

# The Long Range Acoustic Device: Don't Call It a Weapon—Them's Fightin' Words

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*American Technology Corp.'s Long Range Acoustic Device (LRAD) is not a weapon, military or otherwise; it is an effective long-range communications device used to clearly broadcast critical information, instructions and warnings.*<sup>1</sup>

## I. Introduction

You have been posted at the checkpoint for several hours.<sup>2</sup> Besides roadside bombs, you feel the most likely way you might be killed is by a vehicle loaded with explosives.<sup>3</sup> You look over to your squad leader as he mumbles, "Sitting ducks. That's all we are."<sup>4</sup> Your buddy next to you agrees and says he is "just hanging around waiting to get blown up."<sup>5</sup> Their fatalism is doing little to take your mind off the fact that you have nine months to go in your fifteen-month deployment.<sup>6</sup>

So far, all the vehicles that have passed through the checkpoint have complied with the wooden signs, the written directions, and your hand and arm signals.<sup>7</sup> Nevertheless, you cannot shake the anger you feel towards

the military lawyer who briefed you on escalation of force and the rules of engagement.<sup>8</sup> Your resentment has not subsided since you left the auditorium that day: Shoot at what you perceive as a threat and get investigated by "the judge,"<sup>9</sup> or do not shoot and get blown up.<sup>10</sup> You wonder, "What does the lawyer know, and why does the military make lawyers teach escalation of force and rules of engagement anyway?"<sup>11</sup>

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<sup>1</sup> Robert Putnam, *LRAD No Weapon*, TRIB. LIVE, Oct. 27, 2009, [http://www.pittsburghlive.com/x/pittsburghtrib/opinion/letters/s\\_649951.html#](http://www.pittsburghlive.com/x/pittsburghtrib/opinion/letters/s_649951.html#).

<sup>2</sup> DOD NON-LETHAL WEAPONS PROGRAM, ANNUAL REPORT 2008, EXPANDING WARFIGHTER CAPABILITIES 1 (2008) [hereinafter NLWP ANNUAL REPORT]. The fictional scenario in this article is loosely based on the Introduction to the Annual Report, which asks the reader to "[i]magine yourself manning one of the countless checkpoints throughout Iraq or Afghanistan since the beginning of the Global War on Terror." *Id.*

<sup>3</sup> See, e.g., Tim King, *Five Soldiers Killed by VBIED in Iraq Among Latest Casualties*, SALEM NEWS.COM, Apr. 12, 2009, [http://www.salem-news.com/articles/april122009/casualty\\_update\\_4-12-09.php](http://www.salem-news.com/articles/april122009/casualty_update_4-12-09.php) (describing "another long group of names and circumstances detailing the deaths of Americans" in both Afghanistan and Iraq).

<sup>4</sup> See Bartle Breese Bull, *Checkpoint Iraq: A Tactic That Works*, WASH. POST, Mar. 13, 2005, available at <http://www.washingtonpost.com/wp-dyn/articles/A28924-2005Mar12.html>. The quotations in this sentence (and the next) are actual statements made by Soldiers. Both were recorded by the author and are utilized in this primer to illustrate the sometimes helpless feelings servicemembers have while manning vehicular checkpoints.

<sup>5</sup> *Id.*

<sup>6</sup> See Rod Powers, *Army Deployment Lengths*, ABOUT.COM, Apr. 14, 2007, <http://usmilitary.about.com/od/terrorism/a/ardeplength.htm> ("All soldiers in the U.S. Central Command area of operations will serve 15-month tours in the region beginning immediately, Defense Secretary Robert M. Gates announced on April 11, 2007.").

<sup>7</sup> See CENTER FOR ARMY LESSONS LEARNED, ESCALATION OF FORCE HANDBOOK 55 (July 2007) [hereinafter EOF HANDBOOK] (describing how defensive measures such as hand and arm signals, signs, flags, loudspeakers, spotlights, and laser pointers can help servicemembers guide traffic at a vehicular checkpoint) (on file with author).

<sup>8</sup> See Christopher C. Pascale, *Keep 'Em Away from My Marines*, MARINE CORPS GAZ., Aug. 2008.

