,000 psi and propels the grenade from the muzzle at a velocity of 250 fps. The grenade's 37,000 rpm right-hand spin stabilizes the grenade during flight and applies enough rotational force to arm the fuze. The weapon is unloaded with the barrel open and fired from a closed bolt. The launcher must be cocked before it can be placed on SAFE.

2-2. LOADING

To load the weapon, the grenadier must first press the barrel latch and slide the barrel forward. Once the barrel is in the forward position, the grenadier places the weapon on SAFE. Then he inserts clean, dry, undented ammunition into the chamber and slides the barrel rearward until it locks with an audible click (Figure 2-1).

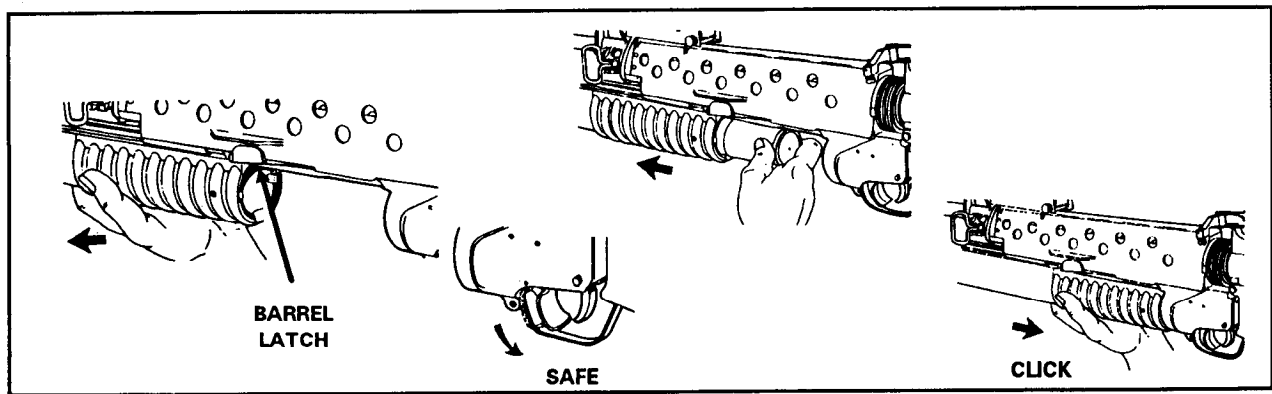


Figure 2-1. Loading the M203 grenade launcher.

W A R N I N G

KEEP THE MUZZLE POINTED DOWNRANGE AND CLEAR OF ALL SOLDIERS.

USE THE RIGHT AMMUNITION; NEVER USE HIGH-VELOCITY 40-MM AMMUNITION DESIGNATED FOR OTHER 40-MM WEAPONS SUCH AS THE MK 19; HIGH-VELOCITY ROUNDS ARE LONGER THAN THOSE USED IN THE M203, AND MAY CAUSE IT TO EXPLODE.

2-3. UNLOADING

To unload the grenade launcher, the grenadier must first depress the barrel latch and move the barrel forward. The cartridge case or round should automatically eject. If the case is stuck, he taps it with a cleaning rod to remove it (Figure 2-2). He places the weapon on SAFE, then slides the barrel rearward, locking it to the breech.

