

Army Maneuver Force LRAD Applications



LRAD – Filling a Critical Gap in EOF

LRAD systems resolve any ambiguity of intent and facilitate rapid and decisive force protection on the battlefield and during military operations by providing operators and crews the ability to create significant standoff ranges, unequivocally determine intent, favorably resolve uncertain situations and save lives on both sides of the Long Range Acoustic Device®.

Using Long Range Communication in EOF

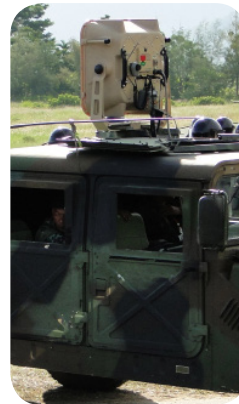
The Army's role in conflicts has evolved toward greater emphasis on managing interaction with the civilian population. Military organizations around the world are using Long Range Acoustic Devices to fill the gap between the initial engagement and employing lethal force. LRAD systems were developed in response to the deadly attack on the USS Cole that resulted in death and injury to 56 sailors. The USS Cole was equipped with an arsenal of lethal force, but had no way of determining the intent of the suicide mission bent on destroying it until it was too late. Since LRAD was first introduced in 2003 the product line and applicable missions have expanded from shipboard anti-terrorism force protection solutions to becoming a critical part of layered defense and attack strategies for land forces around the world. LRAD has saved the lives of soldiers and innocent civilians and has enabled maneuver forces to quickly make accurate life and death decisions to stand down or open fire.

As part of a layered communication and EOF strategy, LRAD systems provide military personnel time and distance to distinguish between security threats and innocent civilians before employing lethal force. At distances ranging from 200 meters up to 3 kilometers, LRAD systems broadcast focused (15° - 60°), highly intelligible multilingual hails, warnings and commands to security threats or large crowds. LRAD also broadcasts powerful deterrent tones to initiate the EOF based on a threat's actions.

Through the use of voice commands and deterrent tones, LRAD unequivocally determines intent at distance and is an essential component in all EOF protocols.

LRAD systems have proven highly effective for many Army applications including:

- Communicating at safe distances to groups or individuals in their native language
- Unequivocally determining intent from within the safety of armored vehicles
- Broadcasting warning tones to deter and disperse potential hostiles
- Creating large standoff zones
- Establishing and enforcing perimeter security using LRADs as an 'acoustic fence'
- Mass notification
- Area denial
- Convoy communications
- Cordon and search operations
- PSYOPs
- Base security and mass notification
- Avoiding accidental shooting incidents



Thousands of LRAD systems have been deployed in over 60 countries worldwide with proven performance and reliability in all types of weather conditions and environments. Portable LRADs range from the handheld LRAD 100X weighing just 7 kgs to the remotely operated LRAD-RX pan and tilt system designed for permanent installations. Operationally these systems can communicate effectively over wind, crowds, engine noise, and into vehicles and buildings at ranges of several hundred meters to over 3 kilometers. Every LRAD comes with an all-weather microphone and LRAD's MIL SPEC MP3 player to record and playback messages on the fly or to broadcast live or pre-recorded warnings, commands and messages in any language for any operational scenario.

LRAD systems are the most thoroughly tested acoustic hailing device (AHD) on the market, having successfully passed approximately 40 separate U.S. government tests including all MIL STD testing for heat, humidity, and shock. LRAD systems feature rugged military construction and have been tested and approved by ARDEC and the Aberdeen Test Center.

The LRAD Solution

LRAD systems are easily integrated with remote weapons stations, enabling soldiers to remain protected inside HMMWVs, MRAPs, Strykers and other armored vehicles while adding the vital capability of scaling the use of force through clear communication and non-lethal deterrence.

Using powerful, long-range communication to increase standoff distances enhances the safety of maneuver forces by keeping civilian populations at extended ranges and providing additional time to assess threat situations and respond appropriately.

LRAD solutions are available for all types of Army use including:



The LRAD 100X is a self-contained hand portable hailer that is 20 - 30 decibels (dB) louder than standard bullhorns and megaphones. Optimized driver and wave-guide technology ensure crystal clear voice communication so every syllable is understood over distances up to 600 meters. This extraordinary acoustic performance comes in a rugged package that can be operated in all weather conditions making it ideal for soldiers and small vehicles.