There is nothing more confusing, disheartening, and discouraging to a Marine who is going to go, or has just returned from, war than for another servicemen, Marine or not, with little or no credibility, telling him about the Law of War, Code of Conduct, and post-traumatic stress disorder (PTSD). During the past 4 ½ years that I have been in the Corps I've seen captains who are attorneys, skilled in litigation, rather than engineers, infantryman, or those from the intelligence community speak to young men and women, Active and Reserve, about the Law of War and the Code of Conduct in ways that lead them to believe that the only purpose for the period of instruction is to tell them that they are very likely to go to prison if they are on either end of a violent situation that may occur during their deployment. Returning from Iraq in 2005, we generally angry, depressed, and in some cases suicidal Marines attended a class on PTSD given by a second lieutenant who had not been to Iraq with us, did not know what we were going through, and appeared to be on the end of a "tag, you're it" situation where he won the prize of being the slide reader. Our consolation, in turn was to feel our blood pressure rise while this Marine learned the degrees of his comfort when talking in front of people and which will make him feel like quite the colonel when he addresses his own battalion one day in the future.

*Id.*

<sup>9</sup> A term frequently used to describe a military lawyer.

<sup>10</sup> See, e.g., CTR. FOR LAW & MILITARY OPERATIONS, THE JUDGE ADVOCATE GEN.'S LEGAL CTR. & SCH., U.S. ARMY, TIP OF THE SPEAR, AFTER ACTION REPORTS FROM JULY 2008–AUGUST 2009, at 223–24 (Sept. 2009) [hereinafter TIP OF THE SPEAR]; CTR. FOR LAW & MILITARY OPERATIONS, THE JUDGE ADVOCATE GEN.'S LEGAL CTR. & SCH., U.S. ARMY, FORGED IN THE FIRE, LEGAL LESSONS LEARNED DURING MILITARY OPERATIONS 1994–2008, at 176 (Sept. 1, 2008) [hereinafter FORGED IN THE FIRE] (capturing descriptions of the "investigation workload" and explaining "the large volume of all varieties of administrative investigations" in a deployed environment).

<sup>11</sup> See, e.g., TIP OF THE SPEAR, *supra* note 10, at 180–86 (citing numerous after-action reports that illustrate the substantial involvement of judge advocates in rules of engagement training to units); see also INT'L & OPERATIONAL LAW DEP'T, THE JUDGE ADVOCATE GEN.'S LEGAL CTR. & SCH., U.S. ARMY, OPERATIONAL LAW HANDBOOK 73 (2009) [hereinafter

As you continue to stare down the road, you conclude that the briefs are provided so the military can court-martial you if you make a mistake.<sup>12</sup> There has to be something better than wooden signs, hand and arm signals, and warning shots to determine if a driver has hostile intent. You genuinely want to avoid mistakenly killing innocent women and children, but you are also concerned for your own safety.<sup>13</sup>

The Long Range Acoustic Device (LRAD) was designed primarily to “hail, warn, and notify” vehicles and sea vessels at a distance and was developed to assist servicemembers with difficult scenarios like the one described above.<sup>14</sup> The LRAD allows U.S. personnel to more easily determine the intent of approaching vehicles at a safe distance.<sup>15</sup> The manufacturer describes the device as a “highly directional, warning, and deterrent system” that “uses high . . . intensity focused acoustic output to communicate over distance with authority and high intelligibility.”<sup>16</sup> More specifically, it allows users to give voice commands and warnings beyond the range of small arms.<sup>17</sup> Because of its small size, the LRAD can be mounted

on a number of different platforms, including guard towers, tripods, vehicles, ships, and trucks.<sup>18</sup> The user’s ability to transmit messages “in a highly directional beam . . . reduces the risk of exposing nearby personnel or peripheral bystanders to harmful audio levels.”<sup>19</sup>

Despite the device’s nonviolent purpose, multiple conflicting media reports portray the LRAD as more than just a communication device by using terms like “weapon,”<sup>20</sup> “gun,”<sup>21</sup> “sound cannon,”<sup>22</sup> and “sonic cannon,”<sup>23</sup> that can “inflict pain-or even permanent deafness.”<sup>24</sup> Regardless of how it has been described by the media, the LRAD is not a weapon if it is used for its intended purpose. Instead, it is a lawful communication tool for use in complex operational environments.

Part II of this article discusses why the LRAD was developed and how the LRAD can be used to assist the U.S. military in contemporary counterinsurgency operations. Part III describes the weapons review process and concludes that the LRAD, when used for its intended purpose, is a helpful communication device, not a non-lethal weapon.<sup>25</sup> Finally,

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OPLAW HANDBOOK] (“Judge Advocates (JA) participate significantly in the preparation, dissemination, and training of ROE.”).

<sup>12</sup> See, e.g., David Wood, *Making U.S. Policy Work on the Mean Streets of Iraq*, LEATHERNECK.COM, Dec. 27, 2006, <http://www.leatherneck.com/forums/showthread.php?t=39149>.

Here comes a car careening around a corner, and Marines have about five seconds to determine whether it is a suicide bomber or a family on the way to market. If they judge wrong, their squad might be blown to smithereens, or an innocent family could be shredded by automatic rifle fire and the Marines brought up on charges of killing civilians.

