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Joint Non-Lethal Weapons Program



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Improved Acoustic Hailing Device Nears Milestone C

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As part of the Improved Acoustic Hailing Device (IAHD) logistics demonstration, Staff Sgt. Derrick Byrd of the Army Combined Arms Command attempts to operate the IAHD with instructions from only the device's manual. U.S. Army photo by Katherine Mahan

As U.S. Service members face a variety of missions across the world, the Joint Non-Lethal Weapons Program (JNLWP) is working to outfit warfighters with operationally suitable and effective non-lethal weapons. As part of this effort, the JNLWP is sponsoring the development of the Improved Acoustic Hailing Device (IAHD) to provide warfighters with an additional escalation-of-force option to minimize casualties and collateral damage.

The IAHD is a developmental non-lethal, counter-personnel, long-range hailing and warning device. The device is capable of producing highly directional sound beams, allowing users to project warning tones and intelligible voice commands beyond small-arms engagement range. IAHDs can operate from a variety of platforms, such as tripods, ships and other vessels, High Mobility Multi-purpose Wheeled Vehicles (Humvees), trucks and stationary platforms, such as guard towers. The IAHD is nearing a Milestone C decision, which will move the program into the production and deployment stage of the Department of Defense acquisition process.

The IAHD will provide U.S. forces with a crucial non-lethal capability and escalation-of-force option. The Department of Defense defines non-lethal weapons as "weapons, devices and munitions that are explicitly designed and primarily employed to incapacitate targeted personnel or materiel immediately, while minimizing fatalities, permanent injury to personnel and undesired damage to property in the target area or environment. Non-lethal weapons are intended to have reversible effects on personnel and materiel."

Non-lethal weapons provide warfighters with escalation-of-force options when lethal force is not the best first response. These capabilities assist warfighters in discerning intent, delaying and deterring individuals, and discriminating targets in a variety of missions ranging from full-scale combat to humanitarian relief—all while minimizing casualties and damage to property.

Specifically, IAHD capabilities will enable U.S. forces to more effectively communicate with and determine the intent of a person, crowd, vessel or vehicle at a safe distance and potentially deter them prior to escalating to lethal force.

"First and foremost, the IAHD is a communication system," said Jim Reinhold, IAHD Project Officer with the Army's IAHD product team. Reinhold's team manages the IAHD program on behalf of the JNLWP. "The IAHD's greatest overall benefit to the warfighter is that the device improves communication between the troops and the people they might encounter during a mission," said Reinhold.

U.S. troops can use the IAHD for force protection, peacekeeping, humanitarian missions and other situations where they need to either communicate at long range or determine intent.

"The IAHD can be used to communicate with potential hostiles and innocent civilians and aid in determining intent," said Jeff Drobik, Acoustic Hailing Device (AHD) Lead Project Engineer with the Army's AHD Product Team. "If an oncoming individual is asked to stop and they keep coming, then the warfighter can increase the escalation of force according to local standard operating procedures and rules of engagement."

Since the bombing of the Marine compound in Beirut in 1983, communicating with and determining the intent of an individual, crowd or approaching vessel or vehicle at long range has become a priority for U.S. forces. After the U.S.S. Cole attack in 2000, operational units began directly purchasing and utilizing several commercial-off-the-shelf (COTS) AHD products.



U.S. Soldiers set up a Long-Range Acoustic Device (LRAD) along a roadside in Iraq. This LRAD is a commercial-off-the-shelf Acoustic Hailing Device.

U.S. Army photo by Spc. Bobby Allen

Over the past few years, the JNLWP has sponsored AHD research and development that has led to the current IAHD program. In fiscal year 2006, the JNLWP began sponsoring an extensive evaluation of COTS AHD products to assess their capabilities and compare those results to the current operational needs of U.S. forces. As a result of this evaluation, the program identified deficiencies among available COTS AHDs. This led to the fiscal year 2007 start of the current IAHD acquisition program. The Army is the lead Service for the IAHD program, with the Navy and the Coast Guard also involved in the effort.



U.S. Sailors evaluate commercial-off-the-shelf Acoustic Hailing Devices in a maritime environment during a recent operational user evaluation at Cheatham Annex, Va. U.S. Navy photo by Matt Franks

The IAHD incorporates improvements to COTS AHDs based on Service needs. Improvements include changes to the device's power source, as well as an increase in the device's voice intelligibility and projection range.

"The IAHD will allow for better communication, helping warfighters determine intent and separate the combatants from the noncombatants," said Reinhold.

Most recently, the JNLWP sponsored an IAHD logistics demonstration at the Army's Aberdeen Test Center at Garrison Aberdeen Proving Ground, Md., on July 22. Performing a logistics demonstration is among the many tasks required to reach a Milestone C decision.

The goals of the demonstration were to ensure that the device's instructional manuals are correct and complete and that operators can use the device correctly and effectively in the field with only a manual for assistance. To this end, IAHD program managers observed two Army Combined Arms Command Soldiers install, operate, troubleshoot and dismantle the IAHD with the assistance of only the device's manual.



*As part of the IAHD logistics demonstration, two Army Combined Arms Command Soldiers attempt to assemble the IAHD with the assistance of only the device's manual.
U.S. Army photo by Katherine Mahan*

According to program managers, the IAHD logistics demonstration went well and accomplished its goals. The demonstration validated the IAHD manual and revealed the need for just a few minor changes.

"We were pleased with the demonstration's execution and results and even more pleased with the IAHD's progression through the acquisition process," said demonstration attendee Frank Hubbard, who monitors the IAHD program for the Joint Non-Lethal Weapons Directorate. "Reaching a Milestone C decision and fielding a device that meets requirements is something that is worth all the effort, and the IAHD is almost there."

Representatives from the Army's IAHD product team attended the IAHD logistics demonstration. The team, based at Picatinny Arsenal, N.J., is managed by the Army's Program Executive Office Ammunition, Project Manager for Close Combat Systems, Product Manager Improvised Explosive Device Defeat/Protect Force (PM IEDD/PF). The Army's Armament Research, Development and Engineering Center's (ARDEC) Munitions Engineering and Technology Center executes the IAHD program for PM IEDD/PF. The Army's ARDEC Integrated Logistics Support Team, also at Picatinny, executed the demonstration. Representatives from the Army Research Laboratory's Manpower and Personnel Integration Program attended the demonstration to assess and

evaluate the impact of the IAHD's material design on U.S. troops. Representatives from the Army Evaluation Center came to gather results for their independent evaluation of the IAHD's ability to meet program requirements.



*As part of the IAHD logistics demonstration, Staff Sgt. Colin Silver (left) and Staff Sgt. Derrick Byrd from the Army Combined Arms Command attempt to install the IAHD on a Humvee with instruction from only the device's manual.
U.S. Army photo by Katherine Mahan*

The JNLWP continues to work with the Services and industry to bring the IAHD to a Milestone C decision. The acquisition effort will result in a thoroughly developed and tested IAHD that meets warfighter requirements, giving U.S. forces an additional escalation-of-force option for complex missions in a variety of environments.