

INFANTRY LETTERS



SECOND OPINION ON ZEROING WITH NVDs

The procedures recommended in the article "Zeroing Techniques with Night Vision Devices" (INFANTRY, September-October 1996, pages 6-9) begs for a second opinion. The article culminates in 14 steps, with guidance not to omit one because each is critical. But is each step really critical? Unit trainers charged with conducting uncomplicated, relevant, and efficient training that will maximize the combat performance of soldiers with aiming lights in combat may want to consider omitting one step--or even all 14 steps.

Three of the steps involve zeroing the M16A2 during daylight, setting the sights to $8/3 + 1$ before zeroing aiming lights and setting sights back to $8/3$ after zeroing. These steps only add complexity and confusion, because the setting on the rifle sights is unrelated to the zeroing of aiming lights.

A cross of tape on a silhouette indicates a failure to understand the concept of zeroing. The goal is not precise shooting at 25 meters but an aiming light adjustment that will result in the highest probability of hitting combat targets. Research has shown that there are individual differences in perception of center-of-mass and that when a soldier is required to determine center-of-mass on a zero target, individual peculiarities are incorporated into the zero. In other words, a zero target that presents a visual perception similar to a combat target will result in the best combat zero.

There is no rationale for using an M16A2 zero target, because none of the features on the target relate to zeroing aiming lights, and the white surface may well reflect bloom from the aiming light. Also, any time an M16A2 zero target is

used as shown in Figure 1 of the article, it will not accomplish the intended purpose of providing a central aiming point unless the bottom of the target is cut so the scaled silhouette is at the center of the target sheet.

The 25-meter range provides an excellent opportunity for practice firing and initial zero, but the only rationale for firing at 25 meters is that we already have many firing points at that distance. The bullet may be intercepted at any point along its trajectory and brought into theoretical relationship with the aiming light spot; however, this procedure does not result in the best zero for all weapons. For optimum combat performance, the zero of aiming lights must be either conducted or confirmed at actual zero range.

The recommendation to construct a ruler that applies only to one device at one range reflects a requirement that training or hardware developers need to address. The article indicates that, at 25 meters, a click on one light moves bullet strike .64cm and the other 1.0cm. The three adjustments on the M16A2 will move bullet strike .35, .69, and .87cm. No valid rationale can be presented to show why all of these adjustments should not be the same. Commonality of adjustments is needed, not a ruler for each adjustment. Meanwhile, a combat soldier who can see bullets hitting six inches to the right of the aiming point at 100 yards should have some idea of how many clicks are required to bring bullet strike and aim point together.

The recommended transparency of 5.5cm is too large to result in a good zero at 250 meters. A good rule for establishing 25-meter zero criteria is that a visual angle extended to the actual zero range will cover a human-size target--4cm at 25 meters equates to a silhouette target at 300 meters. Therefore, zeroing should be conducted

under conditions that result in a better shooting performance, or the aiming light should be zeroed for 200 meters.

The aid to knob turning also reflects a need that training and hardware developers should examine. If soldiers cannot determine which way bullets will move, units should conduct appropriate training or developers should consider affixing directional marks, or both.

The negative training implications of using white light from a flashlight while wearing night vision goggles should be avoided if other training alternatives are available.

There are no shot-group analysis procedures that are unique to the zeroing of aiming lights. It should be noted, however, that it may not be appropriate to replace a target after four groups if no aiming light adjustment has been made, because a proper analysis will focus on all bullets above, below, left, and right of the strike point, not on the last shot group fired.

What steps are really critical? Schedule a field-fire or record range for night firing; a review of targets hit at various ranges will reveal whether critical steps have been accomplished.

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AUTHORS' RESPONSE ON ZEROING

We appreciate Mr. Art Osborne's continuing interest in rifle marksmanship and concur that some zeroing steps will change under combat conditions. In our research, we examined the points made by Mr. Osborne. Our article, of necessity, was limited in the scope of research findings that could be included.

The Dismounted Battlespace Battle Lab is continuing the effort to improve the design of aiming lights so that the zeroing process, whether dry-fire or live-fire, is expedited, without sacrificing accuracy, for all soldiers on all weapons.

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100th/442nd/MIS MEMORIAL

The 100th/442nd/MIS World War II Memorial Foundation has kicked-off its fundraising campaign for a monument that will memorialize the role of the 100th Infantry Battalion, the 442nd Regimental Combat Team, and the Military Intelligence Service in that war.

The monument will be erected on the walkway adjacent to the Japanese American National Museum as part of a major redevelopment effort in the heart of downtown Los Angeles. In order to begin construction in March 1998, the Foundation's goal is to raise \$2.5 million by the end of 1997.

For more information, write to the Foundation at 133 W. Gardena Blvd, Suite 205, Gardena, CA 90247; telephone (310) 327-4193.

DEBRA NISHINAKA-SKELTON
Executive Director

SHAEF/ETOUSA VETERANS ASSOCIATION REUNION

The SHAEF/ETOUSA Veterans Association (European Theater, World War II) will hold its 13th National Reunion in Kansas City, Missouri, and Abilene, Kansas, 10-13 October 1997.

SHAEF (Supreme Headquarters, Allied Expeditionary Force) led the cross-channel invasion of Europe during World War II under the command of General Dwight D. Eisenhower. ETOUSA (European Theater of Operations, U.S. Army) was the Army's administrative headquarters during the war.

For further information, contact me at 2230 South Overlook Road, Cleveland Heights, OH 44106; telephone (216) 721-0921; FAX (216) 229-0921.