“[I]t’s easy to sit back in the command center going, ‘You should have done this or that,’” grouses a Marine. “You’ve got a heartbeat to make a decision.”

“[G]uys are thinking, ‘You could be on your way to Leavenworth,’” says a second Marine, referring to the military prison in Kansas.

*Id.*

<sup>13</sup> See Jaime Holguin, *7 Iraqis Killed at Checkpoint*, CBS NEWS, Mar. 31, 2003, <http://www.cbsnews.com/stories/2003/04/01/iraq/main547091.shtml> (describing in graphic detail the aftermath of an engagement of a vehicle “packed with women and children,” which resulted in the “mangled bodies” of two children).

<sup>14</sup> Press Release, Joint Non-Lethal Weapons Program, Acoustic Hailing Device Officially Added to Family of Non-lethal Systems (June 22, 2007) (on file with author) (announcing a contract was awarded to “American Technology Corporation on May 17, to design, develop and build four Acoustic Hailing Devices” to “enable U.S. forces to more effectively determine intent of a person, crowd, vessel, or vehicle at a safe distance and potentially deter them prior to escalating to lethal force.”).

<sup>15</sup> Scott Stuckey, Vice President, Bus. Dev., Am. Tech. Corp., Long Range Acoustic Device Operations and Safety Training (2009) (PowerPoint Presentation) (on file with author).

<sup>16</sup> *Id.*

<sup>17</sup> Acoustic Hailing Devices (AHD) Fact Sheet, Joint Non-Lethal Weapons Program, Feb. 2008, [https://www.jnlwp.com/misc/fact\\_sheets/AHD%201%](https://www.jnlwp.com/misc/fact_sheets/AHD%201%20Feb%2008.pdf)

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[https://www.jnlwp.com/misc/fact\\_sheets/AHD%201%20Feb%2008.pdf](https://www.jnlwp.com/misc/fact_sheets/AHD%201%20Feb%2008.pdf) [hereinafter Acoustic Hailing Devices (AHD) Fact Sheet].

<sup>18</sup> *Id.*

<sup>19</sup> LRAD Corporation—Product Overview, <http://www.lradx.com/site/content/view/15/110/> (last visited Aug. 8, 2010).

<sup>20</sup> Adam Blenford, *Cruise Lines Turn to Sonic Weapon*, BBC NEWS, Nov. 8, 2005, <http://news.bbc.co.uk/2/hi/africa/4418748.stm>.

<sup>21</sup> *Georgian Police Accused of Brutality*, RUSSIA TODAY, Nov. 9, 2007, [http://rt.com/Top\\_News/20071109/Georgian\\_police\\_accused\\_of\\_brutality.html](http://rt.com/Top_News/20071109/Georgian_police_accused_of_brutality.html) (last visited Jan. 14, 2010) (“Georgian police are being accused of brutality during Wednesday’s violent crackdown on opposition protesters in Tbilisi. TV pictures showed officers and soldiers using a range of weapons to disperse crowds, including rubber bullets, tear gas and a sonic gun.”) (on file with author).

<sup>22</sup> Ian Urbina, *Protesters Are Met by Tear Gas at G-20 Conference*, N.Y. TIMES, Sept. 24, 2009, available at <http://www.nytimes.com/2009/09/25/us/25pittsburgh.html> (discussing how “police fired a sound cannon that emitted shrill beeps, causing demonstrators to cover their ears and back up . . . City officials said they believed it was the first time the sound cannon had been used publicly.”).

<sup>23</sup> *I Beat Pirates with a Hose and Sonic Cannon*, BBC NEWS, May 17, 2007, [http://news.bbc.co.uk/2/hi/uk\\_news/6664677.stm](http://news.bbc.co.uk/2/hi/uk_news/6664677.stm) (stating how “after dragging his injured colleague Som Bahadur Gurung to safety, he saw off the heavily armed mercenaries by hitting them with a hi-tech sonic cannon.”).

<sup>24</sup> William M. Arkin, *The Pentagon’s Secret Scream*, L.A. TIMES, Mar. 7, 2004, available at <http://articles.latimes.com/2004/mar/07/opinion/op-arkin7>.

<sup>25</sup> U.S. DEP’T OF DEF., DIR. 3000.3, POLICY FOR NON-LETHAL WEAPONS (9 July 1996) [hereinafter DoDD 3000.3]. Non-lethal weapons are defined as:

[W]eapons that are explicitly designed and primarily employed so as to incapacitate personnel or material, while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment.

