

Novel Acoustic Devices Improve Communication Over Long Distances

Snapshot

February 13, 2012



LRAD Corp. (“the Company”) develops and markets **acoustic hailing devices (AHD)**[†] that are designed to improve the delivery and **intelligibility** of audio broadcasts over long ranges. The Company’s Long Range Acoustic Device® (LRAD®) technology uses advanced sound reproduction technologies and novel acoustic materials to broadcast authoritative and highly intelligible instructions, warnings, alarms, and other sounds over several miles. LRAD® improves upon traditional speaker systems and **megaphones** by directing sound only where needed. Similar to a spotlight, which produces an intense beam of targeted light, each LRAD® system delivers a focused, directional audio broadcast. The **beam width**, frequency range, and maximum continuous output of LRAD® devices can be adjusted to target individuals, small groups, and large crowds at various ranges. LRAD Corp.’s versatile product portfolio has a broad range of applications, including public safety/law enforcement, commercial security, military, and wildlife and asset protection. The Company’s shares trade on the NASDAQ Capital Market under the symbol “LRAD.”

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Financial Data

Ticker (Exchange)	LRAD (NASDAQ)
Recent Price (02/10/2012)	\$1.40
52-week Range	\$1.31 - \$3.36
Shares Outstanding*	~32 million
Market Capitalization	~\$44.8 million
Average 3-month Volume	46,907
Insider Owners + >5%**	25.8%
Institutional Owners	27.2%
EPS (Qtr. ended 12/31/2011)	\$0.01
Employees	39



* As of January 31, 2012.
** Includes individuals and institutional owners with over 5% ownership.

Key Points

- LRAD Corp.’s revenues have risen for four consecutive fiscal years. For fiscal 2011 (ended 9/30/2011), the Company reported record revenues of \$26.5 million, up 59% over FY 2010, largely due to a foreign government contract that contributed \$12.1 million in revenues in FY 2011.
- LRAD® systems have been deployed by the U.S. Army, Navy, Marines, Air Force, and Coast Guard, as well as on commercial vessels and through public safety organizations worldwide. In 2011, the U.S. Navy placed roughly \$2.6 million in orders for LRAD® systems and support.
- Recently, LRAD Corp. expanded its product portfolio with the launch of the LRAD 2000X™ for large security applications. With an ability to deliver audio broadcasts up to 8,900 meters (~5.5 miles), the LRAD 2000X™ is the Company’s most powerful AHD to date.
- LRAD Corp. also launched a wireless version of its smallest system, the handheld LRAD 100X™, which the Company reports has received strong initial market acceptance. The Company intends to implement wireless capabilities throughout the LRAD® product family.
- LRAD Corp. recently received substantial media coverage following the use of its products for public safety at widely publicized events, such as the G20 Summit in Pittsburgh during 2009 and the Occupy Wall Street movement in New York and Los Angeles in late 2011.
- As of December 31, 2011, LRAD Corp. had over \$13.8 million in cash and cash equivalents.



LRAD 500X™ on Humvees



LRAD 500X™ in Military Use

[†] BOLD WORDS ARE REFERENCED IN THE GLOSSARY ON PAGE 60.

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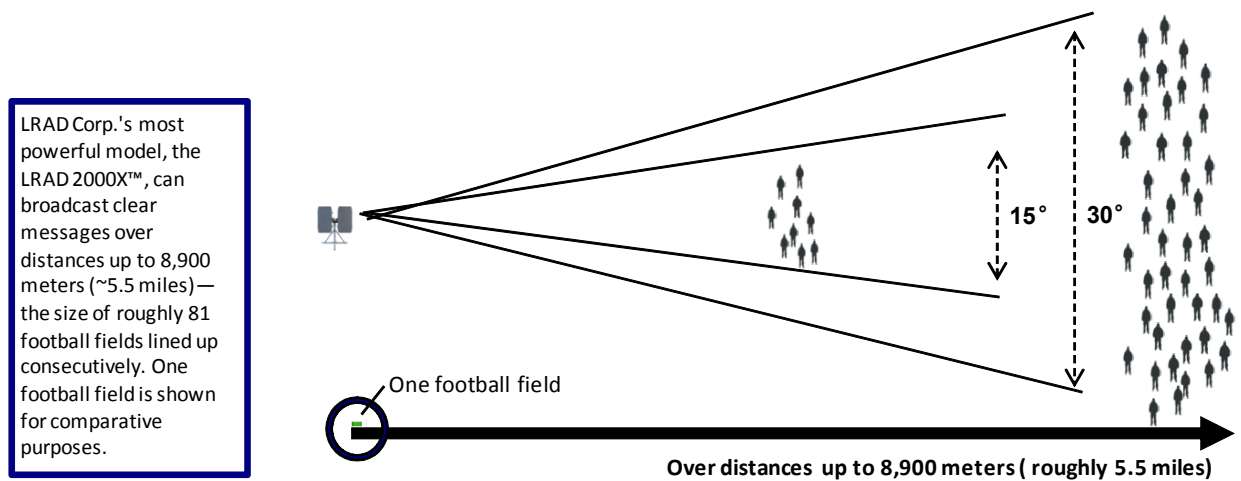
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Executive Overview

LRAD Corp. develops and markets novel directed acoustic hailing devices (AHDs) that are designed to improve communication between the user and the target audience (individuals or groups). The Company's full suite of AHD products is based on its proprietary Long Range Acoustic Device® (LRAD®) platform, which employs a novel combination of sound reproduction technologies and acoustic materials to project highly intelligible speech and other sounds over long ranges. Similar to a beam of light from a spotlight, LRAD® produces a focused, directional beam of sound, which can be broadened or narrowed as needed. To this extent, communication to a small group standing at moderate distance would require a narrow beam whereas addressing a distant crowd requires a wider angle (as illustrated in Figure 1). Moreover, LRAD Corp.'s most powerful device—the LRAD 2000X™ for large security applications—is capable of broadcasting a clear message up to 8,900 meters—roughly 5.5 miles or the equivalent of 81 football fields lined up consecutively. One football field is shown for comparative purposes in Figure 1.

Figure 1

DEMONSTRATION OF THE DISTANCE AND SPAN OF LRAD® TECHNOLOGY (not actual size)



Note: This figure is intended to help the reader gain a better understanding of the reach of LRAD Corp.'s technology. Some images are not true to scale.

Source: Crystal Research Associates, LLC.

LRAD Corp. developed the LRAD® technology to address an unmet need that was exposed following the October 2000 suicide bombing of the U.S. Navy destroyer USS Cole, which killed 17 American sailors and injured 39 others. The USS Cole—sailing under threat condition “Bravo” (the second lowest threat level)—had stopped to refuel in the Yemeni port of Aden. Given the relatively low risk, machine guns at the bow and stern were unmanned and only two sailors were ordered to patrol the ship, with explicit instructions not to load their weapons or fire unless fired on or given permission by the captain. The suicide bombers used a small craft loaded with explosives and approached the USS Cole as though they were part of the refueling team before ultimately crashing into the port side of the boat.

At the time of the bombing, LRAD Corp. had contacts within the U.S. Navy. Following the attack, the Company was approached by the Navy, which sought an acoustic solution to help establish and maintain a perimeter or safety zone, allowing naval ships more time and distance to determine intent and make critical decisions, such as whether to shoot or stand down. The first-generation LRAD® product was released in 2003 and proved the concept of an effective AHD. Since 2003, LRAD® systems have been deployed by the U.S. Army, Navy, Marines, and Coast Guard, as well as commercial vessels and public safety organizations worldwide. In fiscal 2008, the Company completed a total redesign and overhaul of the core LRAD® technology and introduced its current generation of products, called LRAD-X®. LRAD-X® systems feature enhanced driver technology, re-designed electronics, and rugged, robust housings that offer increased voice intelligibility and loudness, greater clarity and communication over distance, and improved reliability.

Providing an effective means to hail, warn, and communicate to individuals or groups allows troops, sailors, law enforcement, and security guards (among others) to better establish and maintain safety and standoff zones, which can help prevent incidents such as the USS Cole bombing. As well, LRAD® systems provide time and distance for military personnel to determine the intent of and react to approaching threats.

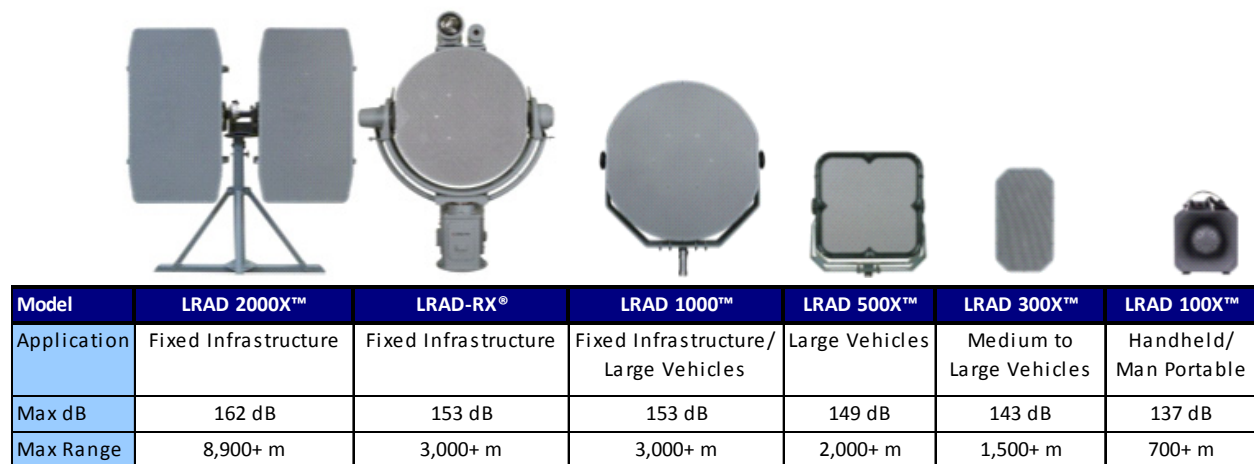
While LRAD® systems may be used by various military branches and law enforcement as a defensive tool in high-tension environments (e.g., riots, wars), the products are designed to serve as communications devices—not acoustic weapons. When operated correctly, the broadcast levels for LRAD® systems are purposely kept below the threshold that could result in permanent hearing damage from brief exposure. While prolonged exposure can cause damage (similar to fire sirens or rock concerts), the sound at close range causes most people to experience discomfort, cover their ears, and move away. The simple act of covering one’s ears with hands reduces the volume by roughly 25 decibels (dB).

Novel Long Range Acoustic Device® (LRAD®) Platform

The LRAD® platform uses directionality and focused acoustic output to support communication over distances of 10 meters to 8,900 meters. Similar to a spotlight, which produces an intense beam of light directly onto a subject, each LRAD® system delivers a focused directional audio broadcast. The beam width, frequency range, and maximum continuous output of LRAD® devices ensures intelligible communication over both distance and loud background noise, and can be adjusted to target individuals, small groups, or large crowds. By placing sound only where needed, LRAD® improves upon traditional speaker systems and adds novel sound applications that conventional technologies have been unable to achieve.

The Company’s product line meets a broad range of requirements for communicating to and deterring potential threats, from the hand-held LRAD 100X™ to the permanently installed LRAD 2000X™. LRAD Corp.’s full suite of products is shown in Figure 2. To the Company’s knowledge, each LRAD® model presents the loudest and most intelligible AHD in its size and weight category.

Figure 2
LRAD Corp.
CURRENT LRAD® PRODUCT LINE



Source: LRAD Corp.

Each LRAD® device is capable of delivering live voice broadcasts through an attached microphone, and both voice broadcasts and deterrent tones using a **hardened** MP3 player. Messages can be recorded and saved for later use in multiple languages, which can improve communication in situations where a language barrier is present. Moreover, various bird calls and predator tones can be recorded to prevent wildlife from approaching a potentially dangerous area (e.g., wind farms, airports, or waste areas).

LRAD® can be combined with a number of features (e.g., radar, cameras) that further improve communication and interaction. There is also an option to operate the device remotely across an **Internet Protocol (IP)**-accessible network. Whereas traditional security and sensor networks allow a user to view a location in real-time, LRAD® enables a first responder capability—allowing the user to communicate to an individual in real time. For example, in a security scenario where LRAD® is operated remotely, command and control center officials could communicate directly to an individual before they breach a secure perimeter, which could alter the individual’s behavior and potentially prevent that person from entering the area. Moreover, LRAD® can be deployed in nearly any type of environment. The rugged, lightweight, and waterproof casing of LRAD® meets the stringent requirements of the U.S. military—ensuring that the device can be operated in harsh environments while also remaining portable. Figure 3 demonstrates the durability of an LRAD® system.

Figure 3
LRAD Corp.
LRAD® SYSTEMS ARE HIGHLY DURABLE

System remains undamaged and in-tact after being run over by a truck



Source: LRAD Corp.

To date, LRAD® systems have been deployed in approximately 45 countries across North America, Europe, Asia, Africa, Europe, and Australia. LRAD Corp.’s AHDs are approved by the **U.S. General Services Administration (GSA)**. As well, many of the Company’s products have **NATO stock numbers**—including the LRAD 100X™, 300X™, 500X™, and 1000X™.

Applications for LRAD® Technology

LRAD® fills a critical communications gap for a number of global applications. Today, LRAD® systems have been used in fixed and mobile military deployments, maritime security, critical infrastructure and perimeter security, commercial security, border and port security, law enforcement and emergency responder communications, and wildlife preservation and control. The ability to operate LRAD® remotely further broadens the device’s potential. For instance, its uses could include securing unmanned oil platforms or unmanned vehicles, where operation from the safety of a command and control center is preferred.

The Company classifies these applications into four target markets: (1) military; (2) public safety; (3) commercial security; and (4) wildlife and asset protection. Each of these key sectors is briefly summarized below, with greater details provide on pages 22-38 of the Core Story.

Military Opportunities

LRAD Corp. is focused on continually expanding the range of applications for its products in the military setting. The U.S. Navy employs LRAD® technology as part of its escalation of force protocol at sea. Most notably, the Navy’s *Lewis & Clark* and *MV Green Ridge* ships have used LRAD® systems to successfully repel pirate attacks. While the U.S. Navy has been a customer since 2003, its demand for AHDs has increased in recent years. Following extensive testing by the Navy, LRAD Corp. won a competitive bid in August 2010 for a multi-year, \$6.2 million order for integrated LRAD-RX® systems and services. The Company estimates that its AHD systems are deployed on approximately 240 large U.S. Navy vessels. Also, LRAD Corp. has 130 LRAD® systems deployed with the U.S. Maritime Expeditionary Security Forces. The Company is currently working to expand its AHD systems into the U.S. Navy’s small vessels and submarine fleets.

In addition to its use on ships, LRAD® systems can be mounted on unmanned vehicles or helicopters to help military personnel quickly cover large areas with voice communications and instructions in multiple languages.

The Company is also pursuing large, multi-year U.S. Army, international military, and commercial security orders. LRAD Corp. has partnered with Kongsberg Gruppen ASA (KOG-OSE)—a global military and defense contractor headquartered in Norway—which supplies the PROTECTOR Common Remotely Operated Weapon Station (CROWS) to the U.S. Army. In August 2007, Kongsberg Defense & Aerospace AS won a competitive bid (originally

valued at ~US\$1.3 billion) for a framework agreement to supply remote weapon stations for the U.S. Army's CROWS II program. As the five-year agreement comes to a close, the Army has disclosed that the upcoming CROWS III contract is valued at \$970 million (roughly 3,000 units) and would be awarded to a single supplier (Source: PR Newswire, September 8, 2011). LRAD Corp. and Kongsberg have teamed to offer the U.S. Army the LRAD 300X™ and other enhancements to the CROWS II, which provide soldiers escalation of force options and the ability to communicate to targets from within the safety of their armored vehicles. The companies are seeking to obtain an initial order for field testing. The companies are also working on a submission for the upcoming CROWS III contract.

As well, in October 2011, the U.S. Army issued a public **Request for Information (RFI)** regarding 6,350 AHDs. LRAD Corp. is actively pursuing this opportunity.

Public Safety

The portability and durability of LRAD® systems make them a useful mass communications tool in a number of public safety scenarios. In emergency situations—such as natural disasters, riots, terrorist attacks, or other emergencies—ground-based or helicopter-mounted LRAD® systems can quickly communicate warnings, instructions, and directions to large groups, even in areas where power and communication has been disrupted. LRAD® systems can be used to warn of pending flooding or tornadoes, evacuate populations, direct survivors to aid stations, warn of contaminated food and water supplies, or announce evacuation routes and assembly areas for rescue operations, among other critical broadcasts, warnings, and notifications. In 2010, mass notification system sales in the U.S. alone exceeded \$1.2 billion (Source: IMS Research press release, April 20, 2011).

Moreover, LRAD® can be a critical part of the layered defense/escalation of force strategy for law enforcement and government agencies trying to control protests, riots, or other large crowd scenarios, helping to fill the communications gap between megaphone (or “**bullhorn**”) warnings—which may not be heard or understood by all participants—and non-lethal force (e.g., batons, rubber bullets). LRAD Corp. has received substantial media coverage after its products were used for public safety in widely publicized events such as the G20 Summit in Pittsburgh during 2009 and the Occupy Wall Street movement in New York and Los Angeles in late 2011. In these incidents, law enforcement used LRAD® systems to communicate to rioters and protesters.