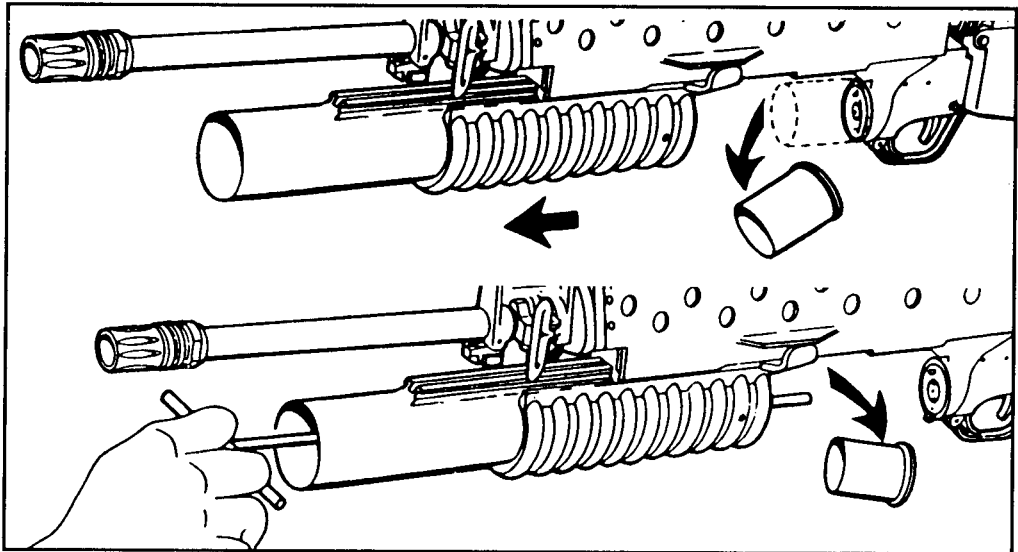


Figure 2-2. Unloading the M203 grenade launcher.

W A R N I N G

IF THE WEAPON HAS NOT BEEN FIRED, AVOID DETONATION BY EITHER CATCHING THE EJECTED ROUND OR HOLDING THE WEAPON CLOSE TO THE GROUND TO REDUCE THE DISTANCE THE ROUND CAN FALL.

2-4. CYCLE OF FUNCTIONING

Grenadiers can recognize and correct a stoppage if they know how the weapon functions. Loading a round into the chamber and pulling the trigger begin the parts of the weapon functioning in a cycle. Many of the actions occur at the same time, but are separated here for the purpose of explanation or illustration.

a. **Unlocking.** The cycle begins when the grenadier depresses the barrel latch to unlock the barrel assembly and slides the barrel assembly forward (Figure 2-3).

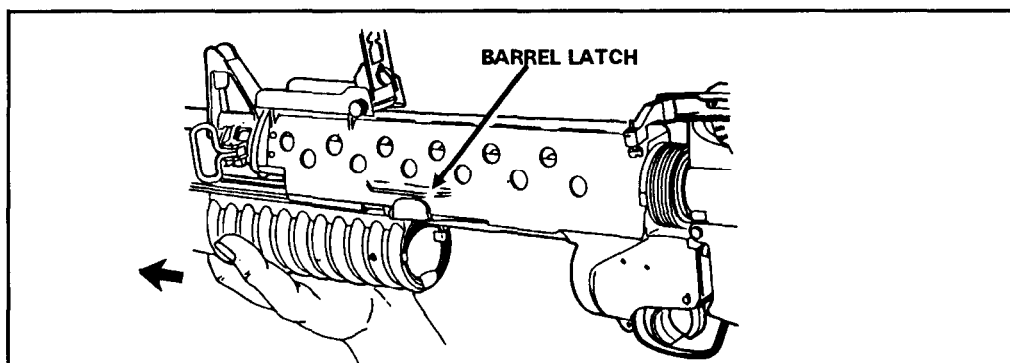


Figure 2-3. Unlocking the barrel assembly.

b. **Cocking.** The grenadier moves the barrel assembly forward then backward to cock the weapon. As the barrel assembly moves, it takes with it the barrel extension. Their movement causes the following to occur:

(1) As the barrel assembly and barrel extension, which are interlocked with the cocking lever, move forward, the cocking lever is forced down.

(2) The movement of the cocking lever in turn forces the spring-loaded firing pin to the rear.

(3) The spring-loaded follower also moves forward with the barrel extension.

(4) The barrel assembly continues forward, and as it does so, the barrel extension disengages from the cocking lever, which is then held down by the follower.

(5) The barrel assembly moves rearward, forcing the follower to the rear.

(6) The cocking lever again engages the barrel extension, which causes the firing pin to move slightly forward and engage the primary trigger sear, which cocks the weapon (Figure 2-4).

c. **Extracting.** Extracting and cocking occur at the same time. As the grenadier opens the barrel assembly, a spring-loaded extractor keeps the live round or spent cartridge case seated against the receiver until the barrel clears the cartridge case (Figure 2-5).