[U]nlike conventional lethal weapons that destroy their targets principally through blast, penetration and

Part III discusses why the LRAD, even if used to intentionally cause pain (which *would* render it a non-lethal weapon), would still comply with the principles of the law of war.

## II. Why the LRAD Was Developed

### A. Historical Background

On 12 October 2000, a U.S. naval vessel, the USS *Cole*<sup>26</sup> was attacked by terrorists<sup>27</sup> while refueling in the port of Aden, Yemen.<sup>28</sup> The USS *Cole* was rammed by a small boat filled with explosives, killing seventeen sailors.<sup>29</sup> Investigations into the incident resulted in a report commissioned by the Department of Defense (DoD).<sup>30</sup> Among other findings, the report concluded,

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fragmentation, non-lethal weapons employ means other than gross physical destruction to prevent the target from functioning.

*Id.*

<sup>26</sup> DDG 67 Cole, GLOBALSECURITY.ORG, <http://www.globalsecurity.org/military/agency/navy/ddg-67.htm> (last visited Mar. 4, 2010) (explaining the “USS Cole is the first warship named for Sergeant Darrell S. Cole, USMC (1920–1945). Sergeant Cole was posthumously awarded the Medal of Honor for his conspicuous gallantry in the campaign at Iwo Jima.”).

<sup>27</sup> History, USS COLE (DDG 67), <http://www.cole.navy.mil/site%20pages/history.aspx> (last visited Mar. 4, 2010).

<sup>28</sup> YEMEN, CIA—THE WORLD FACTBOOK, <https://www.cia.gov/library/publications/the-world-factbook/geos/ym.html> (last visited Mar. 4, 2010) (explaining that “Yemen is in the Middle East, bordering the Arabian Sea, Gulf of Aden, and Red Sea, between Oman and Saudi Arabia”).

<sup>29</sup> USS *Cole* Casualties, ARLINGTON NAT’L CEMETERY WEBSITE, <http://www.arlingtoncemetery.net/usscole-main.htm> (last visited Mar. 4, 2010). Memorialized are

Chief Petty Officer Richard Costelow, Signalman Seaman Recruit Cheron Luis Gunn, Seaman James Rodrick McDaniels, Seaman Recruit Lakiba Nicole Palmer, Operations Specialist 2nd Class Timothy Lamont Saunders, Ensign Andrew Triplett, Seaman Apprentice Craig Bryan Wibberley, Hull Maintenance Technician 3rd Class, Kenneth Eugene Clodfelter, Mess Management Specialist Seaman Lakeina Monique Francis, Information Systems Technician Seaman Timothy Lee Gauna, Engineman 2nd Class Mark Ian Nieto, Electronics Warfare Technician 3rd Class Ronald Scott Owens, Engineman Fireman Joshua Langdon Parlett, Fireman Apprentice Patrick Howard Roy, Electronics Warfare Technician 2nd Class Kevin Shawn Rux, Mess Management Specialist 3rd Class Ronchester Mananga Santiago, Fireman Gary Graham Swenchon Jr..

*Id.*

<sup>30</sup> U.S. DEP’T OF DEF. USS COLE COMMISSION REPORT (EXECUTIVE SUMMARY) (9 Jan. 2001), <http://www.dod.mil/pubs/cole20010109.html> [hereinafter USS COLE REPORT].

Since the attack on Khobar Towers<sup>31</sup> in June 1996, the Department of Defense (DoD) has made significant improvements in protecting its servicemembers, mainly in deterring, disrupting, and mitigating terrorist attacks on installations. The attack on USS COLE (DDG 67), in the port of Aden, Yemen, on 12 October 2000, demonstrated a seam in the fabric of efforts to protect our forces, namely in-transit forces. Our review was focused on finding ways to improve the US policies and practices for deterring, disrupting, and mitigating terrorist attack on US forces in transit.<sup>32</sup>

The DoD report also concluded that development of “resource credible deterrence standards; deterrence specific tactics, techniques and procedures; and defensive equipment packages” were also needed.<sup>33</sup> Most importantly, the report found that “more responsive application of currently available military equipment, commercial technologies, and aggressive research and development can enhance the [antiterrorism/force protection]<sup>34</sup> and deterrence posture of transiting forces.”<sup>35</sup> Finally, the report recommended that the “Secretary of Defense direct the Services to initiate a major unified effort to identify near-term [antiterrorism/force protection] equipment and technology requirements, field existing solutions from either military or commercial sources, and develop new technologies for remaining requirements.”<sup>36</sup>

The attack on the USS *Cole* highlighted the need for additional tools, like the LRAD, to protect servicemembers.<sup>37</sup> The tragedy of the USS *Cole* revealed gaps in force protection that acoustic devices, like the

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<sup>31</sup> See Stephanie Watson, *Khobar Towers Bombing Incident*, ENCYCLOPEDIA.COM (2004), <http://www.encyclopedia.com/doc/1G2-3403300438.html> (describing the attack on 25 June 1996, when “a truck laden with explosives ignited in front of the Khobar Towers apartment building in Dhahran, Saudi Arabia” killing 19 American servicemen and wounding hundreds more).

