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Sight Alignment, Sight Picture...



By GySgt. Rodney Smith

Teaching Marines muzzle awareness sounds simple, but enforcing it is difficult. Who is responsible? Is it solely the gunner, or is it the assistant gunner? In training, the range safety officer (RSO) and the officer-in-charge (OIC) may be ultimately responsible, but they aren't able to watch every Marine, all the time. Should you, as Marines, defer this responsibility to civilian instructors? A group of Marines had to answer this last question during a .50-cal machine gun and Mk-19 grenade launcher shoot while testing a thermal-sight.

On a slightly overcast morning, the Marines, assisted by civilian contractors, were testing the AN/PAS-13 thermal-weapons sight. It is a lightweight, thermal-imaging, monocular sight that allows Marines to acquire targets day or night.

The Marines first prepped the range by positioning a ground-mounted Mk-19 and a ground-mounted .50-cal machine side by side on the firing line. The RSO gave all personnel a range-safety brief, which included immediate-action drills for both weapon systems. Then the head civilian gave the Marines a class on how to work the sight. He used an unmounted sight for demonstrations during the class. None of the Marines had experience with the AN/PAS-13.

After the class, contract engineers and a battalion armorer mounted an AN/PAS-13 sight on a Mk-19 and a .50 cal. Marines loaded the two weapons, selected targets, and prepared to fire. Each gun position had a gunner, assistant gunner, and a civilian engineer to talk the Marines through the sighting process.

The Mk-19 had a small cord from its sight to a monitor approximately five meters behind the weapon. The monitor displayed the images seen through the sight and allowed a civilian engineer to give technical tips to the gunner and help him aim correctly.

The experienced machine gunner, who was being instructed by a second civilian engineer kneeling beside him, began to sight in on a tank approximately 250 meters down range. The two civilians talked the gunner through the procedures step by step. The gunner manipulated the sight and followed the instructions. Completely consumed with watching the images on the monitor, the assistant machine gunner, civilian instructor, and civilian engineer failed to notice the Mk-19's barrel

pointing toward the deck. The gunner, looking through the sight, didn't notice either.

With his target acquired, and a small audience glued to the monitor, the gunner opened fire, and a 3-to-5-round burst of 40mm, high-explosive rounds thumped into the deck. The rounds detonated approximately 20 meters forward of the firing line. Shrapnel blew past the gunner and struck two Marines on the firing line. Cease-fire was called, and the injured Marines were treated. Here are some of the factors that contributed to this mishap:

- The civilian engineer had skipped the step that elevates the weapon to the angle necessary to align with the aiming point viewed through the sight. This was a critical step, considering the weapon and ammunition being used.
- The engineer failed to take the machine gunner through all of the sighting procedures before firing the weapon. The engineer should have used a checklist to ensure each step in the sighting process was followed.
- An operational risk management (ORM) assessment was not completed before or during this test shoot. The ORM process would have identified that, during the aiming-in process, the sight picture may differ from where the gun will fire.
- It is unclear how much the civilian engineers knew about Mk-19 operation, Marine Corps machine-gunnery, and range procedures. Yet, they were conducting the training.
- While learning new procedures, the Marines were distracted from basic weapons handling and machine-gunnery skills.
- The RSO and the OIC for the range was the same Marine. Range regulations for this base clearly state that one Marine cannot be both. With only two guns firing, it is likely that a Marine acting solely as the RSO would have spotted such an obvious hazard.

Since civilians develop and produce most weapons, they are normally the duty experts. However, we should not assume that civilians are experts at following base range regulations or Marine Corps tactics, techniques, and procedures.

References:

1. TM-08521A-10/1A is the operators manual for 40mm, Mk-19 Mod 3.
2. MCWP 3-15.1. •

Mk-19 Reminders

Based on a number of malfunctions and recent injuries while using the Mk-19, warnings listed in TM-9-1010-230-10, (the operator's manual for machine gun, 40mm Mk-19) need to be reiterated. To prevent injuries to Marines using this weapon or who are close to it during firing, everyone must follow these precautions:

- Use only M385 (B576), M918 TP (B584), M383 HE (B571) and M430 HEDP (B542) ammunition.

- Do not fire high-explosive ammunition at targets closer than 310 meters (training) or 75 meters (during combat). Fragments can reach the gunner's position at distances less than 310 meters.

- The gunner and all Marines close to the weapon must wear helmets, body armor, single-hearing and eye protection. Roll down your sleeves and wear gloves. All Marines within 310 meters of a potential impact of M383 HE or M430 HEDP ammunition must wear a helmet and a flak jacket.

- When using high explosive (HE), high-explosive dual-purpose (HEDP), or training-practice (TP) ammunition, be alert to the symptoms of an obstructed bore, such as a muffled report

from the gun or smoke and debris coming from the bottom of the receiver.

- Inspect the weapon after any malfunction, stoppage, or other unusual occurrence during firing. If recharging is required, stop firing immediately. Don't attempt to reload and fire the weapon without first checking the barrel for an obstruction. Failure to do so may cause an in-bore detonation and personal injury. While clearing the weapon, check the feeder bolt and

receiver for damage or debris. Remove the bolt and backplate assembly and look through the receiver and barrel for damage and obstructions. If the barrel is obstructed, follow local SOP to remove it.

- If a round is lodged in the bore, use the removal tool

only for M430 HEDP (B542), M385 practice (B576), and M918 TP (B584) ammunition. Do not remove M383 HE (B571) projectiles with the round removal tool. Only trained and qualified Marines should attempt to remove and recover the round.

Navy and Marine Corps Ammo Info Notice 033-00, "Safety of Use, Operational Use of Mk-19 Mod 3 Machine Gun (1310-B542, B571, B576, B584)." POC: Anna Lucas, DSN 430-2107



Photo by Capt. Peter Forsythe