Commercial Security

Today, there is an increased need for enhanced security to protect people and property on commercial maritime interests, harbors, oil pipelines, and offshore platforms. The Company's LRAD® products can help secure perimeters and protect infrastructure both on land and at sea, among other purposes, in a number of commercial security applications and situations. LRAD® technology improves upon traditional passive surveillance systems by serving as a first responder and providing an effective means to communicate to potential threats in real time.

In the maritime setting, LRAD® technology has been used to secure ports and waterfront perimeters as well as to protect personal vessels and cruises ships against pirate attacks and other threats. The International Maritime Bureau (IMB) received reports of 439 pirate attacks globally during 2011, with 113 vessels fired upon, 176 ships boarded, 45 vessels hijacked, over 800 crew members taken hostage, and eight people killed (Source: the IMB's Piracy Reporting Centre, January 19, 2012). LRAD® systems can be deployed on vessels to help ward against an impending attack in a proactive approach to more rapidly establish an oncoming vessel's intent as well as a response plan. In most confrontations, the Company reports that LRAD® has caused attackers to abort their assault.

LRAD® systems may also reduce the frequency of false alarms. In some cases, a person or a vessel may unknowingly enter private or secure premises. The ability to communicate messages and warnings to the potential threat provides the trespassers with an opportunity to correct their action by leaving the area or following the specified instructions given through the LRAD®. This minimizes the risk of false alarms and the unnecessary escalation of force in the case of an accidental intruder.

Wildlife and Asset Protection

Protecting wildlife, preventing aircraft bird strikes, and reducing losses from wildlife-related crop and equipment damage are emerging markets with significant potential for LRAD® systems. Each year, thousands of birds and other animals are killed at airports, air bases, harbors, wind and solar farms, or after visiting contaminated **tailing ponds**, oil and gas facilities, and other waste areas. LRAD® systems are capable of emitting a wide variety of tones and predator calls designed to deter approaching wildlife at ranges up to 3,000 meters. LRAD Corp. has combined its LRAD® technology with avian radar detection from DeTect, Inc. (www.detect-inc.com) to directly target flocks that are approaching a restricted area. Once a bird or a flock is tracked on radar, LRAD® is activated and begins broadcasting various tones and predator calls over long ranges in an effort to humanely deter wildlife.

Industries, such as mining, can face large environmental fines when waterfowl deaths exceed government standards. In the face of increased regulations, many sites have sought techniques to keep birds away from tailing ponds and other potential wildlife hazards. While wind farms have faced fewer regulations and fines in recent years due to their status as a clean energy alternative, public policy organizations, such as the Frontier Centre for Public Policy, are calling more attention to their environmental impact on wildlife. For example, wind turbines cause roughly 440,000 bird deaths each year in the U.S. (Source: the U.S. Fish and Wildlife Service).

LRAD® systems may be able to dramatically reduce both the number of birds killed annually and related fines. To date, LRAD® technology has been tested at airports, air bases, harbors, wind farms, tailing ponds, and other facilities that have human and wildlife safety concerns, and are proving to be highly effective in preserving both wildlife and critical assets. The Company reports that its devices have been installed in multiple mining operations for over two years and have reduced bird deaths from thousands annually to less than 20 per year.

The device may also benefit solar farms, nuclear power facilities, various agricultural operations, fisheries, and other industries and critical facilities that have wildlife preservation concerns.

Competitive Advantages for LRAD®

The Company believes that it has established a significant competitive advantage in each of its principal markets. Often, the delivery of announcements, instructions, or warnings over long distances or ambient noise can prevent a message from being delivered or understood. Traditional audio broadcast technologies, such as bullhorns, have a limited range and broadcasted messages can be stifled by distortion, ambient noise, or distance. In contrast, the Company's powerful communications tools deliver highly intelligible voice broadcasts over distances up to 3,000 meters on vehicles/vessels or up to 8,900 meters in fixed applications. As well, traditional sirens and alarms, while effective, lack the real-time communications capabilities provided by LRAD®.

LRAD Corp. believes that its communications systems also improve upon conventional mass notification technologies—such as phone calls, radios, and TV broadcasts—which often rely on electricity. Power or phone line outages are common after natural disasters (e.g., hurricanes or tornados) and can render these methods completely unusable. LRAD® systems overcome these weaknesses as many are battery operated, negating the need for power from fixed infrastructure.

Moreover, unlike **infrasound** devices, LRAD® has not been shown to cause illness. Infrasound devices emit sound waves at frequencies below the standard limit of human hearing (20 hertz [Hz]) to incapacitate people, such as in counter-terrorist or crowd control settings. Low-power infrasound waves cause nausea or discomfort while higher-power emissions can cause severe pain or disorientation. With a frequency range of 200 Hz to 10,000 Hz, LRAD® is incapable of broadcasting infrasound. As well, infrasound devices require substantial power to operate, while most LRAD® systems have low power requirements, making them more suitable for portable applications.

LRAD® systems also reduce costs and serve as a **force multiplier** by increasing security coverage, improving operational efficiency, and increasing response capabilities—all while reducing manpower. When fewer individuals are needed to direct large groups and control a volatile situation (e.g., a riot, protest, or natural disaster), first responders and emergency personnel can attend to more critical duties while also ensuring the safety and security of those involved.

Corporate Information

LRAD Corp. was founded in 1980 and underwent a recapitalization in 1992. After launching its first directed sound technology in 1996, the Company began engineering sound solutions to address the needs of the commercial, government, and military markets. Since 1996, LRAD Corp. has developed novel acoustic products to project, focus, shape, and control sound. In 2010, the Company changed its name from “American Technology Corp.” to “LRAD Corp.” and spun off its **hypersonic sound (HSS)** business, Parametric Sound Corp. (PAMT-OTC.BB), as an independent, publicly traded entity. LRAD Corp.’s shares of Common Stock trade on the NASDAQ Capital Market under the symbol “LRAD.”

Headquarters and Employees

LRAD Corp. has headquarters in San Diego, California. At September 30, 2011, LRAD Corp. employed 39 individuals, including 10 in research and development (R&D), 15 in production, quality assurance, and materials control, eight in general and administrative (G&A), and six in sales and marketing. The Company also contracts technical and production personnel and outside consultants as needed.

Milestones

Recent Milestones

LRAD Corp. has achieved a number of significant corporate milestones in the past 12 to 24 months, including those listed below.

- Achieved its second year of profitability as well as record revenues for the fourth straight fiscal year
- Grew international business by 254% in fiscal 2011, which included delivering a \$12.1 million equipment order to a foreign government—the Company’s largest single order to date—combined with a seven-year service and maintenance agreement for \$5.5 million that is scheduled to begin in April 2012
- Enhanced its product offerings by adding wireless capabilities, starting with a wireless version of the LRAD 100X™
- Completed the development of the LRAD 2000X™, the Company’s most powerful AHD to date, to meet the requirements of larger security applications
- Released the LRAD 2000X™ for sale in the first quarter of fiscal 2012
- Continued developing distribution channels by signing new third-party sales representatives
- Increased gross margin to nearly 60% in fiscal 2011

Potential Milestones

LRAD Corp. has identified a number of corporate milestones that the Company seeks to achieve within the next 12 to 24 months as it continues to create and grow markets for its AHD products, which are summarized below.

- Expand wireless capability across the LRAD-X® product line
- Obtain an initial order for LRAD 300X™ systems combined with Kongsberg’s PROTECTOR system for CROWS II field testing
- Pursue large U.S. Army, international military, and commercial security orders, including the Army’s upcoming contract for its CROWS III program with Kongsberg
- Partner with large defense contractors to include LRAD® in their programs and international business opportunities with AHD requirements
- Work with Congress and Pentagon officials to secure multi-year funding for LRAD® systems in the military’s 2013 Congressional budget
- Use successful trials and opening orders to further penetrate the wildlife and asset preservation market, including airports and clean/alternative energy applications (e.g., wind farms)
- Increase market share in the mass notification market through the introduction of new LRAD® systems
- Continue to strengthen domestic and international sales channels by adding key channel partners, distributors, and dealers with experience selling integrated communications solutions to various target markets

Growth Strategy

LRAD Corp. has focused on creating and increasing demand for AHDs in a number of business segments and markets. The Company plans to continually nurture and expand these markets by broadening its sales channels and creating relationships with large customers in key segments (as detailed below). At present, LRAD Corp. believes that its largest market opportunity is with the U.S. military, including a U.S. Army RFI for 6,350 AHDs and a potential multi-year contract for the Army's CROWS program with Kongsberg Gruppen ASA—a Norway-based military and defense contractor.

LRAD Corp. seeks to continue establishing global brand recognition for its products in the AHD market. The Company also aims to maintain a leadership position in the field of directed or focused sound for short- and long-range communications by improving its products and technologies for both existing and new customers and continually expanding the range of applications for LRAD® technology. LRAD Corp. has ongoing development efforts to improve product performance, quality, and features. Improvements to the performance and quality of its existing directed sound products and the introduction of the LRAD-X® line of products in 2008 have supported revenue growth of 186% over three years (FY 2008 to FY 2011). The Company also continually seeks to reduce the cost and simplify the manufacturing of its products.

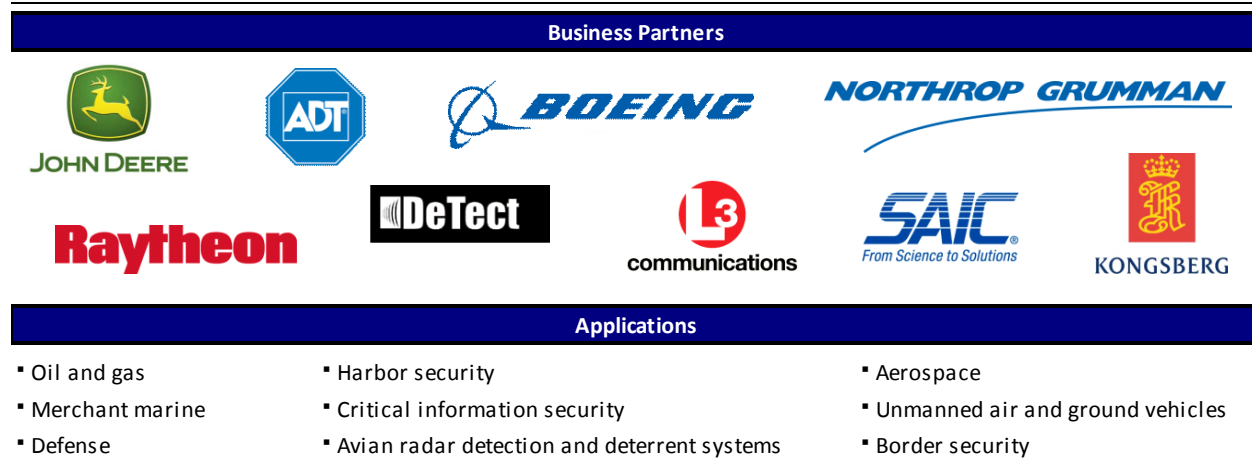
Expanding Applications through Partnerships

The Company works closely with key business partners to integrate LRAD® products into solutions for a diverse range of applications. A selection of LRAD Corp.'s business partners, as well as a summary of potential applications for the integrated solutions, is provided in Figure 4. The Company seeks to partner with companies that have existing large contracts (such as with the military) and that plan to continue pursuing these opportunities.

Figure 4

LRAD Corp.

KEY BUSINESS PARTNERS AND RELATED APPLICATIONS



Source: LRAD Corp.

LRAD Corp. has worked with Kongsberg for several years to integrate its LRAD 300X™ into Kongsberg's remotely operated weapon station, the PROTECTOR. In August 2007, Kongsberg Defense & Aerospace won a competitive bid for a multibillion dollar framework agreement to supply remote weapon stations for the U.S. Army's CROWS II program for five years. Kongsberg is also expected to bid for an upcoming \$970 million contract for the next phase of the CROWS program (CROWS III) with LRAD® as an enhanced feature. Greater details of the Kongsberg partnership and initiatives are provided on pages 26-27.

The Company is also working with Northrop Grumman Corp. (NOC-NYSE) to equip unmanned vehicles with LRAD® systems in preparation for future remote weapons contract opportunities.

Sales and Marketing

LRAD Corp.'s major initiative for fiscal 2012 is continued revenue growth by increasing direct sales to domestic and international militaries and large commercial and defense-related companies desiring to use the Company's directed sound technology in integrated product offerings. LRAD Corp.'s business development team, which has recently been expanded, is focused on government, law enforcement, homeland and international security, private and commercial security, maritime security, and wildlife preservation and control markets. In 2012, the Company aims to further expand its product offerings into airports and the clean/alternative energy markets (e.g., wind farms), where its products have proven successful in wildlife and asset preservation.

LRAD Corp. is also strengthening domestic and international sales channels by adding key channel partners, distributors, and dealers with experience selling integrated communications solutions to various target markets.

Intellectual Property

LRAD Corp. protects its products and technologies through a collection of patents, copyrights, trademarks, and trade secrets as well as through contractual obligations with large defense contractors on mutually beneficial business. As the Company markets its LRAD® systems worldwide, it is important to seek techniques to protect its technology internationally, even in countries where there are significant voids and limitations to intellectual property protection.

Rather than assuming a reactive approach to intellectual property protection—where a company seeks remediation for infringements—LRAD Corp. focuses on a proactive approach, whereby the Company takes action to prevent infringement and actively maintain its competitiveness. As such, while the Company holds patents on the present LRAD® technology and may continue to seek patent protection on novel features and technologies, its lead objectives include maintaining trade secrets (e.g., software and firmware) and ensuring that the key components within its systems are kept proprietary (e.g., acoustic drivers). Moreover, LRAD Corp. seeks to continually upgrade and enhance its technology and product offerings—ensuring that its portfolio remains competitive in the AHD sector.

Trademarks

LRAD Corp. owns various trademarks, including LRAD®, Long Range Acoustic Device®, LRAD-X®, and LRAD-RX®.

Company Leadership

Executive Management

LRAD Corp.'s management and engineering team blends technology, operations, manufacturing, and marketing expertise with acoustic engineering experience. Thomas R. Brown, a 16-year technology veteran from Sony Electronics, Inc. (part of Sony Corp. [SNE-NYSE]), was appointed to LRAD Corp.'s Board of Directors in March 2006 and to chief executive officer and president shortly thereafter with the goal of revamping the product—from the audio and electronic components to the product housing—to better address the needs of the Company's target markets. Management has demonstrated an ability to not only market the Company's products but also to create and develop markets for the LRAD® technology. Table 1 summarizes LRAD Corp.'s executive management, followed by detailed biographies.

Table 1
LRAD Corp.
MANAGEMENT

Thomas R. Brown	Chairman of the Board, President, and Chief Executive Officer
Katherine H. McDermott	Chief Financial Officer

Source: LRAD Corp.

Thomas R. Brown, Chairman of the Board, President, and Chief Executive Officer

Mr. Brown has been a director since March 2006 and was appointed president and chief executive officer (CEO) in August 2006 and interim chief financial officer (CFO) in September 2006. Mr. Brown served as president of BrownThompson Executive Search, a financial executive search firm, from April 2005 to August 2006. Mr. Brown was employed by Sony Electronics from February 1988 to September 2004. From April 2001 to September 2004, he was executive vice president and deputy president of the Engineering and Manufacturing division of Sony Electronics, where he was responsible for supply chain operations, including information technology, procurement, customer service, North American manufacturing operations, and finance. From April 2000 to September 2004, Mr. Brown was concurrently the executive vice president and president of Sony Electronics' Information Technology division, where he was responsible for establishing the North American personal computer manufacturing division. Mr. Brown is a member of the Board of Directors of Mad Catz Interactive, Inc. (MCZ-AMEX), a provider of video game accessories. He holds a B.A. in economics from Rutgers University.

Katherine H. McDermott, Chief Financial Officer

Ms. McDermott was appointed as controller/chief accounting officer in June 2007 and was promoted to CFO in September 2007. Ms. McDermott served as the CFO for National Pen Company from 2005 to 2006 and as the vice president of finance for Lantronix, Inc. (LTRX-NASDAQ) from 2000 to 2005. Ms. McDermott held a variety of senior financial positions with Bausch & Lomb Inc. from 1988 to 1999 and began her career holding a number of financial positions with a component division of General Motors Co. (GM-NYSE) from 1982 to 1988. She holds a B.A. in business administration from St. Bonaventure University and an MBA from the William E. Simon School of Business Administration at the University of Rochester.

Board of Directors

LRAD Corp.'s Board of Directors oversees the conduct of and supervises the Company's executive management team. Table 2 provides a summary of Board members, followed by detailed biographies.

Table 2 LRAD Corp. BOARD OF DIRECTORS	
Thomas R. Brown	Chairman of the Board, President, and Chief Executive Officer
Laura M. Clague, CPA	Director
Helen C. Adams, CPA	Director
Admiral Ray Smith	Director

Source: LRAD Corp.

Thomas R. Brown, Chairman of the Board, President, and Chief Executive Officer

Biography provided on page 13.

