PEO Soldier's Enhanced Night Vision Goggle-Binocular

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The cold and snow in the marshlands of Aberdeen Proving Ground, Maryland, could not keep Program Executive Office Soldier from conducting a Soldier Touch Point on the Enhanced Night Vision Goggle-Binocular.

The STP included Soldiers from Bravo Company, 2nd Battalion, 504th Parachute Infantry Regiment, 1st Brigade Combat Team, 82nd Airborne Division from Fort Bragg, North Carolina; and Marines from The Basic School, Quantico Marine Corps Base, Virginia. They subjected ENVG-Bs to a variety of scenarios to see how effectively they worked and aided the Soldiers.

"This was the first time we've had multiple vendors put their ENVG-Bs through a practice operational assessment," said Capt. Josh Redmond, ENVG-B Assistant Product Manager. "We've never done an obstacle course, navigated tunnels or fired Rapid Target Acquisition with any variant of the ENVG-B."

Captain Redmond said the Soldiers wore the ENVG-B while going through obstacle courses and a tunnel complex, and they also carried out weapons and reflexive firing with RTA. In additional, they conducted squad attacks with room clearing and a movement to contact. All testing occurred both day and night.

Sgt. Wyatt Carpenter, Marine Cpl. John T. Fenley, and Spec. Jacob Lang listen during a briefing in the Military Operations in Urban Terrain building on Aberdeen Proving Ground, Maryland. (Courtesy photo) (Photo Credit: Courtesy photo.)

ENVG-B employs both night vision and thermal-sensing capabilities. The use of white phosphorous tubes, as opposed to the previous green phosphorous tubes, means Soldiers no longer see a green-tinted image. They now see nearly as clearly as one sees normally. Marine Cpl. John T. Fenley said the ENVG-B is so clear he is able to read with them. Being binocular, it also provides users increased depth perception versus that which is offered from the traditional monocular view.

"They have a natural aptitude for this technology," said Captain Redmond of Soldiers who grew up playing video and computer games. "This will make them move faster, observe targets from behind cover and update the command post instantly with situational awareness icons."

The second purpose was a formal test by Aberdeen Test Center on APG to qualify the Universal Helmet Mount Assembly for the Enhanced Night Vision Goggle III and ENVG-B, according to the captain. The UHMA will establish a standardized mounting fixture for legacy and future night vision devices.

At the end of this seventh STP, Captain Redmond was pleased with the results.

"I'm overjoyed with the outcome," Captain Redmond said. "The Soldiers genuinely like the equipment and want it now. The things that need to be improved aren't difficult engineering challenges and the vendors are working fixes now.

"We proved this technology is mature enough to head into a formal qualification as we rapidly approach our late Fiscal Year 2019 deliveries and fielding," Captain Redmond said.

One of the Soldiers participating was Staff Sgt. Tanner Trapp, who especially liked the ENVG-B and Family of Weapon Sight--Individual, or FWS-I. The FWS-I wirelessly transmits an image captured from a reticle mounted on the M4 Carbine to the ENVG-B. This allows the Soldier to see the carbine's aim point in the ENVG-B. Using RTA, Soldiers are able to engage a target without having to bring the carbine to the standard shoulder firing position. This cuts down valuable reaction time to a threat.

"Overall, I think it will make us more lethal," Sergeant Trapp said. "That thing is phenomenal. The capability it provides is ridiculous." He especially liked how the ENVG-B and FWS-I RTA bubble does not emit a light signature like the PEQ-15, which near-peers can see.

During an After Action Review following a day of weapons zeroing on the range, vendors solicited feedback from Soldiers who are working on variants of the ENVG-B. This gave Soldiers the opportunity to bring up issues they discovered. They told engineers that the ENVG-B locking mechanism seems to come loose, and the release buttons are too close together.

Soldiers noted that one side of the ENVG-B feels a bit heavier than the other. Because of this, helmet balance was off, affecting how the helmet sat on their head. Having the engineers present allowed the Soldiers to ask about addressing the issue.

Engineers also learned that the Soldiers tended to butterfly the binocular tubes to the side when not using them as opposed to pushing them up. This gave the engineers information on how Soldiers use the ENVG-B and could come in handy as they make design adjustments going forward.

Nevertheless, the feedback was not one-way only, resulting in teaching moments. For example, one Soldier mentioned that the compass on the ENVG-B seemed to be off by four degrees. An engineer explained that the ENVG-B compass is set for true north, not magnetic north, as typical commercial compasses use. An engineer clarified that the augmented reality of ENVG-B would automatically account for the differences between Magnetic and True North.

During the AAR, Soldiers explained the need to make the already durable ENVG-B as indestructible as possible. A common refrain from Soldiers was, "'Joe' is going to do what 'Joe's' going to do."

Marine Cpl. Fenley echoed a similar refrain for Marines: "'Indestructible' hasn't met a lance corporal."

Soldiers also expressed the importance of being able to secure the ENVG-B to their helmets, possibly with eyelets to allow cord or carabiner security. However, PEO Soldier stresses that every ounce matters and additional features could add nominal weight to the device. Undeterred, Soldiers replied that "Joe" was still going to do what was necessary to secure the device, regardless, and encouraged engineers to address the issue.

Captain Redmond said there were a couple of surprising points they learned from the STP. One was the size of the halo when using previous night vision devices. Bright light sources typically created a large halo that interfered with the view through the devices. The ENVG-B has a smaller halo that doesn't wash out the view as much as devices in the past. Soldiers learned the ENVG-B thermal sensors pick up right where the Image Intensification fails due to obscurants, according to the captain.

"One of the Soldiers stated the [ENVG-B] goggles have a small halo and don't wash out when looking at lights or even during day operations," he said. Night Vision and Electronic Sensors Directorate officials generated the specification to reduce the halo prior to the STP, which Industry fixed before the event. The fix clearly served a tactical purpose, according to the captain, and the STP validated it.

Finally, Marine Sgt. Peter J. Leon, The Basic School, said he liked the compass headings visible in his field of view with the ENVG-B. As a machine gunner, having a visible compass in his view while firing his weapon helps him to maintain the Minimum Safe Line that keeps him from endangering his fellow Marines. Previously, determining MSL meant he had to look down at a compass and determine the headings for the MSL.

"It allows me to keep my eyes on target while engaging," Sergeant Leon said.

With each Soldier Touch Point and feedback from Soldiers and Marines, PEO Soldier learn more ways to make the ENVG-B into a device that will improve Soldier lethality. ■

Russell Petcoff of PEO Soldier Public Affairs contributed to this article.