WILLIAM C. LAHMAN

40mm Mk 19 SHORT OF EXPLOSIVE POWER

The problem with the Mk 19 is not a shortage of advocates, as Sergeant First Class Ronald Alley seems to fear (INFANTRY, November - December 1996, page 4). The problem is the palm-sized 40mm round's shortage of explosive power to blast a building, a bunker, or any vehicle with a modicum of armor.

The superiority of the 34-pound 106mm recoilless rifle (RR) round slamming into targets at more than 1,100 feet per second to lobbing tiny 40mm rounds has nothing to do with sentimentality for the RR, but instead addresses actual combat effectiveness. Sergeant Alley may not be aware that our M40A2 106mm design is currently manufactured and in widespread use all around the world by many armies for the purpose of shock action. We have dozens of 106mm RRs in storage, already paid for, that can be used to give our light forces the kind of shock action needed—as demonstrated in Panama and Somalia—at little or no cost to the Army. The cancellation of the M8 armored gun system and M551 Sheridan tank leaves our light forces without organic shock effect and direct fire support, a problem that must be solved, and as soon as possible.

The latest manufactured 106mm RR rounds can kill main battle tanks with full thicknesses of armor—including explosive reactive armor—not the measly two inches that the 40mm can pierce only if struck at an unlikely 90-degree angle. The 106mm will effectively bust reinforced bunkers and totally demolish buildings. Australian Army 106mm RRs have the CLASS laser sighting system, which extends its range to 1,800 meters with 80 percent

first-round-hit probability at night against moving targets. The latest electronic sights are ready to mount on the M40A2 just as easily as on the Mk 19. Try to get this accuracy with the garden-hose-style firing pattern of the Mk 19, and you'll only alert the enemy to kill you with his large-caliber cannon if he's in an armored fighting vehicle (AFV). The Mk 19s on HMMWVs (high-mobility multipurpose wheeled vehicles) in Somalia were adequate only to suppress the enemy and break contact; the Rangers would not have been saved without the allied AFVs on the scene (the same M113-type vehicles that we're using to build reefs), which were able to absorb the intense enemy fire that the Mk 19's best efforts had not been able to stop.

If you want to ride around the battlefield in an unarmored, land-locked (non-swimmable) HMMWV with just a grenade launcher and get clobbered by artillery fire or the typical Third World country's AFV with large-caliber direct-fire cannon, be my guest. But don't offer such impotent ideas as solutions to our airborne/light forces' urgent need for a battlefield dominating gun system. HMMWVs alone, with only 40mm Mk 19s, are not capable of duplicating the ability of the 106mm RR to win battles hands-down through overwhelming shock action and explosive effect against point targets. Hard targets must be completely destroyed with one shot, not peppered over time. The Mk 19 and its thin-skinned HMMWV are not designed to slug it out with rocket-propelled grenades (RPGs) or heavy machineguns. You don't trifle with an enemy strong point; you point, shoot, and blast it to smithereens, or else you're the one that gets blasted. The Mk 19 is an automatic grenade launcher, not a main gun; it must fire continuously to achieve destructive effects. Area suppression, yes—shock action, no. While not ideal, if we mount both systems—an RR and an automatic grenade launcher (AGL)—on every other armored HMMWV, we've given our soldiers a decisive edge.

The current Mk 19 is a development of the Vietnam war era series of AGLs and is just about as old

technologically as the 106mm RRs still in use by U.S. Army Special Forces (such as the 5th SF Group in Operation *Desert Storm*). We must avoid attitudes that consider things that are new to be automatically better; the current trend in military circles to supplant traditional firepower with high-tech, expensive weapons ignores the fact that combat demands violent, decisive firepower at the critical point. In combat, it is what kills that counts, not what is easy to do or "fun to shoot," like the Mk 19.

One gun system is not enough to defeat the increasing number of hard targets to be found in the urban environment. It will take a combination of gun systems on a survivable, fully

terrain-mobile platform that is air-deliverable and can move into firing positions, even against enemy small arms fire. The 106mm RR is for blasting hard, point targets; the 40mm Mk 19 is for area targets; the Javelin missile is for main battle tanks and helicopters. Place all three of these weapons on an autocannon/RPG-resistant applique armored M113A3 fighting vehicle, and you get a synergism of gun-missile-auto grenade cannon and infantry that is greater than you get if these systems are parceled out onto the soldiers' backs or soft-skinned HMMWVs, or even worse--put into storage, as is the case with dozens of U.S. 106mm recoilless rifles.

The lack of organic fire support in

our light units is an issue that is too serious to be viewed emotionally, and we cannot afford to be swayed by sentiment or intoxicated by high-tech promises. It's about what works and what doesn't work on the modern battlefield. The Mk 19, as good as it is, will not, by itself, give us the decisive shock effect that we can get from an AFV-mounted 106mm, an M3 84mm RAAWS (Carl Gustav), or even an M67 90mm recoilless rifle.

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TACTICAL SOPs REQUESTED

In order to create a TACSOP library that students may use while at the Infantry School, the Tactics Division of the School is asking units from company through brigade level to provide copies of their tactical SOPs. Units wishing to participate in this project are requested to forward copies of their SOPs to:

Commandant
U.S. Army Infantry School
ATTN: ATSH-ATT
Fort Benning, GA 31905

For further information, call the Chief, Tactics Division, Combined Arms and Tactics Directorate, at DSN 835-5726 or commercial (706) 545-5726.

