

MK-19 High Angle Fire

Restore the capability at the small unit level

by SSgt Eric M. Emmott

Snap, snap, snap! For the fourth time in just as many days, the Taliban had launched an attack from one of the compounds 500 meters away from their patrol base. The year was 2010, and a young platoon commander with 3d Battalion, 5th Marines found himself in an interesting predicament as he tried to stop the Taliban ambushes with one M2 .50 caliber machinegun, one MK-19 grenade launcher, an old Soviet era recoilless rifle, one medium machinegun squad, and his organic platoon assets. The first day the lieutenant had tried to fix the Taliban with his heavy machine gun and then attack the Taliban from across the field, but the Taliban would always break contact before the Marines ever got close. The second and third day the lieutenant laid in squad ambushes near the compounds, but both days it appeared the Taliban had been tipped-off and simply decided to launch the ambush from a slightly different direction. He requested CAS and mortars to help fight off the ambushes but was told they were being used by other company and battalion units.

After the platoon's first few attempts, the platoon commander went back to the drawing board and opened the floor to his platoon for ideas. His machinegun squad leader brought up the idea of employing the MK-19 in high-angle fire and using it like a mortar system. Having only seen it during his time at the Infantry Officer Course, the lieutenant thought it was worth a shot and decided to request a gunners quadrant from his battalion gunner. A few days later, the gunners quadrant arrived and the platoon started experimenting. The machinegun squad leader led the charge as he was the technical expert, a former division schools instructor who had been cross-trained in mortars, and af-

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ter a few hours of experimenting, the MK-19 gun team had figured it out. The lieutenant proceeded to establish and register "Target Reference Points" (TRPs) with the hi-angle MK-19. The next time the patrol base was attacked, the platoon quickly responded by fixing the enemy with the M2 .50 caliber machine gun and the recoilless rifle and then neutralized the enemy with the hi-angle MK-19 fire. While the lieutenant solved the problem with the help of his NCOs, the Marine Corps could have better set this platoon commander up for success by developing and institutionalizing the appropriate procedures and techniques across the force for high angle MK-19 fire.

While the current machinegun publication (*MCTP 3-01C: Machine Guns and Machine Gun Gunnery* published 1 September 1996; revised 2 May 2016) does not discuss high-angle MK-19 firing, the data tables required for the conduct of high angle firing can be found in Appendix C of the previous version: *MCWP 3-15.1*. These tables allow a gunner to establish an engagement area with high angle MK-19 fire along a principle direction of fire between 900 meters to 2021 meters. The reason targets cannot be engaged closer than 900 meters is because the angle of the barrel would be so extreme that the gun could not be fired safely. This article will suggest adding the high angle MK-19 data tables back to the current publication as well as formally documenting the following procedures and techniques to effectively employ the MK-19 in the high angle fire mode. Additionally, the article will identify two modifications to



There are several steps required to prepare the MK-19 for high-angle fire. (Photo by LCpl Alison Dostie.)



Figure 1. Gun crew.

the current way Marine Corps formal schools are teaching the employment of high-angle MK-19 fire that will facilitate quicker and more effective engagement of the enemy.

Current Procedures for High Angle Fire with the MK-19 MOD 3

The following are the current steps required to prepare a MK-19 for high angle firing with a four-man machine gun team as taught by the Advanced Machine Gunner Course and the Infantry Officer Course. (See Figure 1.):

- Swap out rear right leg from the M3 tripod with the front leg.
- Stage seven filled sand bags near the gun, three to four will be used for the front leg depending on the required angle of the gun, and the rest will support the rear legs.
- Acquire your direction of fire using a compass, this is a rough estimate but it needs to be as accurate as possible because of the tripod being fixed to the ground.
- Dig in the rear tripod foot; upon digging in the two feet, you then place

the left over sand bags on the back side of the tripod facing you.

- Once the tripod is set up then place the MK-93 cradle on to the tripod with the T&E.
- Mount the MK-19 on the tripod.
- Attach the feed throat inverted.

To refine your direction of fire, you need to move the two rear legs, and while using a compass, shoot an azimuth using the sighting wire to bisect the barrel of the MK-19. You will have to offset to the left of your direction of fire by 150 mils; this will account initially for drift, vibration from the gun, and other factors. Depending on the distance and angle of the barrel, this offset may be less, and this can be determined using the data tables provided in Appendix C of *MCWP 3-15.1*. Now that the gun is established, the team will need a gunners quadrant (GQ), laser range finder (LRF), and the data tables from Appendix C. These tools will allow the squad leader to “bubble up” the gun and get a precise azimuth for the direction of fire.

The squad leader serves as a fire direction center (FDC) giving correc-

tions to the gun/gun line. The team leader holds the ammo and insures the gunner and ammo Marines are doing their roles correctly. The gunner sits under the gun as close as possible so the ammo Marine can apply pressure to the gun; the gunner must fire the gun the same way every time or else he is going to throw the gun off target. The ammo Marine applies pressure with his forearms across the feed cover. When applying all the data on the GQ to the gun all parties must be in position as if they were firing and applying all pressure as well; this insures the data is correctly applied. If the tactical situation allows, it is recommended that at least 32 rounds are fired for registration to confirm data and placement of weapon and personnel. If not possible, achieving second burst effects is possible simply by using the data tables and identified procedures for the first burst and then making the appropriate adjustments off of observed impacts as the data tables do not account for temperature, weather, or adverse atmospheric.