<sup>32</sup> USS COLE REPORT, *supra* note 30.

<sup>33</sup> *Id.*

<sup>34</sup> U.S. DEP’T OF ARMY, REG. 525-13, ANTITERRORISM (11 Sept. 2008) (defining “antiterrorism” as “[d]efensive measures used to reduce the vulnerability of individuals and property to terrorist acts, to include limited response and containment by local military and civilian forces”; and “Force Protection” as “[a]ctions taken to prevent or mitigate hostile actions against DOD personnel (to include Family members), resources, facilities, and critical information. Force protection does not include actions to defeat the enemy or protect against accidents, weather, or disease.”).

<sup>35</sup> USS COLE REPORT, *supra* note 30.

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*; see also NLWP ANNUAL REPORT, *supra* note 2, at 3 (“The warfighter’s need for non-lethal weapons is evident throughout the world.”).

LRAD, could fill, and DoD began exploring the development and potential acquisition of such devices.<sup>38</sup>

## B. Today's Counterinsurgency Fight

Minimizing unnecessary loss of life through the measured application of necessary force is vital to fighting an insurgency as "nothing moves the population against one side or another as much as the indiscriminate use of force."<sup>39</sup> Many measures can be taken to determine whether an approaching vehicle is demonstrating hostile intent.<sup>40</sup> The use of laser pointers, tire strips, laser dazzlers, and communication devices can "yield valuable clues as to the driver's intent, such that Soldiers can make more accurate determinations of whether hostile acts or hostile intent are present."<sup>41</sup> Making accurate assessments about the threats that exist can be more easily achieved if "the intent of a person, crowd, vessel, or vehicle" can be determined at a "safe distance and potentially deter them prior to escalating to lethal force."<sup>42</sup>

Statistics continue to illustrate the need to improve checkpoint operations.<sup>43</sup> In Afghanistan, in 2008, 514 escalation of force incidents were reported by the International Security Assistance Force (ISAF).<sup>44</sup> During these incidents, eighty-three local nationals were injured and twenty-seven were killed.<sup>45</sup> A subsequent investigation revealed that none of the killed or injured represented improvised explosive device threats to ISAF troops.<sup>46</sup>

<sup>38</sup> Acoustic Hailing Devices (AHD) Fact Sheet, *supra* note 17.

After the U.S.S. Cole attack in 2000, this priority was addressed by operational units directly purchasing and utilizing several of the Commercial Off the Shelf (COTS) AHD products available on the market.

[O]n May 17, 2007 a contract was awarded, based on a full and open competition, to American Technology Corporation to design, develop and build four modified COTS Acoustic Hailing Devices for the U.S. Army, U.S. Navy and U.S. Coast Guard.

*Id.*

<sup>39</sup> EOF HANDBOOK, *supra* note 7 (stating "Force must be perceived by the people as judicious, appropriate, and proportional to the threat, while still protecting our Soldiers . . . . Plan for and employ force protection equipment to help increase reaction time and reduce unnecessary casualties."); *see also* U.S. DEP'T OF ARMY, FIELD MANUAL 3-24, COUNTERINSURGENCY 1-25 (Dec., 2006) [hereinafter FM 3-24].

<sup>40</sup> *Id.*

<sup>41</sup> OPLAW HANDBOOK, *supra* note 11, at 81.

<sup>42</sup> Acoustic Hailing Devices (AHD) Fact Sheet, *supra* note 17.

<sup>43</sup> Int'l Sec. & Assistance Force, Force Escalation Awareness Training (Jan. 2009) (PowerPoint Presentation) (on file with author).