Laura M. Clague, CPA, Director

Ms. Clague is the vice president and corporate controller of Amylin Pharmaceuticals, Inc. (AMLN-NASDAQ), a biopharmaceutical company. She previously served as Amylin's executive director and has been corporate controller since March 2003. From 1988 to 1999, Ms. Clague was the director of finance and accounting operations, controller, and accounting manager at Sony Electronics. From 1985 to 1988, Ms. Clague served as internal audit supervisor at Cubic Corp. (CUB-NYSE). From 1982 to 1985, Ms. Clague held various audit positions at KPMG, LLP, a provider of professional services. Ms. Clague earned a B.S. in business administration from Menlo College and is a certified public accountant (CPA).

Helen C. Adams, CPA, Director

Ms. Adams retired in 2009 after more than 27 years serving as a partner and CPA with Deloitte & Touche LLP. Ms. Adams' experience and background with Deloitte was focused on emerging technologies and alternative energy, including wind energy, solar, and other forms of clean technology. She has served in executive positions on the Board of Directors of the Senior Community Centers, Make-a-Wish Foundation of San Diego, and the YWCA, and in professional organizations such as the San Diego Chairmen's Roundtable and the American Wind Energy Association. Ms. Adams is currently chairman of the Board of Athena San Diego, a professional organization for executive women in science and technology. Ms. Adams is a CPA and holds a B.S. in accounting from San Diego State University.

Admiral Ray Smith, Director

A Navy SEAL for over 30 years, Admiral Smith achieved extraordinary success through focused, participatory leadership. During his four-year tenure as commander of the 2,300-man Navy SEAL force, he raised personnel retention to a level three times the Navy average. As a Navy captain, Admiral Smith led the Navy SEALs in Operation Desert Storm, conducting over 200 operations of strategic significance while incurring no casualties. Earlier in his career, Admiral Smith directed Navy SEAL training, generally considered to be the most challenging military training in the world. While in this position, Admiral Smith achieved the highest graduation rate in the 50-year history of the course (55%). Admiral Smith was also the first Navy flag officer to hold the position of director of assessment with the Office of the Chief of Naval Operations. In this position, he led 100 system analysts in providing recommendations directly to the chief of naval operations to enable improved execution of an \$85 billion annual budget. Admiral Smith holds a B.S. from the U.S. Naval Academy and an M.S. in physical oceanography from the U.S. Naval Postgraduate School.

Core Story

LRAD Corp. (“the Company”) designs and develops novel products that allow customers to communicate loud and clear voice messages and other sounds over long distances. The Company’s proprietary Long Range Acoustic Device® (LRAD®) platform uses novel sound reproduction technologies and acoustic materials to produce a directed, focused acoustic beam that can reach up to 3,000 meters for large vehicles/vessels or up to 8,900 meters on fixed infrastructure—even in high ambient noise environments. This significantly improves upon conventional technologies, such as bullhorns and other portable mass notification systems, which offer significantly lower ranges.

Also called acoustic hailing devices (AHDs), LRAD Corp.’s products deliver a beam of sound—similar to a spotlight’s beam of light—in a 15 degree to 30 degree angle. The directional audio output prevents personnel and system operators from exposure to excessive audio levels, while still providing high voice intelligibility and tonal clarity over long distances. Each device can broadcast live or custom messages in multiple languages as well as various sounds (e.g., alarms, animal deterrent noises).

LRAD Corp. developed the LRAD® platform to fulfill a capability gap exposed after a suicide bomber attack on the U.S. Navy’s USS Cole ship in 2000. Although the USS Cole possessed sufficient firepower to prevent the attack, the sailors lacked the necessary tools and protocols to quickly determine the threat’s intent and identity (i.e., civilian or terrorist) and take action against the approaching small craft.

To the Company’s knowledge, LRAD® offers the longest range and clearest communication of currently marketed AHD products. LRAD Corp.’s full suite of systems—from the handheld LRAD 100X™ to the permanently installed LRAD 2000X™—enables customers to select the size and configuration that best suits their needs. Each system is user-friendly, reliable, and easy to operate, allowing users to quickly deliver verbal messages or other sounds as needed. Requiring only a single operator, LRAD® may also reduce required manpower in security and public safety scenarios while improving coordination efforts and increasing security coverage. The rugged and lightweight waterproof housings on all LRAD® systems meet the stringent requirements of the U.S. military, ensuring that the devices can be operated in harsh environments while also allowing portability.

Expanding Applications

LRAD® systems can be used to communicate before, during, and after natural disasters, to provide information to or maintain order of large groups (e.g., concerts or protests), or to determine the intent of potential threats at safe distances, among many other uses. Through powerful, highly intelligible voice and alarm broadcasts, LRAD® uses communication to create increased standoff and safety zones, determine intent, support peaceful conflict resolution, and potentially prevent injuries or even save lives on both sides of the device.

The Company has broadened the device’s application to include all branches of the military, public safety (e.g., law enforcement, government), commercial security, and wildlife and asset protection (e.g., wind farms, tailing ponds), among other expanding markets globally. Greater details of the role of LRAD® in each of these key sectors are provided on pages 22-38. LRAD Corp.’s product sales are also increasing internationally. To date, LRAD® systems have been deployed in approximately 45 countries across North America, Europe, Asia, Africa, Europe, and Australia.

As well, LRAD Corp. has received significant media coverage after its products were used in highly publicized events, such as the Pittsburgh G20 Summit and Occupy Wall Street protests. Figure 5 (page 16) summarizes media outlets that have featured LRAD® technology to date.

Figure 5

LRAD® TECHNOLOGY HAS BEEN FEATURED IN NUMEROUS MEDIA OUTLETS



Source: LRAD Corp.

Product Portfolio

LRAD Corp. offers an extensive product line for long-range communication, which spans from the portable, handheld LRAD 100X™ to the recently launched LRAD 2000X™ (designed for border and large perimeter security applications). A built-in microphone and hardened MP3 player allows each LRAD® system to deliver messages, instructions, warnings, as well as alarms, deterrent tones, and warning signals, among many other sounds. Depending on a customer's needs, the Company's products can be accessorized with radar, high-powered lights, infrared, night vision, **laser dazzlers**, and other options to attract attention and improve communication. LRAD Corp. has also introduced wireless capability, beginning with the LRAD 100X™, and plans to integrate this feature throughout the LRAD® product family.

Like all loudspeakers, the audio output of LRAD® is measured in decibels (dB) at a distance of one meter in front of the device. To determine the degree of intensity over distance, LRAD® broadcasts follow the inverse square law: for every doubling of the distance from the sound source, sound intensity diminishes by six decibels (dB).

It is important to note that while LRAD® may be used as part of the "escalation of force" protocol by law enforcement, security guards, or the military, its primary purpose is serving as a communications tool for delivering information, instructions, or warnings. When used as intended, it is a safer alternative to non-lethal deterrent options, such as pepper spray or rubber bullets. While prolonged exposure can cause damage (similar to fire sirens or rock concerts), the sound at close range causes most people to experience discomfort, cover their ears, and move away. Covering one's ears alone reduces the volume by roughly 25 dB.

As part of the Company's commitment to safety, LRAD Corp. maintains a strict policy to sell its systems only to qualified government agencies and commercial entities that are fully trained in the device's operation and use.

LRAD 100X™: A Handheld Acoustic System

The LRAD 100X™ (shown in Figure 6) is a long-range communications system that can be used to deliver messages and warnings over distances up to 1,000 meters. The device is both handheld and battery-powered to ensure easy portability. The durable outer housing is designed to protect the internal technology even in the harshest environments. The LRAD 100X™ has numerous applications, including mass notification, law enforcement, and commercial security purposes (including short-range perimeter security).

Figure 6
LRAD Corp.

LRAD 100X™ HANDHELD ACOUSTIC SYSTEM



- Clear communication up to 1,000 meters
- 137 dB at 1 meter maximum continuous output
- Can overcome 88 dB of background noise at 250 meters
- Lowers the risk of exposure to excessive audio levels
- 30 degree primary beam
- Avoids distortion from reflected sounds
- Simple, flexible controls
- Handheld or self standing
- Compact and portable
- Microphone and MP3 interface
- Waterproof
- Wireless capability (optional)

Source: LRAD Corp.

The LRAD 100X™ incorporates LRAD Corp.'s optimized driver and waveguide technology, which facilitates loud, clear voice amplification and delivery so that the message can be communicated effectively. The LRAD 100X™ is designed to overcome background noise, such as is produced by vehicles, vessels, sirens, or crowds. It delivers messages up to 250 meters over 88 dB of background noise (the equivalent of a propeller plane flyover at 1,000 feet). Moreover, the Company has launched a wireless version of the LRAD 100X™ system—its first product to incorporate wireless capability.

The Company believes that the attributes of the LRAD 100X™ as well as its directed 30-degree beam of sound enable clearer and more effective communication than conventional megaphones (or bullhorns) and other portable public address (PA) systems.

LRAD 300X™/300Xi™

The LRAD 300X™ (shown in Figure 7) is a low-profile, mid-range AHD designed for use on armored trucks, small vessels, and both manned and unmanned vehicles and aircraft. The compact and lightweight design of the LRAD 300X™ allows the device to be easily transported by security, law enforcement, and military personnel. As well, it can be operated on-site or remotely, depending on the customer's needs.

Figure 7

LRAD Corp.

LRAD 300X™ FEATURES



- Longer standoff distances for increased asset protection
- Larger coverage with fewer personnel
- Streamlined design for mounting on armored military and law enforcement vehicles
- Provides military and police personnel the ability to communicate and create standoff zones from within the safety of their armored vehicles
- Easily mounted on UAVs for aerial deployments
- Broadcasts warnings and notifications over wide areas on the ground or in the air

Source: LRAD Corp.

LRAD Corp. developed the LRAD 300X™ to help military and law enforcement personnel establish standoff zones and communicate with both civilians and potentially hostile forces from within the safety of armored vehicles. Standoff zones are areas that are intended to be vacant of unauthorized, unapproved, or unknown vehicles and individuals, making it easier to identify and address suspicious activity. The LRAD 300X™ can deliver clear voice messages over more than 1.5 kilometers (km) when background noise is minimal, and up to 350 meters over 88 dB of background noise.

LRAD 500X™

The Company designed the LRAD 500X™ (shown in Figure 8 [page 19]) to provide military and security personnel long-range communications and effective hailing and warning capabilities. Similar to the LRAD 100X™ and 300X™ models, the LRAD 500X™ is both lightweight and easy to transport, while delivering verbal commands clearly and audibly over more than 2,000 meters (or up to 650 meters over 88 dB of background noise). Verbal commands can be followed by programmed deterrent tones, such as an alarm, to further improve communication and response. The deterrent tones can reach a maximum of 149 dB (at one meter).

Figure 8
LRAD Corp.
LRAD 500X™ FEATURES



- Longer standoff distances for improved asset protection
- Larger coverage with fewer personnel
- Ability to determine intent of groups or individuals from extended distances
- Ability for maritime vessels to clearly and forcefully communicate with small vessel threats
- Provides military and police personnel the ability to communicate and create standoff zones from within the safety of their armored vehicles
- Broadcasts warnings and notifications over wide areas on the ground or in the air
- Mobile and easily deployed in most military, law enforcement, commercial security, or emergency situations

Source: LRAD Corp.

The U.S. Army has selected the LRAD 500X™ system as its AHD of choice for small vessels and vehicles to limit escalation of force in restrictive rules of engagement environments. Moreover, LRAD 500X™ systems are widely used by U.S. and international naval forces. The LRAD 500X™ has passed extensive testing conducted at the U.S. Army's Aberdeen Test Center and, to the Company's knowledge, is the only AHD that has the proven ability to communicate with 100% intelligibility over 88 dB of background noise at 300 meters away while only weighing roughly 45 pounds.

LRAD 1000X™/LRAD 1000Xi™

The LRAD 1000X™ (shown in Figure 9) projects voice commands and deterrent tones over more than 3,000 meters (nearly two miles), allowing ample time for security and military personnel to determine the intent and influence the behavior of security threats. In loud environments (e.g., 88 db of background noise), the device can deliver intelligible speech transmissions up to 1,250 meters. Given its ability to support effective communication over long distances, the U.S. Navy has employed the LRAD 1000X™ to support long-range hailing and warning on its Shipboard Protection System. The LRAD 1000X™ is available with both fully integrated (LRAD 1000X™) or remotely operated (LRAD 1000Xi™) electronic systems.

Figure 9
LRAD Corp.
LRAD 1000X™ FEATURES



- Longer standoff distances for increased asset protection
- Larger coverage with fewer personnel
- Determination of intent of groups or individuals from extended distances
- Maritime vessels to clearly and forcefully communicate with small vessel threats
- Perimeter/infrastructure protection for oil and gas platforms, mining operations, and chemical/power plants
- Transmitting bird distress calls to repel targeted birds from crops, buildings, and airports
- Enforcement of safety zones for maritime vessels

Source: LRAD Corp.

LRAD-RX®

Similar to the LRAD 1000X™ series, the LRAD-RX® supports long-range communication over more than 3,000 meters (nearly two miles), or up to 1,250 meters over 88 dB of background noise. While the LRAD-RX® employs the same **emitter head** used in the LRAD 1000X™, LRAD-RX® has added automated capabilities that make it ideal for remote security scenarios. In particular, the LRAD-RX® can be operated over an IP network, allowing system operators to protect the perimeter of an unmanned building or platform and respond to potential threats from a safe location. The LRAD-RX® can also receive automatic intruder position data from other IP-enabled sensor systems (e.g., radars) to find and track potential threats.

As illustrated in Figure 10, the LRAD-RX® includes an integrated camera as well as the Company's proprietary full pan and tilt system, which moves up to 60 degrees per second for precise aiming and tracking. The LRAD-RX® is also equipped with a high-intensity searchlight. Collectively, these features may allow companies to increase safety and security while reducing manpower and false alarms. Additionally, its weatherproof exterior allows it to operate effectively in harsh environmental conditions.

Figure 10
LRAD Corp.
LRAD-RX® FEATURES



- Longer standoff distances for increased asset protection
- Larger coverage with fewer personnel
- Determination of intent of groups or individuals from extended distances
- Maritime vessels can clearly and forcefully communicate with small vessel threats
- Perimeter/infrastructure protection for oil and gas platforms, mining operations, and chemical/power plants
- Transmitting bird distress calls to repel targeted birds from crops, buildings, and airports
- Enforcement of safety zones for maritime vessels

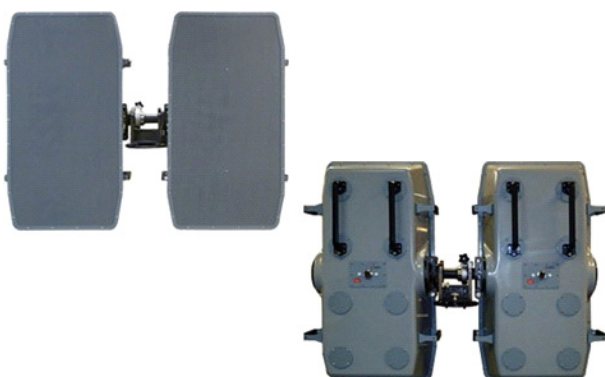
Source: LRAD Corp.

In 2010, the U.S. Navy selected the LRAD-RX® after a competitive bid process for Block 2 of the Shipboard Protection System. The device has passed intensive military testing, including shipboard shock explosions.

LRAD 2000X™

The Company developed the LRAD 2000X™—its most powerful AHD to date—to meet the requirements of larger security applications. The LRAD 2000X™ (shown in Figure 11 [page 21]) was launched in the first quarter of fiscal 2012. The LRAD 2000X™ is the Company's farthest-reaching device, with an ability to deliver clear voice commands and other sounds up to 8,900 meters (approximately 5.5 miles). The LRAD 2000X™ allows users to adjust the beam width to maximize or minimize the coverage area of the broadcast.

Figure 11
LRAD Corp.
LRAD 2000X™ FEATURES



- Full military and sustainment program support
- Domestic and international relief assistance
- Designed to meet stringent U.S. military requirements
- Clear, long-range directional communication
- Variable beam width for extended coverage
- Rugged military-tested construction for all-weather use
- Low power requirements
- Flexible mounting, simple to operate
- Safe alternative to non-lethal deterrent options
- Increased coverage with single operator
- Improved response times and coordination efforts

Source: LRAD Corp.

Customer-Centric Product Development

A significant portion of LRAD Corp.'s product development is based on customer feedback, particularly from the military. For example, the military was seeking a technology that could be used to draw enemy fire to determine where enemies were located. To fulfill this need, the Company developed wireless capability so that its LRAD® systems can be placed at a safe distance from U.S. troops to broadcast a clip of soldiers talking—serving as a decoy for enemy fire.

Moreover, the military has also sought safer communication solutions for soldiers entering hostile civilian territories. The LRAD 1000X™ has been deployed in Iraq and Afghanistan to improve communication to civilians by issuing clear, audible messages in the native language. The goal of such communication was to deter rock throwing at U.S. convoys and prevent serious injuries on both sides of the device. LRAD Corp. reports that its system has proven successful in deterring incidents.

Law enforcement officials have demonstrated a demand for a wireless AHD for large crowd scenarios, such as a concert-type setting, that can be mounted (rather than the 100X™, which is designed to be portable). While LRAD Corp. has launched the wireless version of its LRAD 100X™, the Company plans to expand its wireless capabilities into the 300X™ and 500X™ models.

Warranty/Maintenance

LRAD Corp. offers a limited warranty, guaranteeing its products to be free from defects in materials and workmanship for up to one year from the date of purchase. While the Company presently offers direct warranty service, the Company may establish warranty service through original equipment manufacturer (OEM) customers or others in the future. LRAD Corp. also provides service and maintenance agreements and extended warranty contracts to customers, which serves as an additional source of revenue and increases customer satisfaction.