Engaging the target should be done as if you were firing the MK-19 in its normal method, maintaining six to eight rounds per burst and then adjusting your travers and elevation (T&E) to get on target. If the target moves drastically or approaches from a different avenue of approach, then you will have to break everything down and repeat this entire process until your gun and sights are fixed in the new direction. Using the presented method has some issues; while firing the gun, it is fixed this searching and traversing is not possible. This could take a significant amount of time, which is why there are two recommendations for improving this transition time between firing missions.

Recommended Technique and Engineering Improvements

The first improvement that could be implemented immediately is a simple adjustment to the setup of the gun. As discussed, the ability to traverse the weapon out of the range of corrections with the T&E would require the establishment of a new gun position. The solution to the problem would be to create a circular pit around the front leg,

so that the depression of the rear tripod leg feet fit into the circular pit. The same amount of sand bags are still utilized requiring three to four sand bags on the front leg and the remaining three to four sand bags used on the rear legs. The firing of the weapon would force the rear legs to dig in; however, with the circular depression, an A-Gunner could easily grab the rear legs and traverse the weapons system if there had to be a major correction made. No additional digging would be needed. The time reduction by using this method would turn minutes of manipulating the gun into seconds and, with the GQ, guarantee accurate initial bursts. This method was tested at MCB Quantico with great success in applying the recommended technique adjustments and observing good effects with round in the impact area. This method can be easily implemented today.

With the proper time and equipment, high angle grenade launcher fire could be conducted faster and more reliably with some engineering modifications. If one were to combine the base plate of a M225 Mortar System with a modified M3 tripod front leg with a ball joint inserted into the rotating socket cap of the base plate, the weapons system would be able to rest on the ground to negate any variables that would arise from firing off of sand bags. (See Figure 2.) With

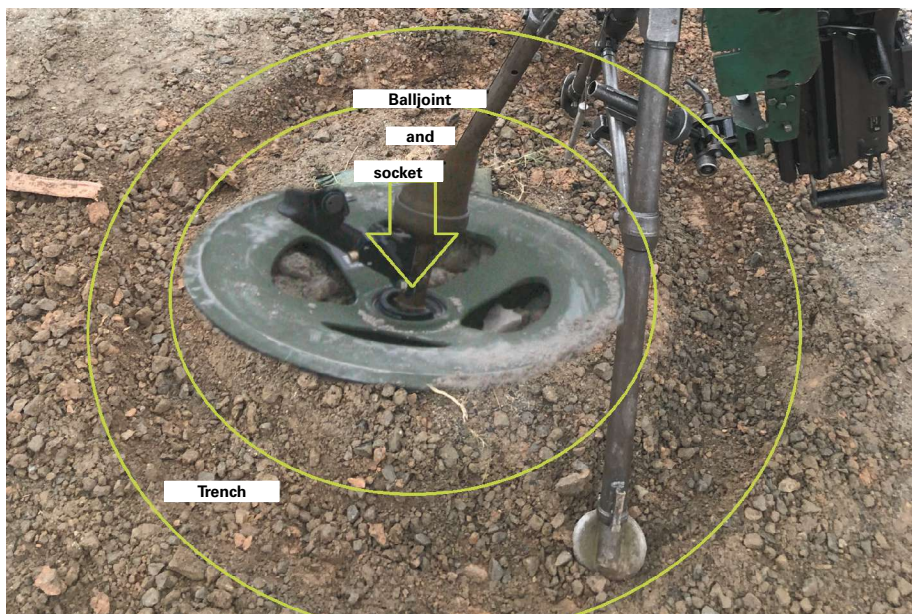


Figure 2.

the required equipment, this method would prove to be the preferred method but would take time to test and field the equipment to the required units.

Conclusion

Ever since machine guns revolutionized maneuver warfare during World War I, nations have been constantly improving machine gun capabilities as well as their employment techniques. Despite its importance during several key battles during World War II,

Vietnam, and Operation IRAQI FREEDOM (most notably the Battle of Najaf in 2004), high angle fire is no longer part of Marine Corps doctrine.¹ High angle grenade launcher fire provides the maneuver commander with another asset that he can use to create a more complete combined arms dilemma. As demonstrated by the rifle platoon in Afghanistan, high angle grenade launcher fire can be used in place of more conventional indirect fire assets when those assets are unavailable. The knowledge and data on high angle fire already exists and is taught at both the Advanced Machine Gunners School and the Infantry Officer Course. The techniques and procedures discussed in this article need to be institutionalized again and inserted back into our doctrinal publications. The application of high angle MK-19 fire must be a method that remains practiced as our battlefield becomes more complex and dynamic.



The trench that needs to be dug around the weapons system. (Photo by author.)

Note

1. Francis X. Kozlowski, "The Battle of An-Najaf," (Washington, DC: Marine Corps History Division, 2009).