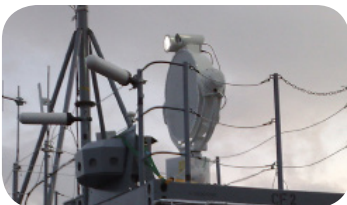
The LRAD 300X is a low profile, lightweight solution particularly suited for use on armored vehicles. The LRAD 300X is easily installed with a variety of temporary or permanent vehicle mounting options to provide Army forces long-range communications and a highly effective hailing and warning capability over distances up to 1000 meters



The LRAD 500X produces nearly 100% intelligible voice transmissions over distances up to 2 kilometers providing large vehicles and convoys with the means to issue clear, authoritative voice commands and deterrent tones to create large safety zones. The extended frequency range of the LRAD 500X ensures voice commands in any language are clearly heard and understood over distance, even inside targeted vehicles with engines running.



The LRAD 1000Xi broadcasts powerful multilingual voice messages and deterrent tones over distances up to 3 kilometers. Designed to meet stringent MIL SPEC standards and larger security installations, the LRAD 1000Xi features greater broadcast coverage area, rugged construction, low operating power requirements, all weather use and flexible mounting. The LRAD 1000Xi also has several system options including night vision, high-powered spotlight and laser dazzler.



The LRAD-RX features a camera, high intensity searchlight (optional), a robust, IP-addressable full pan and tilt drive for precise aiming and tracking, and can be integrated with radar to provide automated security threat alerts. The LRAD-RX broadcasts highly intelligible warnings and instructions that can be heard and understood over distances up to 3 kilometers. Through the use of focused, multilingual commands and deterrent tones, the LRAD-RX creates increased standoff zones and an immediate remote response for large base and perimeter security installations.



LRAD in Action

Over 200 LRAD 100X systems are in use in Afghanistan for long-range communication purposes. In one application, soldiers rappel from helicopters into remote areas equipped with 100X systems stored in tactical packs. As soldiers enter a village, 100X systems are used to communicate greetings and instructions to villagers in their native language. The LRAD 100X has proven to be louder, lighter and more robust than previously purchased COTS and program of record products. The wireless option enables soldiers to operate the 100X from over 100 meters away.

Army PSYOPs switched to LRAD after having extensive issues with their legacy loudspeaker equipment. When their assigned contractor was unable to fulfill their requirements and after extensive testing, they selected the LRAD 100X for dismounted operations and the LRAD 300X with OGPK mount for vehicle installations. The procurement of 112 LRAD systems greatly simplified logistics, vastly improved audio output, and reduced their vehicles radar signature while freeing up 4 cubic feet of space within their vehicles.

The LRAD 500X was used on the U.S. Secretary of Defense's Project Sheriff vehicle where it was found to be "the most effective non-lethal capability" on the system. Vehicles would roll into a village, play the LRAD warning tone then play messages in host nation languages. Compliance was immediate and repeated when vehicles entered villages.



LRAD's capability to reduce deadly incidents was highlighted in a recent article regarding the 200th Military Police Command's upcoming LRAD deployment ([HYPERLINK "http://www.army.mil/article/97665/New_equipment_gives_Reserve_MP_Soldiers___/"](http://www.army.mil/article/97665/New_equipment_gives_Reserve_MP_Soldiers___/) http://www.army.mil/article/97665/New_equipment_gives_Reserve_MP_Soldiers___/):

"Especially in the context of military police work, the LRAD is useful in its ability to disperse crowds, preventing Soldiers from having to use deadly force. This critical war-fighting ability reduces the number of casualties and gives Soldiers the luxury of only engaging a potential target as a last resort."

"The way I see it is if we can prevent a Soldier from pulling a trigger, then it's a good thing," Truitt said. "There are two aspects when we talk about young Soldiers. First, we don't want them engaging anyone they don't have to because it could turn on us. But the other aspect is about the Soldier -- if he engages a target he didn't have to, he's going to have to deal with it."

"If we can help keep him from doing that, we'll help him the long run," Truitt continued.

.....

All of the functions the LRAD offers can be operated via remote control from a distance,



minimizing Soldiers' interactions with locals -- a factor Truitt said is critical within the fog of combat.

An infantryman and master sergeant in the Army Reserve, Truitt said he remembers a time when equipment like the LRAD didn't exist, thereby putting Soldiers in situations that might prevent them from mission accomplishment.

"[It used to be] that we didn't get the equipment I am now buying," said Truitt. "I now look at the capabilities and see how much it could have enhanced what we could have done."

Although the LRAD is available to MP units deployed to Afghanistan, Truitt said it isn't included in the Modification Table of Organization and Equipment, or MTOE. Despite this, he added, the equipment shouldn't be considered an item of luxury either, because of its ability to enhance combat readiness and mission accomplishment.