Manufacturing

LRAD Corp. contracts with both local and foreign third-party suppliers to produce various components and sub-assemblies. Final assembly and testing is done at the Company's San Diego, California, facility. In addition to rigorous manufacturing and quality processes, LRAD Corp. employs third-party testing and certification of its products to ensure that they meet military specifications.

Key Markets

LRAD Corp.'s technologies have application within a number of growing markets in the U.S. and globally, including the military, public safety, commercial security, and wildlife asset and protection sectors. Presently, the Company's largest market is the military. In FY 2011, military sales accounted for more than 58% of LRAD Corp.'s revenues. In 2012, the Company is looking to further diversify its customer base by focusing efforts on government, law enforcement, homeland and international security, private and commercial security, maritime security, and wildlife preservation and control markets.

Internationally, LRAD Corp. is continuing to expand and gain acceptance, with many countries deploying LRAD® systems in military and law enforcement settings. In September 2010, a foreign government ordered over \$12.1 million in LRAD® systems for one of its military services—the Company's largest international order to date—and signed a \$5.5 million multi-year maintenance agreement. In June 2011, LRAD Corp. received a \$293,000 opening order from Israel's Ministry of Defense for LRAD 100X™ and 500X™ systems. In September 2011, the Company received a \$500,000+ order to equip foreign armored national police vehicles with LRAD 300X™ systems. Most recently, in December 2011, the Company announced an opening order from the Middle East for anti-piracy oil tanker installations and a follow-on order from Thailand's Department of Disaster Response. As of December 2011, LRAD® systems had been purchased by customers in over 45 countries.

An overview of LRAD Corp.'s publicly disclosed orders during 2011—which range from \$200,000 to over \$1.1 million—is provided in the Appendix on page 59.

MILITARY

Technological improvements in war weaponry have significantly increased in recent years, enabling enemies to more effectively decentralize, network, and organize to become more lethal than in the past (Source: *The Guardian*, "U.S. faces more threats than decade ago, warns head of its military," November 28, 2011). As a result, increasing demands have been placed on U.S. troops and resources are being stretched to the limit.

Force protection technologies that increase security coverage and improve response times and coordination efforts—while requiring less manpower—can be used to reduce these challenges. To be used in an operational scenario, these tools must be easily accessible, rapidly deployable, and quickly enable escalation of force as needed.

LRAD® technology is a non-lethal means to establish larger standoff and safety zones on land, in air, or at sea, and to help troops determine the intent of groups or individuals at significant ranges. With LRAD®, operators are able to issue highly intelligible and authoritative voice commands and powerful deterrent tones to enforce standoff distances and potentially provide more time to accurately assess and respond to a situation. LRAD® systems serve as a force multiplier, enabling larger security coverage with fewer personnel. Messages delivered by LRAD® can be recorded in multiple languages to further improve communication between troops and both civilians and enemy forces, as necessary. Moreover, the messages can be heard and understood through physical barriers, such as buildings or vehicles.

LRAD Corp. has identified military programs as its largest market opportunity worldwide due to the broad number of agencies as well as the large budgets that have traditionally been allotted for military spending. Several military applications that may benefit from LRAD® technology are highlighted in Table 3 (page 23). While the U.S. Navy has been LRAD Corp.'s largest U.S. military customer to date, the Company considers the U.S. Army to be its largest opportunity within the U.S. defense program. Whereas the Navy has fewer than 300 active ships (as of September 30, 2011), the Company estimates that the Army has nearly 20,000 land vehicles that could benefit from LRAD® technology. In September 2010, LRAD Corp. received over \$1.5 million in new LRAD® 100X™/300X™/500X™ orders from the U.S. military.

Table 3
LRAD Corp.
MILITARY APPLICATIONS

▪ Convoy Protection	▪ Port Security
▪ Unmanned Vehicles (UAV/UGV)	▪ Force Protection
▪ Maritime Vessel Protection/Anti-Piracy	▪ Special Operations
▪ Infrastructure/Perimeter Protection	▪ Enforcement of Exclusion Zones
▪ Multi-language Large Crowd Communications & Control	▪ Psychological Operations (PYSOP)
▪ Remotely Enforcing Security Zones	▪ Interdiction Operations
▪ Checkpoint Security	▪ Detainee Operations
▪ Mass Notification	

Source: LRAD Corp.

LRAD Corp. believes that its technology can help save lives and support peaceful conflict resolution on both sides of the line. LRAD® systems enable soldiers to communicate to individuals or groups encountered during missions, create larger standoff and safety zones, and help soldiers more easily determine an individual's or group's intent from a safe distance. Moreover, the improved ability to communicate minimizes the need for non-lethal or lethal weaponry as a form of communication or scare tactic, which can increase tensions and lead to unnecessary deaths of both soldiers and civilians.

Manned and Unmanned Vehicles

LRAD® systems, such as the LRAD 300X™, can be mounted on a number of manned military vehicles (e.g., Humvees) to facilitate communication to both troops and potential threats during convoys. LRAD® systems have been deployed in Iraq and Afghanistan for such purposes, where they have proven successful as deterrents to civilian hostility.

Unmanned aerial vehicles (UAVs), ground vehicles (UGVs), and surface vehicles (USVs) have been used by both civilians and the military to perform a range of tedious or dangerous activities from surveillance and remote sensing to transporting goods or delivering explosives. However, traditional unmanned vehicles are often unable to communicate with or deter potential threats. Additionally, as these robots typically have high power requirements (thus limiting performance on extended missions), enhancements must have low power requirements.

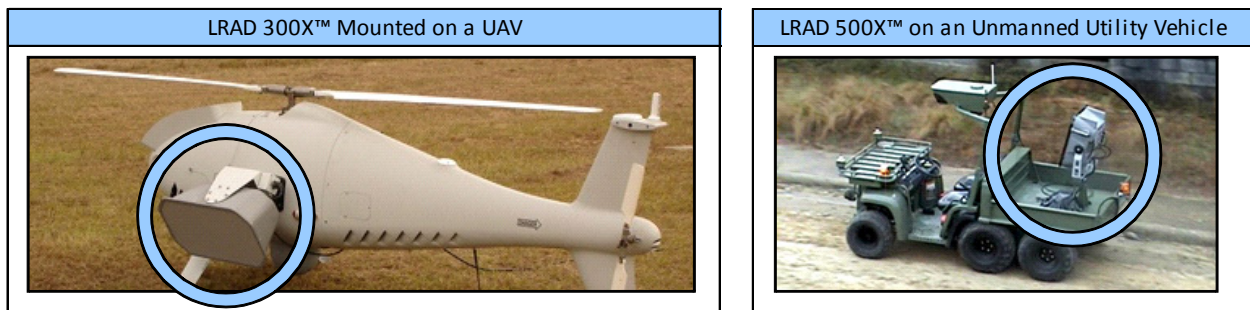
LRAD Corp. is working with defense, government, and military organizations to provide remotely operated tactical broadcast and deterrent capabilities on unmanned vehicles operated on land, air, or sea. LRAD® systems can be integrated into sensor networks designed to track potential threats. Once a potential threat is detected, the coordinates are transmitted to the LRAD® mounted on an unmanned vehicle, allowing operators to directly communicate to the individual or group from a safe location. An unmanned drone equipped with an LRAD® system could be used to communicate to troops or insurgents up to several miles away—operated remotely by a soldier from a safe location.

The left side of Figure 12 (page 24) illustrates an LRAD 300X™ mounted on a helicopter UAV, which could be used to broadcast instructions over large areas in emergency situations. On the right side of Figure 12 (page 24), an LRAD 500X™ has been mounted on a UGV to deliver messages remotely in unsafe areas.

Figure 12

LRAD Corp.

UNMANNED VEHICLES EQUIPPED WITH LRAD® SYSTEMS



Source: LRAD Corp.

Naval Maritime Applications

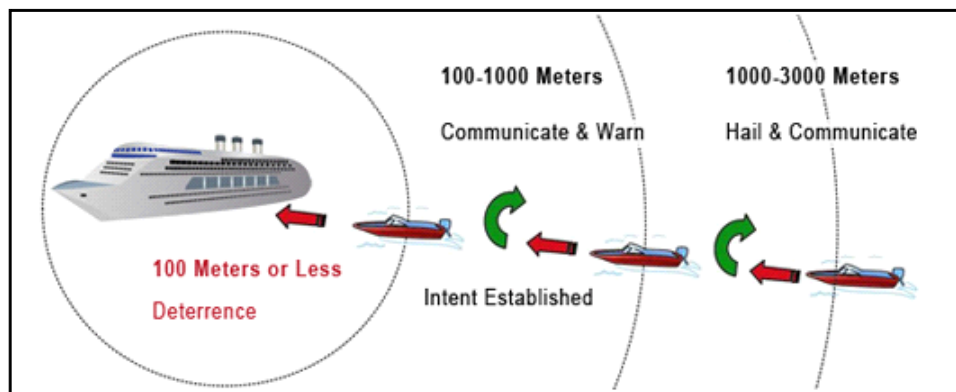
LRAD® technology was developed in response to the attack on the USS Cole in 2000. Since then, products derived from this technology have been employed in a number of naval maritime applications internationally, a selection of which are highlighted below.

- *South Korean Navy.* In January 2011, the South Korean Navy used LRAD® to rescue the chemical tanker MV Samho Jewelry after it was seized by pirates off the coast of Somalia. LRAD® was used to alert the hijacked crew of the rescue operation and to broadcast warnings to the pirates.
- *The Japanese Maritime Self-Defense Force (MSDF) Destroyer Harusame.* In August 2009, a suspicious small boat was spotted roughly 3.5 nautical miles off the Harusame’s starboard bow. The Harusame hailed the vessel using LRAD® and used its onboard helicopter to verify the boat’s status.
- *MV Resolve & Sunshine Sky.* The ships repelled a pirate attack at 1,100 meters by conducting evasive maneuvers and issuing verbal warnings to two approaching crafts.
- *The 7th Transportation Group (part of the U.S. Army).* Theater support vessels (TSVs) have employed LRAD® for vessel identification/intent, force protection mode, or hailing (signaling) an escort.

It is noteworthy that LRAD® systems exceed the Naval Vessel Protection Zone for standoff distances for ships pier side, at anchor, or in restricted waters. Specifically, vessels are not allowed within 100 yards of a U.S. naval vessel (unless authorized), and those within 500 yards of a navy ship must operate at the minimum speed necessary to maintain a safe course and proceed as directed by the official patrol.

LRAD® systems were designed to be a part of the U.S. Navy’s escalation-of-force protocol. In a maritime setting, such as the USS Cole incident, LRAD® systems can be used to first signal and communicate to vessels that are detected up to 3,000 meters away (as shown in Figure 13 [page 25]). Using LRAD®, a Navy ship may establish a ship’s identity and inform the vessel of the mandated perimeter while assessing the potential threat. Vessels that have entered the area by mistake can quickly turn around and correct their error. If the ship has turned around, the intent is determined to be non-threatening and the escalation of force ceases. At 100 meters to 1,000 meters, crew members can use LRAD® to warn the approaching vessel of the escalation of force that they could become subject to by breaching the 100-yard naval protective zone. Depending on the perceived threat, some non-lethal weapons may also be deployed. If the vessels continue to approach despite the warnings and enter the protective zone, the intent can be assumed to be hostile and lethal action may be taken. This technique provides ample time for a crew to scale their response and make critical decisions.

Figure 13
LRAD Corp.
LRAD® SIGNALING IN A MARINE SETTING



Source: LRAD Corp.

U.S. Naval Forces

The U.S. Navy has been a customer of LRAD Corp. since 2003, employing LRAD® systems as part of its escalation-of-force protocol to help protect sailors and keep civilians safe during uncertain situations at sea. From 2003 through early 2011, the Navy ordered over \$6 million in LRAD® systems and services. LRAD Corp. estimates that its technologies are deployed on most of the Navy's large ships.

Recently, demand from the Navy has increased. Following extensive testing by the Navy, LRAD Corp. won a competitive bid in August 2010 for a multi-year, \$6.2 million order for integrated LRAD-RX® systems and services. In August 2011, the Navy placed a \$1.5 million order, composed mainly of LRAD 1000X™ systems and support equipment. In September 2011, the Navy placed a \$1.1 million follow-on order composed primarily of LRAD-RX® and LRAD 1000X™ systems and support equipment.

To date, LRAD® products have been used by the U.S. Navy's *Lewis & Clark* and *MV Green Ridge* ships to successfully repel pirate attacks at 2,000 yards and 250 yards, respectively. The Navy has also employed LRAD-RX® for perimeter security at its Bahrain Pier Naval Base (illustrated in Figure 14).

Figure 14
LRAD Corp.
U.S. NAVAL BASE (BAHRAIN PIER)



Source: LRAD Corp.

Expanding Military Applications

LRAD Corp. is focused on continually expanding the range of applications for its products in the military setting. In addition to its use on vehicles and ships, LRAD® systems can be mounted on helicopters to enable military personnel to quickly cover large areas with voice communications and instructions in multiple languages (shown in Figure 15 [page 26]). For example, the Colombian Air Force mounted an LRAD 1000X™ system on a UH-60 Blackhawk helicopter to communicate demobilization messages to guerrillas hidden in Colombia's rain forests (illustrated in Figure 16 [page 26]).

Figure 15

LRAD Corp.

LRAD 1000X™ MOUNTED ON A UH-60 BLACKHAWK HELICOPTER



Source: LRAD Corp.

Figure 16

LRAD Corp.

COLOMBIA'S MINISTER OF DEFENSE ISSUING DEMOBILIZATION MESSAGES TO GUERRILLAS USING LRAD 1000X™



Source: LRAD Corp.

Significant Military Opportunities

The Company plans to pursue large, multi-year U.S. Army, international military, and commercial security orders. LRAD Corp. believes that successfully landing multi-year contracts could help the Company achieve several goals: (1) even out its quarterly sales revenues (which currently vary due to long lead times and customers' budget constraints); (2) help better forecast revenues on a quarterly or annual basis; (3) provide more data for extrapolation as to where the Company can grow its business; and (4) prove the viability of the AHD market.

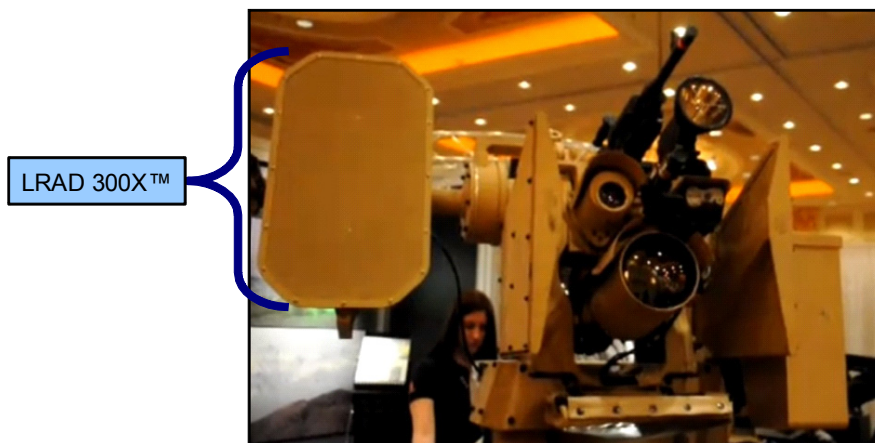
Kongsberg's PROTECTOR Remote Weapon Station

LRAD Corp. has partnered with Kongsberg Gruppen ASA—a global military and defense contractor headquartered in Norway—to add LRAD 300X™ systems and other enhancements to Kongsberg's PROTECTOR Common Remotely Operated Weapon Station (CROWS). The CROWS model of the PROTECTOR series was designed specifically to meet the requirements for the U.S. Army's CROWS II program, which focuses on implementing technologies that allow soldiers to operate weapons from within an armored vehicle. The PROTECTOR supports light- to medium-caliber weapons and can be mounted on nearly any type of platform while being operated remotely.

LRAD Corp. has worked with Kongsberg for several years to add a non-lethal communications package—including the LRAD 300X™, high-powered night vision, and a laser dazzler—to the PROTECTOR for troops operating mine-resistant ambush-protected (MRAP) vehicles (demonstrated in Figure 17 [page 27]). The addition of the LRAD 300X™ to the remote weapon system provides troops with escalation-of-force options and the ability to communicate with targets from within the safety of armored vehicles. To the Company's knowledge, its LRAD® systems are the only AHDs that currently meet all U.S. military requirements.

LRAD Corp. reports that it presented its LRAD® system on the PROTECTOR to the U.S. Army and has received positive feedback to date. The Company is working with Kongsberg to obtain a small opening order for field testing. While LRAD Corp. plans to pursue larger, multi-year contracts, uncertainty concerning the U.S. defense budget for 2012 and beyond could extend anticipated timeframes.

Figure 17
 LRAD Corp.
 PROTECTOR CROWS RETROFITTED WITH THE LRAD 300X™ COMMUNICATIONS PACKAGE PROTOTYPE



Source: LRAD Corp.