<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

<sup>46</sup> *Id.*

In Iraq, the challenges are similar. A recently redeployed unit remarked in an after-action report that "in all but one case, the [escalation of force] incident involved innocent civilians (or at least no proven hostile intent). In most cases, the Iraqis involved in the incident were not paying attention or did not understand the signals used by U.S. Forces."<sup>47</sup>

It is extremely important in a counterinsurgency environment to apply appropriate force precisely "so that it accomplishes the mission without causing unnecessary loss of life or suffering."<sup>48</sup> In the fight against insurgents, servicemembers may be tempted to use excessive force. However, "through planning, preparation, and training, the number of those incidents can be decreased and the lethality of the incidents reduced."<sup>49</sup>

Based on lessons learned and a growing body of statistics, the Secretary of Defense has made incorporating non-lethal capabilities into DoD operations a priority by stating:

[M]ilitary Departments will incorporate employment of nonlethal capabilities into existing and future doctrine and will develop a Joint Integrating Concept for Non-Lethal Capabilities with enhanced joint training, education, war gaming, and exercises. Combatant Commanders will include the employment of non-lethal capabilities in training and exercises. Military Departments will ensure that domestic response forces are equipped, trained, and ready to employ non-lethal capabilities."<sup>50</sup>

Having identified a need for non-lethal capabilities, the DoD has repeatedly sought to supply its servicemembers with non-lethal tools, such as the LRAD.<sup>51</sup>

<sup>47</sup> TIP OF THE SPEAR, *supra* note 10, at 177; *see also* EOF HANDBOOK, *supra* note 7, at 81.

Civilians don't know what to do when coming into contact with the U.S. military—true or false? The answer is decidedly "true." In fact, as hard as it is for Soldiers to predict the next move of an ordinary civilian approaching a hasty checkpoint, it may be just as hard for that civilian to discern the exact intentions of a Soldier pointing a gun at or near him.

*Id.*

<sup>48</sup> FM 3-24, *supra* note 39, at 1-25.

<sup>49</sup> EOF HANDBOOK, *supra* note 7, at i.

<sup>50</sup> NLWP ANNUAL REPORT, *supra* note 2, at 4.

<sup>51</sup> LRAD Corp. Press Releases, <http://www.lradx.com/site/content/view/42/55/> (last visited Aug. 8, 2010) (posting numerous press releases that identify millions of dollars in orders by the Army and Navy to supply their respective services with acoustic device technology).

### III. Is the LRAD a Weapon?

#### A. Weapons Review Process

All U.S. weapons are reviewed for legality<sup>52</sup> to ensure they do not violate the law of war.<sup>53</sup> Legal reviews are mandated by DoD Directive (DoDD) 5000.01, *The Defense Acquisition System*, which states that “[t]he acquisition and procurement of DoD weapons and weapon systems shall be consistent with all applicable domestic law and treaties and international agreements . . . customary international law, and the law of armed conflict (also known as the laws and customs of war).”<sup>54</sup> As a result, any proposed “weapon” has to be reviewed by the service for legality under the Law of War.<sup>55</sup>

In addition, DoDD 3000.3 requires “a legal review of the acquisition of all non-lethal weapons.”<sup>56</sup> Legal reviews “ensure consistency with the obligations assumed by the U.S. Government under all applicable treaties, with customary international law, and, in particular, the laws of war.”<sup>57</sup>

Although the United States has not ratified Additional Protocol I, it provides the legal review of “new weapons” is also required under Article 36, which states,

In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.<sup>58</sup>

<sup>52</sup> Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), art. 36, June 8, 1977, 1125 U.N.T.S. 3 [hereinafter AP I], reprinted in INT’L & OPERATIONAL LAW DEP’T, THE JUDGE ADVOCATE GEN.’S LEGAL CTR. & SCH., U.S. ARMY, LAW OF WAR DOCUMENTARY SUPPLEMENT 187 (2009); U.S. DEP’T OF DEF., DIR. 5000.01, THE DEFENSE ACQUISITION SYSTEM (12 May 2003) [hereinafter DoDD 5000.01]; see also OPLAW HANDBOOK, *supra* note 11, at 17. Although the United States has not ratified this treaty, the review policies set forth in DoDD 5000.01 and DoDD 3000.3 were established before AP I.

<sup>53</sup> INT’L & OPERATIONAL LAW DEP’T, THE JUDGE ADVOCATE GEN.’S LEGAL CTR. & SCH., U.S. ARMY, LAW OF WAR HANDBOOK 164 (2005) [hereinafter LOW HANDBOOK] (setting forth the four key principles of the law of war: Military necessity/military objective; Distinction/discrimination; Proportionality; and Humanity/unnecessary suffering).

<sup>54</sup> DoDD 5000.01, *supra* note 52.

<sup>55</sup> OPLAW HANDBOOK, *supra* note 11, at 17.

<sup>56</sup> DoDD 3000.3, *supra* note 25.

<sup>57</sup> *Id.*

<sup>58</sup> AP I, *supra* note 52, art. 36.

This legal review will focus on three areas: “whether the employment of the weapon or munition for its normal or expected use inevitably would cause injury or suffering manifestly disproportionate to its military effectiveness,”<sup>59</sup> whether the weapon is capable of being controlled in a discriminatory manner, and whether there is a specific rule of law that prohibits or restricts its use.