"It may not be on the MTOE, but it's not a 'nice to have' item," Truitt said. "It's a combat multiplier that gives us an advantage over the enemy."

"In the Army, we talk about shoot, move, communicate," Truitt continued. "Well, this is that communicate part. Communications is the key not only in winning in engagements, but also hearts and minds. The fewer people we have to engage the more we are able to keep Soldiers safe, as well as not engage the local populous in deadly force."

It isn't just in wartime, however, that the equipment proves to be useful. In peacetime the LRAD can be used for riot control and the prevention of chaos. An example of this, said Truitt, took place recently when the Chicago Police Department deployed the LRAD during the NATO Summit this past summer to prevent protesters from getting close to the site.



"Regardless of the mission you're on, whether you're a combat unit or combat support, the LRAD is multi-usage," he said. "It's not just useful for this war, but it will also be useful in our future endeavors -- there are a lot of ways it can be used." "It isn't just in wartime, however, that the equipment proves to be useful. In peacetime the LRAD can be used for riot control and the prevention of chaos. An example of this, said Truitt, took place recently when the Chicago Police Department deployed the LRAD during the NATO Summit this past summer to prevent protesters from getting close to the site."

"Regardless of the mission you're on, whether you're a combat unit or combat support, the LRAD is multi-usage," he said. "It's not just useful for this war, but it will also be useful in our future endeavors -- there are a lot of ways it can be used."



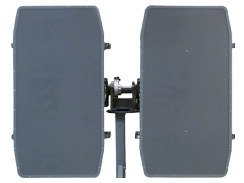


Army's AHD of Choice – LRAD 500X

In 2005, the Army and the JNLWD, in conjunction with CASCOM, identified a critical capability gap. Their analysis found that soldiers could not adequately communicate in host nation language from a safe distance to adequately limit EOF. Soldiers were being placed in situations where they could only choose to shoot or not shoot, resulting in many unnecessary indigenous civilian casualties. Other non-lethal tools failed to provide adequate direction to inform civilians what they needed to do to avoid EOF and potentially lethal consequences.

AHDs had previously been provided in Army EOF kits, but Army testing revealed they were inadequate to effectively communicate beyond the typical standoff firing range during convoy protection, at entry control points, for crowd control and on FOB perimeters. To address this capability gap the Army and JNLWD went to the industry to develop a communications tool that could communicate up to 300 meters over 88dB of background noise. The LRAD 500X won the improved acoustic hailing device competition and was chosen as the solution.

The LRAD 500X has Army safety certification and in 2007 successfully completed a full battery of testing at Aberdeen Test Center. Systems have been fielded on FOBs, MRAPs, LSVs, LCUs and at ECPs around the world.



	LRAD 100X™	LRAD 300X™	LRAD 500X™	LRAD 1000Xi™	LRAD RX™	LRAD 2000X™
Max dB	137dB	143dB	149dB	153dB	153dB	162dB
Max Range	600+ Meters	1,000+ Meters	2,000+ Meters	3,000+ Meters	3,000+ Meters	3,500+ Meters
Operational Range	250 Meters	350 Meters	650 Meters	1,250 Meters	1,250 Meters	3,000 Meters
Power	Battery / Vehicle 90-260 VAC	12-24 VDC	12-24 VDC 90-260 VAC	90-260 VAC	90-260 VAC or 48 VDC	90-260 VAC

Products not to scale.



LRAD – Saving Lives on Both Sides of the Device

LRAD is an all-weather, robust, combat-proven integrated system to support soldiers at all tactical levels in their critical missions. LRAD systems enhance force protection on the battlefield with a compact, combined suite for deployment by individual operators and crews to create significant standoff areas, unequivocally determine intent, safely alter behavior, and favorably resolve uncertain situations. Widespread LRAD use in mounted and dismounted Army operations will enable soldiers to initiate and scale their EOF by rapidly determining hostile intent and clearly providing instructions in host nation languages, resulting in lifesaving decisions for soldiers and civilians.





About LRAD Corporation

LRAD Corporation is using long range communication to resolve uncertain situations peacefully and save lives on both sides of its proprietary Long Range Acoustic Device®. LRAD® systems are in service in more than 60 countries around the world in diverse applications including fixed and mobile military deployments, maritime security, critical infrastructure and perimeter security, commercial security, border and port security, law enforcement and emergency responder communications, emergency warning and mass notification, asset protection, and wildlife preservation and control. For more information about the Company and its LRAD systems, please visit www.lradx.com.

LRAD Corporation
16990 Goldentop Road, STE A
San Diego, CA 92127
858.676.1112

www.LRADX.com

© 2013 by LRAD Corporation