Kongsberg's Existing Contract with the U.S. Army

In August 2007, Kongsberg Defense & Aerospace AS won a competitive bid for a five-year framework agreement to supply remote weapon stations for the U.S. Army's CROWS II program. The original CROWS II contract was valued at roughly NOK 8 billion (~US\$1.3 billion) for 6,500 systems. The contract was increased to 10,349 systems in December 2009 and ultimately to 11,690 systems in January 2011. As of February 2011, Kongsberg had delivered over 10,000 remote weapon stations to the U.S. Army (Source: Kongsberg's press release, February 17, 2011). Kongsberg has a production unit located in Pennsylvania to manufacture and service weapon stations.

Upcoming Bid for the CROWS III Program

In September 2011, the U.S. Army disclosed that the initial CROWS III contract is valued at \$970 million (roughly 3,000 units) and would be awarded to a single supplier (Source: PR Newswire, September 8, 2011). The total scope of the agreement is dependent upon on the U.S. Army's future demand and annual budgets going forward. LRAD Corp. and Kongsberg are working on a submission for the CROWS III contract.

U.S. Army Has Requested Information for AHDs from LRAD Corp.

In October 2011, the U.S. Army issued a public Request for Information (RFI) regarding 6,350 AHDs. LRAD Corp. is actively pursuing this opportunity. Despite the slowed process for establishing the 2012/2013 U.S. defense budget by Congress, the Company is hopeful that the process could advance to the formal Request for Proposal (RFP) stage in 2012.

PUBLIC SAFETY

Historically, available technologies for communicating to large crowds in loud environments, such as bullhorns or other portable mass notification systems, have often proven ineffective, as they are limited in volume, intelligibility, and broadcast distance. With an ability to deliver clear, audible messages over long distances, the Company's LRAD® devices have been effective at improving communication in a number of public safety situations, including those listed in Table 4.

Table 4
LRAD Corp.
A SELECTION OF PUBLIC SAFETY APPLICATIONS FOR LRAD® SYSTEMS

▪ Large crowd communications	▪ Mass notification
▪ Search and rescue operations	▪ Chemical, biological, radiological, and nuclear (CBRN) incident response
▪ Infrastructure and perimeter protection	▪ Hostage negotiation from a safe location
▪ Enforcing security zones from secure remote locations	▪ Serving warrants
▪ SWAT operations	▪ Fire/HAZMAT evacuation and communication
▪ Emergency responder situations	
▪ Crowd/riot control	

Source: LRAD Corp.

In these situations, LRAD® systems can be used to warn of pending flooding or tornadoes, evacuate populations, direct survivors to aid stations, warn of contaminated food and water supplies, or announce evacuation routes and assembly areas for rescue operations, among other critical broadcasts, warnings, and notifications, including those listed in Table 5.

Table 5
LRAD Corp.
LRAD® SYSTEMS CAN BE USED TO DELIVER A RANGE OF INFORMATION DURING EMERGENCIES

Broadcasts	Warnings
▪ Help calm anxious civilian populations	▪ Established restricted areas
▪ Help control or disperse crowds	▪ Intended police action to clear the streets
▪ Provide mass communication over wide areas	▪ Contaminated water or disease
▪ Direct the actions of individuals at standoff distances	▪ Potential for aftershocks, tsunamis, or landslides
▪ Communicate messages across parks, large open areas, and bodies of water	▪ Possible flood level surges
	▪ Blocked evacuation routes
Notifications	
▪ Location of aid stations	▪ Availability of rescue resources in the area
▪ Arrival and distribution of relief supplies	▪ Instructions to residents (stay, evacuate, safe routes)

Source: LRAD Corp.'s "LRAD Bridges the Communication Gap in Civil Emergency Situations" White Paper, January 2011.

Public safety tools such as LRAD® systems are used in a wide range of environments. As such, they must be portable, rugged, and easy to operate. Accordingly, the Company's products for public safety are lightweight, battery-operated, and portable. As well, the durable outer housing protects the device even in harsh environments.

In emergency situations (such as natural disasters, riots, or terrorist attacks), military, law enforcement, or security personnel can use ground-based or helicopter-mounted LRAD® systems to quickly communicate warnings, instructions, and directions to large groups, even in areas where power and communication have been disrupted. The directionality and acoustic output of LRAD® systems allow a message to be broadcast clearly even through

common barriers, such as vehicles or buildings. These capabilities reduce the manpower necessary to provide instructions and directions to large groups and control volatile situations (e.g., riots, protests, or natural disasters), thus allowing first responders and emergency personnel to attend to more critical duties. As such, LRAD® systems are also cost effective as the improved communication pathways may reduce the manpower and costs necessary to ensure the safety and security of those involved.

Mass Notification

In a natural disaster, terrorist attack, school shooting, chemical spill, or other emergency, mass notification systems can be used by college campuses, corporate office buildings, law enforcement, city officials, and hospitals, among others, to communicate crucial instructions and time-sensitive information to a large number of people. Traditional mass notification systems include internal public address (PA) systems, loud speakers, phone calls, radios, and TV broadcasts. More recently, text messaging, instant messaging, and emails have also been incorporated into emergency notification protocols. In 2010, mass notification system sales in the U.S. alone exceeded \$1.2 billion (Source: IMS Research press release, April 20, 2011).

LRAD Corp. believes that its communications systems significantly improve upon available mass notification technologies. Power or phone line outages are common after natural disasters (e.g., hurricanes or tornados) and can render conventional techniques, such as phones, radios, and TV broadcasts, completely unusable. In the Midwestern U.S., city officials often use tornado sirens to notify residents when a tornado is present; however, this lacks critical information, such as a more precise location of the tornado and anticipated timing of impact.

LRAD® systems overcome these weaknesses as they are battery operated, negating the need for electricity, and can deliver messages in real-time. Moreover, the Company's products surpass the broadcast range of traditional PA systems and loud speakers, sending a clear and audible message over a large range. Given LRAD Corp.'s competitive advantages in this area—combined with the large market size—the Company is focused on increasing its market share in the mass notification sector in 2012.

Protests, Riots, and Large Crowds

LRAD® can be a critical part of the layered defense/escalation-of-force strategy for law enforcement and government agencies. LRAD® products are designed to effectively deliver a message over the noise of the crowd to all participants—from the front to the back of the crowd. Traditionally, bullhorns are used to give directions as part of law enforcement's escalation-of-force protocol when trying to control an unruly crowd. If the group does not respond as instructed and safety is at risk (whether or not the instructions were heard), officials may have to progressively increase force in order to maintain control of the crowd. Law enforcement may then use non-lethal weapons, such as tear gas, rubber bullets, water cannons, or batons. Force protection systems deployed in these and similar layered defense protocols must be easily accessible and rapidly deployable, facilitating near instantaneous escalation in critical situations.

In a riot-type setting, LRAD® could be employed to fill the communications gap between warnings and non-lethal force, as existing technologies (e.g., bullhorns) may not be sufficient for delivering critical instructions and warnings to each individual involved. LRAD® helps to ensure that all parties present receive a clear, loud message.

LRAD Corp. received substantial media coverage after its products were used for public safety in widely publicized events, such as at the G20 Summit in Pittsburgh in 2009 and the Occupy Wall Street movement in New York and Los Angeles in late 2011. In these incidents, law enforcement has used LRAD® systems to communicate to participants of riots and protests.

LRAD® has also been used in non-protest crowd situations (e.g., concerts or rallies) where law enforcement is typically required to keep the peace. Rather than having a significant number of law enforcement personnel present, which can be costly, LRAD® systems can be used to broadcast messages to the audience, such as informing the crowd when an event has ended and the premises are closing.

Using LRAD® Systems to Communicate in the Wake of Natural Disasters

LRAD Corp.'s devices have been deployed to aid mass communication and search and rescue operations in the aftermath of a number of natural disasters to date, including Hurricane Katrina (2005), the 2010 earthquake in Haiti, and the devastating 2011 earthquake and tsunami in Japan. In Haiti, where there are two official languages (French and Creole), the U.S. military utilized LRAD® systems to communicate messages regarding the locations of aid stations and supplies in multiple languages. Most recently, in October 2011, Thailand's Department of Disaster Response ordered LRAD 100X™ and LRAD 500X™ systems to support flood relief efforts after three months of heavy rain.

Helping SWAT/Law Enforcement Maintain Public Safety

LRAD® is also used during law enforcement or SWAT operations to inform and provide directions (e.g., "stay indoors") to nearby residents and onlookers to ensure their safety. Moreover, SWAT teams use LRAD® to communicate to and instruct individuals within a home or building to encourage them to exit the premises before employing other techniques, such as rubber bullets, tear gas, and flash bangs, among other tools. In Santa Ana, California, the SWAT team used LRAD® to drive gang members out of a house. After employing LRAD®, 10 suspects emerged without using lethal force or risking the safety of officers by entering the residence.

As well, the New York Police Department (NYPD) has used LRAD® systems to help control crowds during the Republican National Convention protests in 2004 as well as on New Year's Eve. The San Diego County Sheriff's Department has used LRAD® at public events and in search and rescue operations. Additional law enforcement uses have included deploying LRAD® for prison yard control, barricaded prisoner removal, and cell block riot control situations.

Other Public Safety Applications

LRAD® systems have moreover been used in situations where individuals sought to end their life by jumping off of a bridge or building. Microphones or bullhorns can be ineffective when trying to communicate with these individuals from the ground. The directionality and focused output of LRAD® allows officials to speak directly to distraught individuals. The Company reports that its devices have been a successful tool in talking individuals down in several incidents to date.

Beyond its ability to broadcast sound, LRAD® systems can also improve communication by breaking language barriers. In areas where multiple languages are spoken, messages and warnings can be configured for broadcast in several languages to facilitate communication to as many individuals as possible. As illustrated in Figure 18, an LRAD® system was used in Singapore to reduce tensions after over 1,000 workers were left stranded and confused after their planned mode of transportation was delayed.

Figure 18
LRAD Corp.

USING COMMUNICATION AS A TOOL TO DIFFUSE POTENTIALLY VOLATILE SITUATIONS



In Singapore, over 1,000 foreign workers were stranded after their buses were delayed due to a traffic jam. An LRAD 100X™ was used to explain the situation to frustrated workers in several languages in an effort to reduce anxiety and mitigate a potentially volatile situation.

Source: LRAD Corp.

COMMERCIAL SECURITY

Today, there is an increased need for enhanced security to protect people and property on commercial maritime interests, harbors, oil pipelines, and offshore platforms. The Company's LRAD® products can help secure perimeters and protect infrastructure both on land and at sea in a number of commercial security applications and scenarios. A selection of these are provided in Table 6. LRAD® technology improves upon traditional passive surveillance systems by serving as a first responder and providing an effective means to communicate with potential threats in real time.

Table 6
LRAD Corp.
COMMERCIAL SECURITY APPLICATIONS FOR LRAD® SYSTEMS

- | | |
|-----------------------------|----------------------------------|
| ▪ Perimeter Security | ▪ Unmanned Oil and Gas Platforms |
| ▪ Infrastructure Protection | ▪ Cruise Lines |
| ▪ Commercial Shipping | ▪ Personal Vessel Security |
| ▪ Port Security | |

Source: LRAD Corp.

The ability to broadcast messages and signals audibly and clearly over distances up to 8,900 meters (roughly 5.5 miles) can help on-site security personnel effectively communicate warnings to potential threats and help determine their intent from a safe distance as well as establish and maintain large standoff and safety zones. Figure 19 illustrates an LRAD® device installed for perimeter security purposes.

Figure 19
LRAD Corp.
EMPLOYING LRAD® FOR PERIMETER SECURITY



Source: LRAD Corp.

LRAD® systems may also reduce the frequency of false alarms. In some cases, a person on foot or individuals driving vehicles or vessels may unknowingly enter private or secure premises. The ability to communicate messages and warnings to the potential threat provides them with an opportunity to correct their action by leaving the area or following the specified instructions given through LRAD®. This minimizes the risk of false alarms and the unnecessary escalation of force in the case of an accidental intruder.

LRAD® technology can be deployed by port security organizations (e.g., the U.S. Coast Guard and U.S. Customs and Border Control) to secure ports or waterfront perimeters as well as by cruise ships, commercial vessels, or personal yachts to protect against threats. A selection of maritime commercial security scenarios where LRAD® systems have been beneficial in facilitating communication and preserving the safety of those involved are provided on page 32.

- *Cable Ships*. LRAD® has been used to warn Egyptian fishing vessels to remain clear of underwater cable tracks used for telecommunications, electric power transmission, or other purposes.
- *Perro Negro 3 Drilling Platform*. LRAD® has been installed to communicate with ships approaching the oil platform.
- *Seabourn Spirit*. In November 2005, the luxury cruise liner used LRAD® to repel a pirate attack and prevent pirates from boarding the vessel near the coast of Somalia.

As shown in Figure 20, the Sheriff's Department in Broward County, Florida, used LRAD® to create a 200-meter waterfront security perimeter at the Fort Lauderdale Convention Center when President Bush spoke at the Organization of American States in 2005 to address and direct trespassers without the need to send patrols.

Figure 20
LRAD Corp.

THE BROWARD COUNTY SHERIFF'S DEPARTMENT USES LRAD® TO MAINTAIN A 200-METER WATERFRONT SECURITY PERIMETER



Source: LRAD Corp.

Pirate Attacks are a Prevailing Threat

The International Maritime Bureau (IMB) received reports of 439 pirate attacks globally during 2011, slightly down from 445 incidents in 2010. In total, 113 vessels were fired upon, 176 ships were boarded, 45 vessels were hijacked, over 800 crew members were taken hostage, and eight people were killed (Source: the IMB's Piracy Reporting Centre, January 19, 2012). In February 2011, four Americans were killed after their yacht was attacked and boarded by pirates off the Somali coast (Source: *Washington Times*, February 22, 2011). While global attacks have decreased slightly, pirate attacks against vessels in East and West Africa are on the rise, accounting for over 60% of attacks in 2011 (Source: the IMB's Piracy Reporting Centre, July 14, 2011).

LRAD® systems can be deployed on vessels from cruise ships to personal yachts to help ward against an impending attack. LRAD® products are a proactive approach to rapidly establish an oncoming vessel's intent as well as a response plan.

Recent Market Uptake for Perimeter Security

Recently, the Company has received several key orders to fulfill perimeter security needs. In September 2011, the U.S. Air Force placed a \$200,000+ order. In this instance, the Air Force employed LRAD-RX® systems to support long-range communication and perimeter security at a test and firing range located on one of its bases. The Air Force is using LRAD-RX® to quickly clear test and firing ranges before drone testing and live fire exercises, minimizing the need for ground patrols, which require significant time and personnel.

Most recently, in December 2011, the city of Fort Worth, Texas, placed an order for LRAD-RX® systems as part of a perimeter security upgrade for one of the city's critical infrastructure facilities.

Unmanned Premises

Thieves and vandals often perceive unmanned platforms as vulnerable targets as, traditionally, little could be done to quickly deter crime. For locations that are unmanned, such as many oil and gas platforms, the ability to operate LRAD® from a remote location via an IP network is particularly beneficial. This allows offsite personnel an opportunity to rapidly respond to security threats from the safety of a command and control center.

Moreover, unmanned platforms are also at risk of damage from wildlife habitation, or may have machinery or elements that could harm or kill animals. To minimize these risks, LRAD® systems can be used to broadcast sounds that are designed to deter birds and other wildlife from entering certain areas (greater details on pages 34-38).

Offshore Oil Platforms

Remotely operated LRAD® systems, such as LRAD-RX®, can be deployed at offshore oil and gas platforms to deter potential security threats, fishermen, and wildlife from approaching or damaging unmanned sites. Moreover, it can be used to warn fishing trawlers that entering the extended security zones around the platforms could endanger divers working on oil rigs. To improve its efficacy and broaden its application in these settings, the LRAD-RX® can be integrated with high-power spotlights and sensors, among other add-ons.

The remote protection of critical oil and gas facilities has become an emerging market application for LRAD Corp. The Company reports that its oil platform deployments have been increasing globally and now include platforms off the coast of Australia, in the Gulf of Mexico, and in the Bay of Bengal.

In August 2011, LRAD Corp. received an order for LRAD-RX® systems as part of an effort to remotely secure multiple offshore oil platforms.

WILDLIFE AND ASSET PROTECTION

LRAD Corp.'s products have a wide range of potential applications in wildlife and critical asset preservation. Protecting wildlife, preventing aircraft bird strikes, and reducing losses from wildlife-related crop and equipment damage are emerging markets with significant potential for LRAD® systems. LRAD® systems are capable of emitting a large variety of tones and predator calls designed to deter approaching wildlife over 3,000 meters. The devices can be operated manually or remotely, depending on the customer's needs. Moreover, LRAD® systems can be integrated with avian radar to locate birds entering control zones. Once detected, the radar system activates LRAD® to deliver intense, directional sounds in a variety of tones and predator calls—deterring wildlife in a humane manner.

To date, LRAD® technology has been tested at airports, air bases, harbors, wind farms, tailing ponds, and other facilities that have human and wildlife safety concerns, and is proving to be effective at preserving both wildlife and critical assets. LRAD Corp.'s novel long-range, directed-sound capability may also benefit solar farms, nuclear power facilities, various agricultural operations, fisheries, and other industries and critical facilities that have wildlife preservation concerns. The LRAD-RX® model is being used successfully with radar to prevent bird landings and wildlife incursions into hazardous water and waste areas. LRAD® systems with integrated radar can be beneficial in protecting both wildlife and assets, as well as tracking data, in a number of scenarios, as listed below.