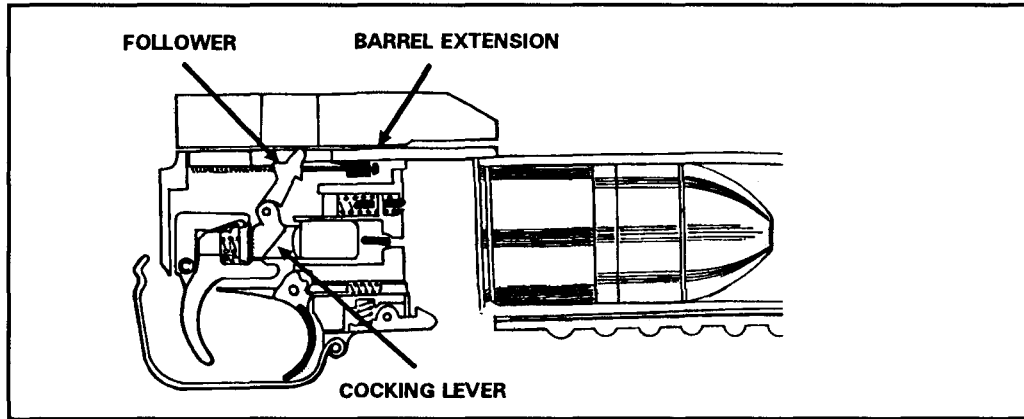


Figure 2-4. Cocking the M203 grenade launcher.

d. **Ejecting.** The spring-loaded ejector pushes the live round or spent cartridge case from the barrel assembly (Figure 2-6).

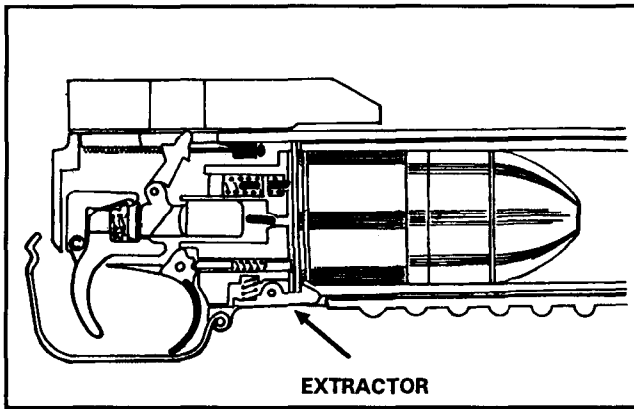


Figure 2-5. Extracting the round or cartridge case.

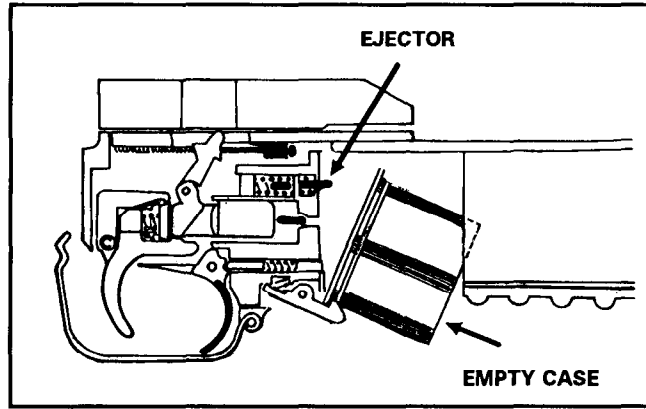


Figure 2-6. Ejecting the round or cartridge case.

e. **Loading.** With the barrel assembly open, the grenadier inserts a round into the breech end of the barrel (Figure 2-7).