In accordance with these requirements, the Department of the Navy, Office of The Judge Advocate General, International and Operational Law Division, conducted a preliminary legal review of acoustic energy non-lethal weapon systems.<sup>60</sup> Notably, this review was conducted in 1998 and did not “describe any specific weapon or weapon system.”<sup>61</sup> Rather, the review acknowledged that additional legal reviews would be required when specific acoustic devices, like the LRAD, were identified.<sup>62</sup>

The Navy’s review nevertheless examined the law of war implications of acoustic technologies and reviewed whether suffering caused by an acoustic device would be needless, superfluous, or “disproportionate to the military advantage reasonably expected” from use; whether it could be used in a discriminate manner to minimize risk to civilians not taking a direct part in hostilities; and finally, “whether there is a specific rule of law or treaty provision prohibiting the weapon’s acquisition or use.”<sup>63</sup> The review concluded, “there are no legal barriers to the development” of the acoustic system technology it examined.<sup>64</sup>

<sup>59</sup> LOW HANDBOOK, *supra* note 53, at 177.

<sup>60</sup> INT’L & OPERATIONAL LAW DIV., Office of The Judge Advocate Gen., Dep’t of the Navy, Preliminary Legal Review of Proposed Acoustic Energy Non-Lethal Weapon Systems, 5000, ser. 106/354 (26 May 1998). SECNAVINST 5000.2D, *Implementation and Operation of the Defense Acquisition System and the Joint Capabilities Integration and Development System*, of 16 Oct 08 is the current reference that requires the Navy to conduct a legal review.

<sup>61</sup> *Id.* (examining “two types of acoustic technology: aural (sonic) systems and non-aural (infrasonic) systems”). A review of a specific acoustic weapon (the LRAD was part of a platform) would not take place until 2007.

<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> *Id.* Specifically, the review concluded:

Based on the information provided, there are no legal barriers to the development of either of these acoustic systems. With respect to those aural systems that could cause permanent hearing loss, however, it will be necessary, if such a weapon is fielded, to develop an adequate focusing mechanism to ensure compliance with the principle of discrimination. Furthermore, from a purely policy perspective, the potential for causing permanent disability and effects such as disorientation, may raise some objections by the International Committee of the Red Cross (ICRC), based on the Sirius Project findings. Nonetheless, it must be emphasized that, from a legal perspective, none of these injuries would render the aural system illegal.

*Id.*

The next legal review, conducted in 2007, actually identified the LRAD.<sup>65</sup> On 22 January 2007 the Department of the Army, Office of The Judge Advocate General, conducted a legal review of the “Full-Spectrum Effects Platform Sheriff.”<sup>66</sup> The LRAD was one component of this platform.<sup>67</sup>

The Army concluded that use of the LRAD would not violate the law of war.<sup>68</sup> The review noted studies which illustrated “that the LRAD, when used in the manner proscribed [sic], will not cause permanent damage to the ear or hearing loss.”<sup>69</sup> However, the review did acknowledge that the LRAD had the capability of being “employed with the intent to cause discomfort to the listener.”<sup>70</sup> This type of use would convert the LRAD from being only a “communication” device, to becoming a non-lethal weapon.<sup>71</sup> Specifically, the review stated:

The LRAD, to date, has merely been used as a “hail and warning device,” and therefore, not been considered a non-lethal weapon. Should the LRAD be employed with the intent to cause discomfort to the listener, it would be considered a non-lethal weapon, but because the discomfort is well short of permanent damage to the ear, it does not violate the legal threshold of ‘superfluous injury or unnecessary suffering.’<sup>72</sup>

Importantly, in its finding, the review concluded that even if used as a non-lethal weapon (i.e., to intentionally cause discomfort instead of to communicate), the LRAD would still provide Soldiers with a lawful tool in today’s complex environment.<sup>73</sup>

The review found that the LRAD has consistently been used as a communication device rather than as a weapon.<sup>74</sup>

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<sup>65</sup> Memorandum from the Office of The Judge Advocate General, U.S. Army, to Program Executive Office, Ground Combat Sys., subject: Full-Spectrum Effects Platform/Sheriff; Final Legal Review (22 Jan. 2007) [hereinafter Final Legal Review Memorandum].