- *Airports.* LRAD® systems with avian radar deter birds and waterfowl to prevent aircraft bird strikes.
- *Oil Tar Sands Processing Facility.* Large-scale, LRAD®-equipped radar platforms deter birds from large waste impoundments at oil tar sands processing facilities.
- *Gas Processing Plant Impoundment.* Avian radar systems detect and track migratory and resident bird activity approaching the site and automatically activate the LRAD® system as necessary to prevent birds from landing on petrochemical waste ponds.
- *Mine and Processing Plant.* Large-scale, single radar-equipped LRAD® systems and programmable laser deterrent devices keep birds from entering the defined control area within a mine and processing plant.
- *U.S. Department of Agriculture.* Extended range bio-acoustics can be employed to deter raptors, migratory waterfowl, and resident birds from airfields.

In 2011, LRAD Corp. received \$1.5 million in LRAD® orders from its bird control and protection partner, DeTect, Inc., a developer of radar systems for aircraft bird strike avoidance, avian risk assessment, and migratory research.

Mining/Tailing Ponds

Each year, thousands of birds and other animals are killed after visiting contaminated tailing ponds, which are man-made structures used to store waste from mining. Tailing ponds pose a significant threat to wildlife as animals can mistake these ponds for natural water sources. Tailing ponds may be filled with hydrocarbons, brine, silts, clays, heavy metals, **bitumen**, ammonia, and **naphthenic** acids. While these ponds are intended to prevent fine tailings from being transported by wind into populated areas where the toxic chemicals could be hazardous to human health, they often attract and harm wildlife. Water fowl that become coated in oil or that drink from toxic ponds may become ill or die.

Internationally, water fowl deaths related to mining concerns are believed to be vastly underreported. In September 2010, a study published in the *Wilson Journal of Ornithology* revealed that bird deaths due to oil sands tailing ponds in Alberta, Canada, could be over 30 times greater than oil industry reports. From 2000 to 2007, the industry reported 65 bird deaths on average each year from tailing pond exposure in northeastern Alberta. The 2010 study proposes a 14-year median of 1,973 deaths annually due to tailing ponds (Source: CBC News' press release, September 7, 2010).

When waterfowl deaths exceed government standards, environmental fines may be assessed to mining operations. In Alberta, companies face fines of \$10,000 for each bird death. In October 2010, oil sands producer Syncrude Canada Ltd. was fined \$3 million—the largest environmental penalty in Alberta’s history to date—after its tailing ponds caused the deaths of over 1,600 ducks in 2008 (Source: the *Globe and Mail*, October 22, 2010). In 2011, the U.S. Attorney for North Dakota charged seven oil and natural gas companies with killing 28 migratory birds that were found dead near oil waste lagoons. In the U.S., causing the death of a bird (such as a mallard duck) can carry fines of up to \$15,000 for each dead bird and up to six months in prison (Source: the *Wall Street Journal*, September 29, 2011).

In the face of increased regulations, many mining concerns have sought techniques to keep birds away from tailing ponds, including firing blanks from shotguns or using timer-controlled propane cannons (which mimic the sound of a shotgun) to scare off birds and other animals. However, these methods often have short ranges (from roughly 30 meters to 275 meters), can be costly (if manually operated), and animals can become accustomed to the repetitive sounds produced by these techniques. More advanced products with longer ranges are available but entail a higher cost per shot expense.

In contrast, LRAD Corp. has combined its LRAD® technology with avian radar detection from DeTect, Inc. to directly target flocks that are approaching a restricted area where tailing ponds are located (shown in Figure 21). Once a bird or a flock is tracked on radar, LRAD® is activated and begins broadcasting various tones and predator calls over long ranges in an effort to humanely deter birds from landing on the ponds. Moreover, LRAD® systems include an MP3 player where various predator and other deterrent tones can be broadcast to discourage birds and other wildlife from entering the area. By keeping birds away from tailing ponds, LRAD® systems may be able to dramatically reduce both the number of birds killed annually and related fines.

Figure 21
LRAD Corp.
DEPLOYING LRAD® WITH AVIAN RADAR TO PREVENT WILDLIFE FROM ENTERING TAILING PONDS



Source: LRAD Corp.

LRAD Corp.’s devices have been used successfully in several mining sites to date. The Company reports that its devices have been installed in a several mining operations for over two years and have reduced bird deaths from thousands annually to less than 20 per year.

To date, LRAD Corp. has received multiple orders to install several LRAD® systems at international mining sites.

Wind and Solar Farms

Capitalizing on the ability of LRAD® systems to deter birds in mining scenarios, the Company is applying its technology to other applications that impact wildlife, such as wind and solar farms. Public policy organizations, such as the Frontier Centre for Public Policy, are calling more attention to the environmental impact of wind farms, which are often touted for their “green” benefit. However, wind turbines cause roughly 440,000 bird deaths each year in the U.S. (Source: the U.S. Fish and Wildlife Service). The Frontier Centre has reported that—kilowatt hour by kilowatt hour—Ontario wind farms kill approximately 445 times more birds annually than local oil sands (Source: the American Bird Conservancy). Bird and wind turbine incidents also have financial implications. The impact of an animal can damage the machines’ blades, which is costly to repair and results in down time for energy production.

Wind turbines in the U.S. in particular have not been subject to the regulations and fines imposed on oil companies for bird deaths due to their status as a clean energy source. For example, turbines at the Altamont Pass Wind Resource Area in Northern California kill scores of golden and bald eagles each year. While these birds are highly protected under federal law, there have been no federal prosecutions to date (Source: the *Wall Street Journal*, September 29, 2011). Nevertheless, prior to operation, wind farm owners may be required to perform a migratory bird research study to determine if the location interferes with annual flight patterns. Moreover, many wind farms have been delayed due to environmental concerns, or have installed radar to shut down farms as necessary during peak migration times to prevent bird deaths.

Globally, bird strike concerns have slowed the growth of wind farms as measures are being taken to protect the avian population. In 2009, wind farm development was suspended at five of Japan’s 13 proposed sites and five site plans were delayed or changed due to reports of endangered birds living or nesting around the wind farms (Source: LRAD Corp.’s *Safe, Cost-Effective Wildlife Preservation and Control Solutions for Airports, Alternative Energy Installations, and Mining Operations*, February 2010).

Currently, wind farm owners attempt to decrease bird deaths using methods similar to those deployed at tailing ponds (e.g., shotgun sounds), which can become ineffective over time. As illustrated in Figure 22, LRAD Corp. has combined its systems with avian radar technology to deter birds, waterfowl, bats, and other wildlife from entering wind farms. By preventing the birds from entering wind farms, the Company estimates that its systems can save renewable energy companies millions of dollars in losses annually on equipment damage caused by wildlife. Beyond wildlife protection, LRAD® systems can also be used to secure the perimeter of a wind farm by deterring intruders.

Figure 22
LRAD Corp.

DEPLOYING LRAD® SYSTEMS ON WIND FARMS FOR BIRD DETERRENCE



Source: LRAD Corp.

LRAD Corp.'s systems have demonstrated their potential during testing at wind farms. The Company anticipates that its devices may significantly reduce bird deaths due to wind turbines, which may reduce environmental concerns and related delays for many wind farms. To maximize efficacy, LRAD® systems could be placed on top of each turbine and broadcast omni-directionally.

Airports and Runways

Wildlife that approaches airports and runways can also cause significant damage. During the five years between 2006 and 2010, the Federal Aviation Administration estimates an average of 26 wildlife strikes were reported on both civil and U.S. Air Force aircraft each day. Airplanes and jets are most vulnerable to bird strikes during takeoff and landing (demonstrated in Table 7), as the remainder of the flight is typically spent at altitudes above where birds fly. Nevertheless, the highest risk is during takeoff, as the aircraft is low to the ground, has a large fuel load, and is at a critical angle of attack (Source: *Airport Bird Hazard Risk Assessment Process*, July 19, 2007). Moreover, proximity to water, bird flyways, and quieter airplane engines are also factors that can increase the risk of dangerous bird strikes (Source: *Discovery News*, January 16, 2009).

Table 7
REPORTED PHASE OF FLIGHT AT TIME OF WILDLIFE STRIKE (CIVIL AIRCRAFT, U.S.), 1990-2009

Phase of Flight	Birds		Bats	
	20-year total	% of total known	20-year total	% of total known
Parked	42	<1	N/A	N/A
Taxi	258	<1	N/A	N/A
Take-off Run	13,313	19	4	4
Climb	12,579	18	10	11
En Route	1,674	2	3	3
Descent	2,615	4	5	5
Approach	27,605	40	59	64
Landing Roll	11,690	17	11	12
Total Known	69,776	100	92	100
Unknown	26,850		275	
Total Strikes	96,626		367	

Source: the Federal Aviation Administration's "Wildlife Strikes to Civil Aircraft in the United States, 1990-2009."

In addition to the death of the animal, there can be significant equipment damage and, occasionally, even the death of crew or passengers aboard a plane struck by birds. From 1990 to 2009, bird strikes resulted in nearly 425,000 hours of aircraft downtime and roughly \$375 million in monetary losses (Source: the FAA's *Wildlife Strikes to Civil Aircraft in the U.S. 1990-2009*, May 2011). In 2009, an airplane with 155 passengers had to perform an emergency landing on the Hudson River after a bird strike. In September 2011, a bird was sucked into the engine of a B-757 jet landing at Denver International Airport, which cost an estimated \$4.5 million to repair and resulted in 21 days out of service. Similarly, in October 2011, the engine of a B-737 jet airliner was hit by a gull as the plane approached the Sitka Rocky Gutierrez Airport in Alaska and cost roughly \$1 million to repair (Source: the FAA Wildlife Strike Database's *Some Significant Wildlife Strikes to Civil Aircraft in the United States, January 1990 – December 2011* report, January 11, 2012). Moreover, in 2009, the U.S. Air Force reported that it spends approximately \$35 million annually to repair aircraft damage caused by bird strikes.

As the majority of bird strikes occur during takeoff or landing, there are techniques that can be implemented by airports to minimize the risk of an incident. When combined with avian radar, LRAD® systems can effectively detect, deter, and prevent avian activity near common airport flight paths for takeoff and landing. The LRAD® products can be operated manually or remotely controlled from a command and control center. The Company has performed several successful trials at airports and is working toward the environmental and regulatory approvals

necessary to install its systems at airports with significant bird strike issues. To date, a few international airports and an international U.S. Air Force base have deployed LRAD® to prevent potentially catastrophic aircraft bird strikes.

Vineyard/Agricultural Protection

Each year, vineyards can lose thousands of dollars of grapes due to bird foraging (Source: *Discovery News*, November 7, 2011). British Columbia's Ministry of Agriculture, Food and Fisheries estimated that birds eat up to 10% of the wine grape crop annually. Traditionally, wine growers have used shotguns, propane cannons, and other loud noises to scare birds away. However, these techniques seem to offer only a temporary relief and can disturb neighbors. As well, some wineries have covered the grapes with netting, although this strategy can be both time consuming and costly (Source: NPR, September 12, 2009).

LRAD® systems are a cost-effective means to reduce annual losses due to wildlife-related crop and equipment damage caused by birds and other animals on vineyards and other agricultural sites. Moreover, by keeping these birds out of restricted areas, these systems may also be able to prevent bird deaths at the hands of farmers and winemakers seeking to protect their crops through any means necessary.

Competition

The commercial and government AHD markets can be competitive, characterized by a number of manufacturers that compete both for commercial customers as well as for government contracts. Products within this market vary on price, quality, and distribution. While many of the LRAD Corp.'s potential competitors may have access to greater resources for product development than the Company, LRAD Corp. believes that it has been able to compete thus far, and will continue to compete, based on the originality of its technology and designs, its ability to meet customers' needs, and the quality and ruggedness of its products even in harsh environments.

The selection of competitors presented below is not intended to be an exhaustive collection of LRAD Corp.'s possible competition. It is however believed to be representative of the technologies and suppliers that the Company may encounter as it seeks to increase its share of the market for acoustic hailing and warning products supplied to both military and commercial customers.

IMLCORP, LLC

www.imlcorp.com

Georgia-based IMLCORP manufactures mass notification and rescue systems for use in the U.S. and internationally. The company is an approved U.S. General Services Administration (GSA) supplier to the U.S. government. Its product portfolio includes the SoundCommander® line of rugged, high-power loudspeaker systems for tactical and mass notifications. These systems are used by U.S. and allied military; homeland security; police, fire, and emergency management; rescue services; university campuses; public venues; and industrial users. As well, many SoundCommander® products have NATO stock numbers. IMLCORP produces SoundCommander® products that range from lightweight portable to long-range AHD, vehicle-mounted, and wide-area deployable systems. Directed and wide-area coverage cover maximum distances from 750 meters up to 2,000 meters. The company provides a number of other products as well, including an alert, warning, and message delivery system integrated with Windows® software; a tool with 30,000 lbs of force to quickly breach locks, gates, bars, doors, and other objects in emergency and tactical situations; rescue ropes for rappelling; and wheel immobilizers for parking enforcement.

IMLCORP was established in 1991. The company is owned by U.S. veterans, and the majority of its products are designed and manufactured at IMLCORP's production facility in Marietta, Georgia. Dealers and distributors for IMLCORP's SoundCommander® line operate in over 25 countries.

Ultra Electronics USSI

www.ultra-ussi.com

Ultra Electronics USSI is a wholly owned subsidiary of UK-based Ultra Electronics Holdings, plc (ULE-LON). The parent company has acquired several global businesses with aerospace and defense specializations. Ultra Electronics (UK) has over 50 years of experience in designing and manufacturing advanced technology products, particularly industrial and military equipment.

The Indiana-based USSI subsidiary develops and produces advanced electronics, electro-mechanical, and hydro-acoustic sensors, including sonar, surveillance, and signal processing systems. The company's products are used by military agencies and homeland security as well as for commercial applications. USSI's acoustic capabilities have been demonstrated through the HyperSpike HS-60, an AHD that the company reports has been recognized by Guinness World Records as the loudest AHD worldwide. It measured 140.2 dB at a range of 128 meters in testing. USSI produces a line of HyperSpike acoustic hailing and mass notification products ("HyperSpike Sound Cannons"), which are designed for the following purposes: military security, crowd and riot control, maritime security, airports and runways, hostage negotiations, convoy operations, perimeter control, search and rescue, and law enforcement.

Additionally, one of USSI's primary platforms is its underwater products unit, enabling the sale of **sonobuoys** for global Anti-Submarine Warfare (ASW) platforms. The company has delivered over five million sonobuoys and is an approved supplier to the U.S. government, military, and various international clients. USSI also offers communications equipment through its Audio Product division for nuclear, biological, and chemical operations, law enforcement, counter-terrorism, and firefighting.

Power Sonix, Inc.

www.powersonix.com

Formed in 1997, Power Sonix produces equipment for lightweight, high-power, intelligible speech projection on air, land, and sea. It has provided loudspeaker systems to U.S. armed forces, foreign governments, and law enforcement agencies, among others. Products are intended for use in a variety of applications, such as homeland defense, emergency first response, military operations, weather alerts, crowd control, criminal/suspect apprehension, drug interdiction, search and rescue, airport bird scare, base and facility broadcast, and coastal tsunami alert. Power Sonix has developed an AHD called AHD1200, which has two variations: AHD1200S (a tilt model for helicopter installations) and AHD1200T (a pan and tilt model for vehicle and naval installations). The AHD1200S can be mounted to a Black Hawk helicopter among others. Even with the noise of a large, twin-engine helicopter, Power Sonix reports that its sound technology projects enough clear sound to be an effective public address system. To this extent, in March 2010, the California Emergency Management Agency (CEMA) performed a Live Code Tsunami Warning Communications Test that used television and radio announcements, sirens, and reverse 911 calls, as well as a Power Sonix PSAIR12 on a fixed-wing aircraft, to communicate the public warning message. For 52% of survey respondents in the test area, the PSAIR12 was the primary means of notification, indicating that it outperformed the basic systems in place for warning residents of a tsunami.

Power Sonix, which is headquartered in West Virginia, also designs custom audio systems to meet clients' specific requirements for aircraft, vehicle, ship, fixed installation, or unmanned units. The company works as a subcontractor to military integrators worldwide.

Video Masters, Inc. (VMI)

www.vmi.com

Over the past 20 years, Kansas City, Missouri-based VMI has provided portable broadcast systems used for a range of government, transportation, communication, and custom purposes. VMI's loudspeaker systems include broad AHDs, direct AHDs, and a wireless control module. The company has a line of tactical loudspeakers that can be portable, vehicle-mounted, aerial, or deployable. As well, VMI's "Giant Voice" products entail fixed site security wireless loudspeaker systems, more than 50 of which have been supplied to the Middle East for base communications when power is unavailable. The Giant Voice system is stated to be able to operate for up to two weeks without an external power supply. Its range is two to three miles. VMI further supplies FM mobile broadcast products (portable AM/FM/TV mini-stations) for air and ground applications as well as lightweight loudspeakers for homeland security use. The lightweight loudspeakers are suited for small aircraft and vehicles, such as employed by local police, homeland security, and disaster relief agencies.

VMI reports on its website that more than 80% of its customers are repeat business. The company was founded by military veterans, and has produced broadcast systems for the U.S. military, NATO, and various other defense agencies and allied forces globally for three decades.