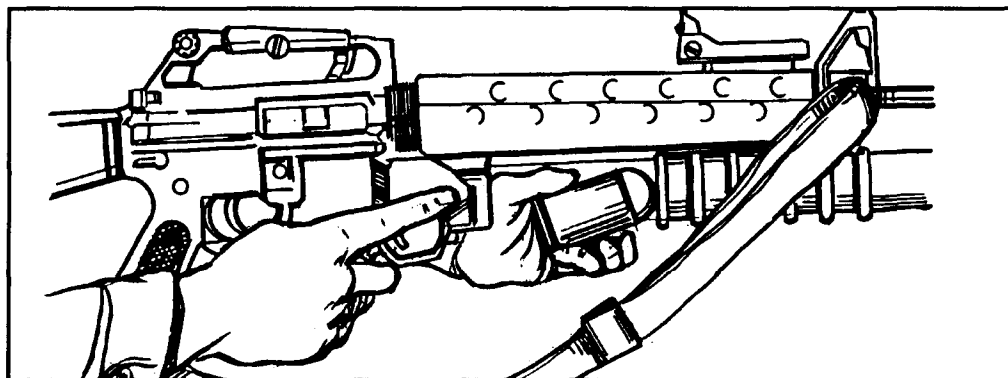


Figure 2-7. Loading the M203 grenade launcher.

f. **Chambering.** As the grenadier closes the breech end of the barrel assembly, the extractor contacts the rim of the cartridge and seats (chambers) the round firmly (Figure 2-8).

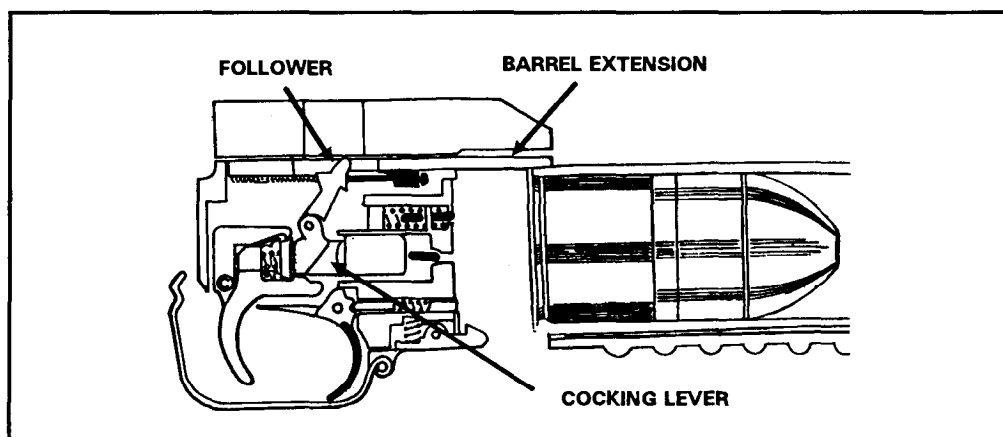


Figure 2-8. Chambering a round.

g. **Locking.** As the barrel assembly closes, the barrel latch engages it. The cocking lever engages the barrel extension so that it cannot move forward along the receiver assembly.

h. **Firing.** When the grenadier pulls the trigger, the primary trigger sear disengages from the bottom sear surface of the firing pin. This releases the spring-driven firing pin, forcing it forward against the cartridge primer (Figure 2-9).

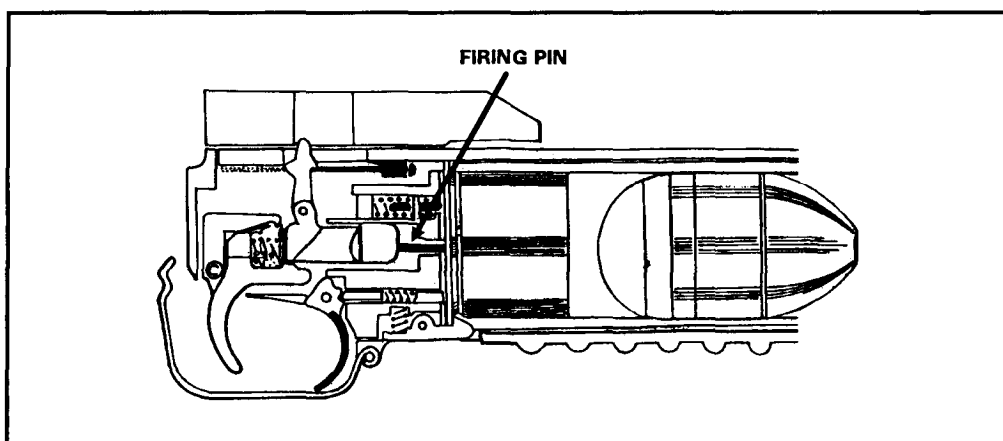


Figure 2-9. Firing the M203 grenade launcher.