<sup>66</sup> *Id.*

<sup>67</sup> *Id.* “The Full-Spectrum Effects Platform/Sheriff (FSEP) was conceived to provide the warfighter with multiple precise and scaleable synergistic effects.” It includes the LRAD, a “Maxa beam white light,” a “laser glare optical aversion device,” an “acoustic, infrared radar,” a “counter-IED system,” and a .50 caliber machine gun. *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

Nevertheless, even though its use as a communication device or as a non-lethal weapon would be permissible under the law, ensuring that the LRAD is properly described and used is important. Understanding this nuance is particularly important for the judge advocate. Knowledge of this fine line between a “communication device” and a “non-lethal weapon” will allow the judge advocate to be in a better position to advise the commander on its employment and capabilities.<sup>75</sup>

## B. Knowing What It Is, Not What the Media Says It Is (Them’s Fightin’ Words)

Public misperception of the LRAD, which has been fueled by the media, has been growing, and judge advocates must understand the rumors in order to properly advise commanders.<sup>76</sup>

In fact, LRAD, which is 33 inches in diameter and looks like a giant spotlight, has been used by the U.S. military in Iraq and at sea as a non-lethal force. In these settings, operators can use the device not only to convey orders, but also as a weapon. When in weapon mode, LRAD blasts a tightly controlled stream of caustic sound that can be turned up to high enough levels to trigger nausea or possibly fainting.<sup>77</sup>

Use of the LRAD will likely raise the same questions and comments by civilians encountered in combat operations as has been raised domestically by misinformed media sources and the general public. For example, in 2009, a San Diego, California, sheriff’s department displayed an LRAD at a town hall forum.<sup>78</sup> Although it was intended to be used only to communicate with “an estimated 1,300–1,500 people,” it instead provoked public concern that it was a weapon.<sup>79</sup> Specifically, one citizen wrote, “[l]ong-range acoustic devices [LRADs] for crowd control can be extremely dangerous. These are used in Iraq to control insurgents. They can cause serious and lasting harm to

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<sup>75</sup> See TIP OF THE SPEAR, *supra* note 10, at 197 (stating that “JAs should have baseline knowledge of what weapons and weapons systems are available to increase their situational awareness and their value to their commanders”).

<sup>76</sup> See *supra* notes 20–24 and accompanying text. The media’s portrayal of the LRAD, which is primarily communication technology, as a “weapon” is best illustrated by the following quote.

<sup>77</sup> Amanda Onion, *RNC to Feature Unusual Forms of Sound*, ABC NEWS, Aug. 25, 2004, <http://abcnews.go.com/Technology/story?id=99472&page=1>.

<sup>78</sup> Miriam Raftery, *Sonic Weapons Used in Iraq Positioned at Congressional Townhall Meetings in San Diego County*, EAST COUNTY MAG., Sept. 11, 2009, <http://www.eastcountymagazine.org/?q=node/1874>.

<sup>79</sup> *Id.*

humans . . . . We want to know WHY our Sherriff Dept has this weapon.”<sup>80</sup>

In order to address these types of concerns, all Soldiers, especially commanders, should be able to respond to questions about the LRAD and other non-lethal capabilities if posed by concerned citizens or the media in counterinsurgency operations.

#### IV. Conclusion

The LRAD is being used to assist military personnel in complex environments, and it is helping to save lives.<sup>81</sup> With the aid of the LRAD, servicemembers can more easily determine, at a safe distance, the intent of individuals approaching in vehicles at checkpoints.<sup>82</sup> When properly employed as a communication device, users can give voice commands and warnings at great distances.<sup>83</sup> A user can,

however, improperly employ the LRAD to cause intentional pain. When this happens, the LRAD transitions from being a communication device to being a non-lethal weapon.<sup>84</sup> Nevertheless, the LRAD was intended to be used as a communication device, not a “weapon,” “gun,” or “sound cannon” to “inflict pain or even permanent deafness,” but even when improperly used as a non-lethal weapon, the LRAD would fully comply with the law of war<sup>85</sup> because the “discomfort” it can cause “is well short of permanent damage to the ear” it would not exceed the “threshold of superfluous injury or unnecessary suffering.”<sup>86</sup>

Judge advocates must be conscious of the LRAD’s capabilities and the implications of its use. So long as judge advocates are aware of its nuances and the ways it might be used in operations, the LRAD can continue to provide servicemembers with another lawful tool for today’s complex combat operations.

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<sup>80</sup> *Id.*

<sup>81</sup> NLWP ANNUAL REPORT, *supra* note 2, at 5 (“the use of non-lethal devices at vehicle checkpoints in Iraq has resulted in reduced casualties.”).

<sup>82</sup> Acoustic Hailing Devices (AHD) Fact Sheet, *supra* note 17.

<sup>83</sup> *Id.*

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<sup>84</sup> Final Legal Review Memorandum, *supra* note 65.

<sup>85</sup> *Supra* notes 20–24 and accompanying text; *see also* Final Legal Review Memorandum, *supra* note 86.

<sup>86</sup> *Id.*