IPS Securex Pte Ltd.

www.ips-securex.com

IPS Securex is an integrated security solution company headquartered in Singapore. The company has offices across Asia, and has implemented many custom security systems throughout this region. Its line of general security products include access control equipment, AHDs, audio video intercom systems, car park systems, CCTV systems, intruder detection systems, mailroom security equipment, PA systems, panic duress systems, and video monitoring systems. The company also provides an array of homeland security products designed for border security, cargo, ports, and personnel, among other applications.

Among its AHD equipment, IPS Securex supplies the HyperSpike line of acoustic devices manufactured by Ultra Electronics USSI in the U.S. (as profiled on pages 39-40). In April 2011, IPS Securex announced that it distributed 30 HyperShields as part of a package of law enforcement equipment for a national police force in Southeast Asia. The HyperShield uses the HyperSpike technology built into a personal riot shield, which is both a lightweight, carbon fiber riot shield and a non-lethal form of acoustic deterrence. The HyperShield gives 140 dB of acoustic output to penetrate high noise environments and create a safety perimeter of 50 meters with clear commands, authoritative messages, and piercing alert tones. IPS Securex's AHDs further include mid- and long-range solutions, customizable units that have an acoustic footprint of over 1,500 meters, products optimized for remote locations, and micro AHDs for handheld use.

Key Points to Consider

- LRAD Corp. designs and develops novel products that allow customers to broadcast loud, crystal clear messages over long distances. The Long Range Acoustic Device® (LRAD®) platform uses proprietary sound reproduction technologies and acoustic materials to produce a directed, focused acoustic beam that can reach up to 3,000 meters for large vehicles/vessels or up to 8,900 meters in fixed infrastructure applications, even in high ambient noise environments.
 - Since 2003, LRAD® systems have been deployed by the U.S. Army, Navy, Marines, and Coast Guard, as well as on commercial vessels and through public safety organizations worldwide.
- The Company has broadened its products' application to include all branches of the military, public safety (e.g., law enforcement, government), commercial security, and wildlife and asset protection (e.g., wind farms, airports, tailing ponds), among other expanding markets globally. To date, LRAD® systems have been deployed in approximately 45 countries across North America, South America, Asia, Africa, Europe, and Australia.
- LRAD® technology enables military personnel to enforce standoff zones on land, in air, or at sea, potentially providing more time to assess and respond to threats. Moreover, the improved ability to communicate may minimize the need for non-lethal or lethal weaponry as a form of communication or scare tactic (such as a rifle shot over an approaching threat), which could otherwise increase tensions and lead to unnecessary deaths of soldiers and civilians.
- LRAD Corp. has identified military programs as its largest market opportunity worldwide due to the broad number of applications—navy, army, marines, coast guard, air force, and others—as well as the large budgets that have traditionally been allotted for military spending.
 - Recently, demand from the U.S. Navy has increased. Following extensive testing by the Navy, LRAD Corp. won a competitive bid in August 2010 for a multi-year, \$6.2 million order for integrated LRAD-RX® systems and services. Since then, the U.S. Navy has placed at least \$2.6 million in orders for LRAD® systems and support equipment.
 - While the Navy has been LRAD Corp.'s largest U.S. military customer to date, the Company considers the U.S. Army to be its largest opportunity within the nation's defense program. Whereas the Navy has fewer than 300 active ships, the Company estimates that the Army has nearly 20,000 land vehicles that could benefit from LRAD® technology.
- LRAD Corp. plans to pursue large, multi-year U.S. Army, international military, and commercial security orders independently and through partnerships with large defense contractors.
 - The Company has worked with military and defense contractor Kongsberg Gruppen ASA for several years to integrate a non-lethal communications package into Kongsberg's PROTECTOR Common Remotely Operated Weapon Station (CROWS). In 2007, Kongsberg won a competitive bid for a five-year, 6,500-system U.S. Army contract valued at \$1.3 billion.
 - In the near term, LRAD Corp. and Kongsberg are looking for a small initial order for LRAD® technology combined with Kongsberg's PROTECTOR system for field testing.
 - The companies also plan to pursue an upcoming U.S. military contract for the CROWS III program, which is valued at approximately \$970 million (roughly 3,000 units).
 - As well, in October 2011, the U.S. Army issued a public Request for Information (RFI) regarding 6,350 AHDs. LRAD Corp. is actively following this opportunity and is hopeful that the process could advance to the Request for Proposal (RFP) stage in 2012.
- LRAD® systems also have application in a number of public safety scenarios. In emergency situations, military, law enforcement, or security personnel can use ground-based or helicopter-mounted LRAD® systems to

quickly communicate warnings, instructions, and directions to large groups—even in areas where power and other forms of communication have been disrupted.

- In 2010, mass notification system sales exceeded \$1.2 billion in the U.S. The Company seeks to increase its market share in the mass notification market.
- LRAD® systems have been used by law enforcement to communicate to rioters and protesters in widely publicized events, such as the Pittsburgh G20 Summit and Occupy Wall Street protests.
- LRAD® products can also be deployed by cruise lines, unmanned oil and gas platforms, port security organizations, and personal vessels to help secure perimeters and protect infrastructure on land and at sea. LRAD® technology improves upon traditional passive surveillance systems by serving as a first responder and providing an effective means to communicate with potential threats in real time.
 - In 2011, there were 439 pirate attacks reported globally. LRAD® systems can help ward against an impending attack by taking a proactive approach at rapidly establishing an oncoming vessel's intent as well as a response plan. In 2005, the luxury cruise liner Seabourn Spirit used LRAD® to repel a pirate attack off the coast of Somalia.
- As well, LRAD Corp.'s products have a range of uses in wildlife and asset preservation, such as airports, air bases, harbors, wind and solar farms, tailing ponds, nuclear power plants, agricultural operations, fisheries, beaches, hazardous water/waste areas, and vineyards, among others.
 - LRAD® technology has shown to be highly effective in preserving both wildlife and critical assets. The Company reports that its devices have been installed in a several mining operation for over two years and have reduced bird deaths from thousands annually to less than 20 per year.
 - The Company plans to use successful trials and opening orders to further penetrate the wildlife and asset preservation market, particularly airports and alternative energy applications.
- LRAD® technology improves upon existing and competitive communication technologies in several key aspects: (1) it delivers higher quality voice broadcasts over long ranges; (2) it provides critical information in real time; (3) it can be deployed during power outages; and (4) it has not been shown to cause illness. Moreover, the Company's devices improve upon conventional wildlife avoidance techniques, such as shotgun blasts and propane cannons, by providing a targeted, immediate response that uses a collection of predatory calls (versus a repetitive shotgun blast) to prevent wildlife from approaching.
- LRAD® systems are also cost-efficient. The device can lower customers' costs by increasing security coverage, operational efficiency, and response capabilities while reducing the necessary manpower.
- LRAD Corp.'s management and engineering teams combine technology, operations, manufacturing, and marketing expertise with acoustic engineering experience, and have demonstrated an ability to not only market the Company's products but also to create and develop markets for the LRAD® technology.
- LRAD Corp. continually upgrades and enhances its technology and product offerings to ensure its portfolio remains competitive in the AHD sector—a key element of its intellectual property strategy. In FY 2011, the Company enhanced its product line by releasing its most powerful device to date—the LRAD 2000X™—as well as launching wireless capability, starting with the LRAD 100X™.
- As of December 31, 2011, LRAD Corp. had over \$13.8 million in cash and cash equivalents. In fiscal 2011, the Company achieved its second year of profitability as well as record revenues for the fourth straight fiscal year. In FY 2011, LRAD Corp. reported roughly \$26.5 million in revenues.
 - In FY 2011, the Company expanded its international business by 254%, which includes the delivery of a \$12.1 million order to a foreign government—LRAD Corp.'s largest single order to date—combined with a seven-year service and maintenance agreement for \$5.5 million scheduled to begin in April 2012.

Historical Financial Results

Tables 8, 9, and 10 provide a summary of LRAD Corp.'s recent historical financial statements: its consolidated Statements of Operations, Balance Sheets, and Statements of Cash Flows for the first quarter fiscal 2012 ended December 31, 2011. Previously, in fiscal 2011 (ended September 30, 2011), the Company reported record revenues for the fourth straight fiscal year and its second consecutive year of profitability supported by double-digit LRAD® systems and services sales growth.

Table 8

LRAD Corp.

CONSOLIDATED STATEMENTS OF OPERATIONS (UNAUDITED)

	Three months ended December 31,	
	2011	2010
Revenues:		
Product sales	\$ 3,545,053	\$ 2,137,990
Contract and other	66,582	67,399
Total revenues	3,611,635	2,205,389
Cost of revenues	1,863,041	1,213,013
Gross profit	1,748,594	992,376
Operating expenses:		
Selling, general, and administrative	1,056,559	1,053,727
Research and development	381,318	379,220
Total operating expenses	1,437,877	1,432,947
Income (loss) from operations	310,717	(440,571)
Other income	12,944	3,684
Income (loss) from continuing operations before income taxes	323,661	(436,887)
Income tax expense	9,715	—
Income from continuing operations	313,946	(436,887)
Income from discontinued operations, net of tax	—	81,520
Net income (loss)	\$ 313,946	\$ (355,367)
Net income (loss) per Common Share - basic and diluted:		
Continuing operations	\$ 0.01	\$ (0.01)
Discontinued operations	\$ —	\$ —
Total net income (loss) per Common Share - basic and diluted	\$ 0.01	\$ (0.01)
Weighted average Common Shares outstanding:		
Basic	32,374,499	30,633,109
Diluted	33,061,520	30,633,109

Source: LRAD Corp.

Table 9
LRAD Corp.
CONSOLIDATED BALANCE SHEETS

	December 31, 2011 (Unaudited)	September 30, 2011
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 13,845,377	\$ 13,870,762
Restricted cash	606,250	606,250
Accounts receivable	2,739,844	5,098,148
Inventories, net	2,946,092	2,735,520
Prepaid expenses and other	556,151	663,601
Assets of discontinued operations	—	6,250
Total current assets	20,693,714	22,980,531
Property and equipment, net	63,961	75,468
Intangible assets, net	207,928	225,969
Prepaid expenses - noncurrent	1,203,235	1,218,750
Total assets	\$ 22,168,838	\$ 24,500,718
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 596,321	\$ 1,040,202
Accrued liabilities	539,570	2,899,211
Liabilities of discontinued operations	—	9,263
Total current liabilities	1,135,891	3,948,676
Other liabilities - noncurrent	304,417	276,744
Total liabilities	1,440,308	4,225,420
Commitments and contingencies		
Stockholders' equity:		
Preferred Stock, \$0.00001 par value; 5,000,000 shares authorized; none issued and outstanding	—	—
Common Stock, \$0.00001 par value; 50,000,000 shares authorized; 32,374,499 shares issued and outstanding each period	324	324
Additional paid-in capital	85,812,846	85,673,560
Accumulated deficit	(65,084,640)	(65,398,586)
Total stockholders' equity	20,728,530	20,275,298
Total liabilities and stockholders' equity	\$ 22,168,838	\$ 24,500,718

Source: LRAD Corp.

Table 10
LRAD Corp.
CONSOLIDATED STATEMENTS OF CASH FLOWS (UNAUDITED)

	For the three months ended December 31,	
	2011	2010
Operating Activities:		
Net income (loss)	\$ 313,946	\$ (355,367)
Less: Net income from discontinued operations	—	81,520
Income (loss) from continuing operations	313,946	(436,887)
Adjustments to reconcile net income to net cash provided by operating activities of continuing operations:		
Depreciation and amortization	22,776	48,304
Provision for doubtful accounts	—	56,000
Warranty provision	64,310	(14,947)
Inventory obsolescence	162,602	(38,743)
Share-based compensation	139,286	113,303
Loss on impairment of patents	10,616	1,748
Changes in operating assets and liabilities:		
Restricted cash	—	(3,031,250)
Accounts receivable	2,358,304	2,204,760
Inventories	(373,174)	(2,968,193)
Prepaid expenses and other	107,450	(10,978)
Prepaid expenses - noncurrent	15,515	—
Accounts payable	(443,881)	1,268,445
Warranty settlements	(13,095)	(15,838)
Accrued liabilities	(2,383,183)	822,846
Net cash used in operating activities of continuing operations	(18,528)	(2,001,430)
Net cash used in (provided by) operating activities of discontinued operations	(3,013)	100,718
Net cash used in operating activities	(21,541)	(1,900,712)
Investing Activities:		
Purchase of equipment	(3,617)	(6,958)
Patent costs paid	(227)	(55)
Net cash used in investing activities	(3,844)	(7,013)
Financing Activities:		
Proceeds from exercise of Stock Options	—	94,841
Net cash provided by financing activities	—	94,841
Net decrease in cash and cash equivalents	(25,385)	(1,812,884)
Cash and cash equivalents, beginning of period	13,870,762	5,421,167
Cash and cash equivalents, end of period	\$ 13,845,377	\$ 3,608,283
Supplemental Disclosure of Cash Flow Information		
Cash paid for taxes	\$ 50,000	\$ 108,000

Source: LRAD Corp.

Risks

Some of the information in this Executive Informational Overview® (EIO) relates to future events or future business and financial performance. Such statements can only be predictions and the actual events or results may differ from those discussed due to the risks described in LRAD Corp.'s statements on Forms 10-K, 10-Q, 8-K, as well as other forms filed from time to time. The content of this report with respect to LRAD Corp. has been compiled primarily from information available to the public released by the Company through news releases, Annual Reports, and U.S. Securities and Exchange Commission (SEC) filings. LRAD Corp. is solely responsible for the accuracy of this information. Information as to other companies has been prepared from publicly available information and has not been independently verified by LRAD Corp. Certain summaries of activities have been condensed to aid the reader in gaining a general understanding. For more complete information about LRAD Corp., please refer to the Company's website at www.lradx.com.

Investors should carefully consider the risks and information about LRAD Corp.'s business described below. Investors should not interpret the order in which these considerations are presented as an indication of their relative importance. The risks and uncertainties described below are not the only risks that the Company faces. Additional risks and uncertainties not presently known to LRAD Corp. or that the Company currently believes to be immaterial may also adversely affect its business. If any of the following risks and uncertainties develops into actual events, the business, financial condition, and results of operations could be materially and adversely affected, and the trading price of the Company's shares could decline.

LRAD Corp. has a history of net losses and may not be able to sustain profitability.

The Company has had a history of operating losses, primarily attributable to the design, development, and launch of the HSS product, which was spun-off to Parametric Sound Corp. on September 27, 2010. In fiscal 2010, LRAD Corp. achieved profitability for the first time in its history and, while the Company was able to maintain profitability in fiscal 2011, its ability to maintain future profitability is dependent on a variety of factors, many of which are outside of LRAD Corp.'s control. At September 30, 2011, the Company had an accumulated deficit of \$65,398,586. LRAD Corp. must continue to generate sufficient revenue to be profitable in future periods. Failure to sustain profitability may require the Company to raise additional funding, which could have a material negative impact on the market value of LRAD Corp.'s Common Stock.

The Company may need additional capital for growth.

LRAD Corp. may need additional capital to support its growth. While the Company expects to generate these funds from operations, it may not be able to do so. The following principal factors could affect the availability of LRAD Corp.'s internally generated funds:

- failure of sales from government, military, and commercial markets to meet planned projections;
- government spending levels impacting the sale of its products;
- working capital requirements to support business growth;
- the Company's ability to control spending;
- introduction of competing technologies;
- product mix and effect on margins; and
- acceptance of LRAD Corp.'s present and future products in existing and new markets.

Should the Company require additional funds, general market conditions or the then-current market price of LRAD Corp.'s Common Stock may not support capital raising transactions, and any such financing may require advance approval of the Company's stockholders under the rules of the NASDAQ Stock Market. LRAD Corp.'s ability to obtain financing may be further constrained by the current economic conditions. The recent credit crisis and other related trends affecting the capital markets have caused significant reductions in capital availability. Many lenders and institutional investors have ceased funding even the most credit-worthy entities. In addition, LRAD Corp. may be required to reduce costs, including the scaling back of research and development into new products, which could have a negative impact on the Company's ability to compete and to innovate. If LRAD Corp. raises additional funds by selling additional shares of its Capital Stock or securities convertible into or exercisable for Common Stock (assuming the Company is able to obtain additional financing), the ownership interest of LRAD Corp.'s stockholders will be diluted, which could have a material negative impact on the market value of the Company's Common Stock.

Two customers accounted for 46% and 12% of LRAD Corp.'s total revenues, respectively, for FY 2011. The Company expects to continue to be dependent on a limited number of customers.

Two customers accounted for 46% and 12% of total revenues, respectively, for FY 2011, and one customer accounted for 41% of total revenues for FY 2010. Historically, LRAD Corp.'s revenues have been dependent upon a limited number of customers. The Company does not have long-term agreements with these or other significant customers, and its customers have the right to cease doing business with LRAD Corp. at any time. No assurance can be given that these or other customers will continue to do business with the Company or that they will maintain their historical levels of business. If LRAD Corp.'s relationship with any material customer were to cease, then the Company's revenues would decline and negatively impact results of operations. Any such decline could result in LRAD Corp. increasing its accumulated deficit and a need to raise additional capital to fund operations. If the Company's expectations regarding future sales are inaccurate, LRAD Corp. may be unable to reduce costs in a timely manner to adjust for sales shortfalls.

Disruption and fluctuations in financial and currency markets could have a negative effect on LRAD Corp.

Financial markets in the U.S., Europe, and Asia have been experiencing extreme disruption in recent years, including, among other things, extreme volatility in security prices, severely diminished liquidity and credit availability, rating downgrades of certain investments, and declining valuations of others. Governments have taken unprecedented actions intended to address extreme market conditions that include severely restricted credit and declines in real estate values. While currently these conditions have not impaired LRAD Corp.'s ability to operate, there can be no assurance that there will not be a further deterioration in financial markets and confidence in major economies, which can then lead to challenges in the Company's operation of its business. These economic developments affect businesses, such as LRAD Corp., in a number of ways. The tightening of credit in financial markets adversely affects the ability of commercial customers to finance purchases and operations and could result in a decrease in orders and spending for the Company's products as well as create supplier disruptions. Economic developments could also reduce future government spending on LRAD Corp.'s products. The Company is unable to predict the likely duration and severity of the current disruption in financial markets and adverse economic conditions, and the effects they will have on LRAD Corp.'s business and financial condition.

The Company purchases a number of key components and subassemblies from foreign suppliers. Consequently, LRAD Corp. is subject to the impact economic conditions can have on such suppliers and to fluctuations in foreign currency exchange rates. Increases in the Company's cost of purchasing these items could negatively impact LRAD Corp.'s financial results if the Company is unable to pass these increased costs on to its customers.

LRAD Corp. has current government contracts and its future growth is dependent, in large part, on continued sales to U.S. and international governments and businesses that sell to governments.

In FY 2011, direct and indirect sales to the U.S. government accounted for approximately 23% of the Company's total net sales, versus 54% of total net sales in FY 2010. In addition, sales to international governments have increased in recent years, including a \$17.6 million product and multi-year maintenance order, of which \$12.1 million in product was delivered in March 2011. Changes in defense spending could have an adverse effect on LRAD Corp.'s current and future revenues. Sales of the Company's products to U.S. government agencies and organizations is subject to the overall U.S. government budget and congressional appropriation decisions and

processes, which are driven by numerous factors, including geo-political events and macroeconomic conditions, and are beyond LRAD Corp.'s control. Recently mandated cuts in U.S. Department of Defense (DoD) budgets and potential future changes in political leadership could affect future DoD military initiatives and homeland security spending. Similar issues apply to sales to international governments. LRAD Corp. cannot be assured that the military's interest in communication devices to minimize unnecessary force will continue or will provide future growth opportunities for the Company's business.

LRAD Corp. must expand its customer base in order to grow its business.

To grow the Company's business, LRAD Corp. must fulfill orders from its existing customers, obtain additional orders from existing customers, develop relationships with new customers, and obtain and fulfill orders from new customers. The Company cannot guarantee that it will be able to increase its customer base. Further, even if LRAD Corp. does obtain new customers, the Company cannot guarantee that those customers will purchase enough quantities of LRAD Corp.'s products or at product prices that will enable the Company to recover its costs in acquiring those customers and fulfilling those orders. Whether LRAD Corp. will be able to sell more of its products will depend on the following factors:

- the Company's ability to manufacture reliable products that have the features required by customers;
- the global economy;
- LRAD Corp.'s ability to expand relationships with existing customers and to develop relationships with new customers that will lead to additional product orders;
- the Company's ability to develop and expand new markets for directed sound products; and
- LRAD Corp.'s ability to develop international product distribution directly or through strategic partners.

Revenue growth is dependent on continued acceptance of LRAD® products by government, military, and developing force protection and emergency response agencies. If these agencies do not purchase LRAD® products, the Company's revenues will be adversely affected.

Although LRAD® products are designed for use by both government and commercial customers, the products have, to date, been predominantly sold for government use. While the Company's total government sales have been increasing, LRAD Corp.'s products have not yet been widely accepted in the large government and military market that includes many prospective customers. Furthermore, the force protection and emergency response market is itself an emerging market that is changing rapidly. If LRAD® products are not widely accepted by the government, military, and the developing force protection and emergency response markets, the Company may not be able to identify other markets and may fail to achieve its sales goals.

Perceptions that long-range hailing devices are unsafe or may be used in an abusive manner may negatively affect sales of LRAD products, which could cause the Company's revenues to decline.

Potential customers for LRAD® products, including government, military, and force protection and emergency response agencies, may be influenced by claims or perceptions that long-range hailing devices are unsafe or may be used in an abusive manner. These claims or perceptions, while unsubstantiated, could reduce LRAD Corp.'s product sales.

A significant portion of the Company's revenue is derived from its core product category.

LRAD Corp. is dependent on its core product category to generate revenues. No assurance can be given that these or other products will continue to have market acceptance or that they will maintain their historical levels of sales. The loss or reduction of sales of this product could have a material adverse effect on the Company's business, results of operations, financial condition, and liquidity.

LRAD Corp. may incur significant and unpredictable warranty costs.

The Company's products are substantially different from proven, mass produced sound transducer designs and are often employed in harsh environments. LRAD Corp. may incur substantial and unpredictable warranty costs from post-production product or component failures. The Company generally warrants its products to be free from defects in materials and workmanship for a period up to one year from the date of purchase. At September 30, 2011, LRAD Corp. had a warranty reserve of \$272,261. While the Company's warranty experience with the LRAD® product line has been very favorable, as more complexity is built into the product and as LRAD Corp. expands its supplier base, issues may arise that affect future warranty costs, which could adversely affect the Company's financial position, results of operations, and business prospects.

LRAD Corp. could incur additional charges for excess and obsolete inventory.

While the Company strives to effectively manage its inventory due to rapidly changing technology and uneven customer demand, product cycles tend to be short and the value of LRAD Corp.'s inventory may be adversely affected by changes in technology that affect the Company's ability to sell the products in its inventory. If LRAD Corp. does not effectively forecast and manage inventory, the Company may need to write off inventory as excess or obsolete, which in turn can adversely affect cost of sales and gross profit.

LRAD Corp. has previously experienced, and may in the future experience, reductions in sales of older-generation products as customers delay or defer purchases in anticipation of new product introductions. The Company currently has established reserves for slow-moving or obsolete inventory of \$307,096. The reserves that LRAD Corp. has established for potential losses due to obsolete inventory may, however, prove to be inadequate and may give rise to additional charges for obsolete or excess inventory.

The Company does not have the ability to accurately predict future operating results. LRAD Corp.'s quarterly and annual revenues are likely to fluctuate significantly due to many factors, any of which could result in failure to achieve revenue expectations.

The Company expects that its proprietary directed acoustic products and technologies will be the source of substantially all of its revenues for at least the near future. Revenues from these products and technologies are expected to vary significantly due to a number of factors, many of which are beyond LRAD Corp.'s control. Any one or more of the factors listed below or other factors could cause the Company to fail to achieve its revenue expectations:

- LRAD Corp.'s ability to develop and supply sound reproduction components to customers, distributors, or original equipment manufacturers (OEMs) or to license its technologies;
- market acceptance of and changes in demand for the Company's products or products of its customers;
- gains or losses of significant customers, distributors, or strategic relationships;
- unpredictable volume and timing of customer orders;
- delays in funding approval by U.S. and foreign government and military customers;
- the availability, pricing, and timeliness of delivery of components for LRAD Corp.'s products and OEM products;
- fluctuations in the availability of manufacturing capacity or manufacturing yields and related manufacturing costs;
- the timing of new technological advances, product announcements, or introductions by LRAD Corp., OEMs, licensees, or competitors;

- production delays by customers, distributors, OEMs, or by the Company or its suppliers;
- increased competition:
- the conditions of other industries, such as military and commercial industries, into which LRAD Corp.'s technologies may be sold;
- general electronics industry conditions, including changes in demand and associated effects on inventory and inventory practices;
- general economic conditions that could affect the timing of customer orders and capital spending and result in order cancellations or rescheduling; and
- general political conditions in the U.S. and in various other parts of the world that could affect spending for the products that LRAD Corp. offers.

Some or all of these factors could adversely affect demand for the Company's products or technologies, and therefore adversely affect LRAD Corp.'s future operating results.

Most of the Company's operating expenses are relatively fixed in the short term. LRAD Corp. may be unable to rapidly adjust spending to compensate for any unexpected sales shortfalls, which could harm the Company's quarterly operating results. LRAD Corp. cannot predict future operating results with any certainty.

Many potential competitors have greater resources and experience than LRAD Corp. and may develop products and technologies that make the Company's obsolete.

Technological competition from other longer established electronic and loudspeaker manufacturers is expected to increase. Most of the companies with which LRAD Corp. expects to compete have substantially greater capital resources, research and development staffs, marketing and distribution programs, and facilities, and many of them have substantially greater experience in the production and marketing of products. In addition, one or more of LRAD Corp.'s competitors may have developed or may succeed in developing technologies and products that are more effective than the Company's, rendering LRAD Corp.'s technology and products obsolete or noncompetitive.

The Company's competitive position will be seriously damaged if LRAD Corp. cannot protect intellectual property rights in its technology.

The Company relies on a combination of contracts and trademark, patent, and trade secret laws to establish and protect the proprietary rights in its technology. However, LRAD Corp. may not be able to prevent misappropriation of its intellectual property, and competitors may be able to independently develop competing technologies, or the agreements the Company enters into may not be enforceable. LRAD Corp.'s success, in part, depends on the Company's ability to obtain and enforce intellectual property protection for its technology. A competitor may independently develop or patent technologies that are substantially equivalent to, or superior to, LRAD Corp.'s technology. If this happens, the Company's competitive position could be significantly harmed.

As LRAD Corp. expands its product line or develops new uses for its products, these products or uses may be outside the protection provided by the Company's current patent applications and other intellectual property rights. In addition, if LRAD Corp. develops new products or enhancements to existing products, the Company cannot assure investors that it will be able to obtain patents to protect them. Even if LRAD Corp. does receive patents for its existing or new products, these patents may not provide meaningful protection. In some countries outside of the U.S. where the Company's products can be sold or licensed, patent protection is not available. Moreover, some countries that do allow registration of patents do not provide meaningful redress for violations of patents. As a result, protecting intellectual property in these countries is difficult and LRAD Corp.'s competitors may successfully sell products in those countries that have functions and features that infringe on its intellectual property.

LRAD Corp. may initiate claims or litigation against third parties in the future for infringement of the Company's proprietary rights or to determine the scope and validity of its proprietary rights or the proprietary rights of competitors. These claims could result in costly litigation and divert the efforts of LRAD Corp.'s technical and management personnel. As a result, the Company's operating results and financial condition could be harmed.

LRAD Corp. may face personal injury and other liability claims that harm the Company's reputation and adversely affect its operating results and financial condition.

While the product has been engineered to reduce the risk of damage to human hearing or human health, LRAD Corp. could be exposed to claims of hearing damage if the product is not properly operated. A person injured in connection with the use of LRAD Corp.'s products may bring legal action against the Company to recover damages on the basis of theories, including personal injury, negligent design, dangerous product, or inadequate warning. LRAD Corp. may also be subject to lawsuits involving allegations of misuse of its products. The Company's product liability insurance coverage may be insufficient to pay all such claims. Product liability insurance may also become too costly for LRAD Corp. or may become unavailable for the Company in the future. LRAD Corp. may not have sufficient resources to satisfy any product liability claims not covered by insurance, which could materially and adversely affect the Company's operating results and financial condition. Significant litigation could also result in negative publicity and a diversion of management's attention and resources.

LRAD Corp.'s international operations could be harmed by factors, including political instability, natural disasters, fluctuations in currency exchange rates, and changes in regulations that govern international transactions.

The Company sells its products worldwide. The following risks inherent in international trade may reduce LRAD Corp.'s international sales and harm its business and its customers' and suppliers' businesses:

- changes in tariff regulations;
- political instability, war, terrorism, and other political risks;
- foreign currency exchange rate fluctuations;
- establishing and maintaining relationships with local distributors and dealers;
- lengthy shipping times and accounts receivable payment cycles;
- import and export control and licensing requirements;
- compliance with a variety of U.S. laws, including the Foreign Corrupt Practices Act, by LRAD Corp. or key subcontractors;
- compliance with a variety of foreign laws and regulations, including unexpected changes in taxation and regulatory requirements;
- greater difficulty in safeguarding intellectual property than in the U.S.; and
- difficulty in staffing and managing geographically diverse operations.

These and other risks may preclude or curtail international sales or increase the relative price of the Company's products versus those manufactured in other countries, in turn reducing the demand for LRAD Corp.'s products. Failure to comply with U.S. and foreign governmental laws and regulations applicable to international business, such as the Foreign Corrupt Practices Act or U.S. export control regulations, could adversely impact the Company's business with U.S. and foreign governments.

Current environmental laws or laws enacted in the future may harm LRAD Corp.'s business.

The Company's operations are subject to environmental regulation in areas in which it conducts business. LRAD Corp.'s product design and procurement operations must comply with new and future requirements relating to the materials composition of its products, including restrictions on lead, cadmium, and other substances. The Company does not expect that the impact of these environmental laws and other similar legislation adopted in the U.S. and other countries will have a substantial unfavorable impact on its business. However, the costs and timing of costs under environmental laws are difficult to predict.

Errors or defects contained in LRAD Corp.'s products, failure to comply with applicable safety standards, or a product recall could result in delayed shipments or rejection of the Company's products, damage to its reputation, and exposure to regulatory or other legal action.

Any defects or errors in the operation of LRAD Corp.'s products may result in delays in their introduction. In addition, errors or defects may be uncovered after commercial shipments have begun, which could result in the rejection of the Company's products by customers, damage to its reputation, lost sales, diverted development resources, and increased customer service and support costs and warranty claims, any of which could harm LRAD Corp.'s business. Third parties could sustain injuries from the Company's products, and LRAD Corp. may be subject to claims or lawsuits resulting from such injuries. There is a risk that these claims or liabilities may exceed or fall outside the scope of the Company's insurance coverage. LRAD Corp. may also be unable to obtain adequate liability insurance in the future. Because LRAD Corp. is a small company, a product recall would be particularly harmful because the Company has limited financial and administrative resources to effectively manage a product recall and it would detract management's attention from implementing core business strategies. A significant product defect or product recall could materially and adversely affect LRAD Corp.'s brand image, causing a decline in sales, and potentially reducing or depleting the Company's financial resources.

LRAD Corp. relies on outside manufacturers and suppliers to provide a large number of components and sub-assemblies incorporated in the Company's products.

LRAD Corp.'s products have a large number of components and sub-assemblies produced by outside suppliers. In addition, for certain of these items, the Company qualifies only a single source, which can magnify the risk of shortages and decrease its ability to negotiate with suppliers on the basis of price. If shortages occur, or if LRAD Corp. experiences quality problems with suppliers, then the Company's production schedules could be significantly delayed or costs significantly increased, which would have a material adverse effect on LRAD Corp.'s business, liquidity, results of operation, and financial position.

Although the Company assembles its products internally, LRAD Corp. has some subassemblies and components produced by third-party manufacturers. The Company may be required to outsource manufacturing if sales of its products increase significantly. LRAD Corp. may be unable to obtain acceptable manufacturing sources on a timely basis. In addition, from time to time, the Company may change manufacturers and any new manufacturer engaged by LRAD Corp. may not perform as expected. An extended interruption in the supply of the Company's products could result in a substantial loss of sales. Furthermore, any actual or perceived degradation of product quality as a result of LRAD Corp.'s reliance on third-party manufacturers may have an adverse effect on sales or result in increased warranty costs, product returns, and buybacks. Failure to maintain quality manufacturing could reduce future revenues, adversely affecting LRAD Corp.'s financial condition and results of operations.

The Company derives revenue from government contracts and subcontracts, which are often non-standard, may involve competitive bidding, may be subject to cancellation with or without penalty, and may produce volatility in earnings and revenue.

LRAD Corp.'s sales to government customers have involved and are expected in the future to involve providing products and services under contracts or subcontracts with U.S. federal, state, local, and foreign government agencies. Obtaining contracts and subcontracts from government agencies is challenging, and contracts often include provisions and elements that are not standard in private commercial transactions, including those listed on page 54.

- May include provisions that allow the government agency to terminate the contract without penalty under some circumstances
- Could be subject to purchasing decisions of agencies that are subject to political influence
- May contain onerous procurement procedures
- Could become subject to cancellation if government funding becomes unavailable

Securing government contracts can be a protracted process involving competitive bidding. In many cases, unsuccessful bidders may challenge contract awards, which can lead to increased costs, delays, and possible loss of the contract for the winning bidder.

LRAD Corp.'s success is dependent on the performance of its executive team and the cooperation, performance, and retention of executive officers and key employees.

The Company's business and operations are substantially dependent on the performance of the current executive team, including LRAD Corp.'s president and chief executive officer, Mr. Thomas Brown, and its chief financial officer, Ms. Katherine McDermott. The Company does not maintain "key person" life insurance on any of its executive officers. The loss of one or several key employees could seriously harm LRAD Corp.'s business. The Company is also dependent on its ability to retain and motivate high quality personnel, especially sales and marketing executives and skilled technical personnel. Competition for such personnel is intense, and LRAD Corp. may not be able to attract, assimilate, or retain other highly qualified managerial, sales, and technical personnel in the future. The inability to attract and retain the necessary personnel could cause the Company's business, operating results, or financial condition to suffer.

LRAD Corp. may not address successfully the problems encountered in connection with any potential future acquisitions.

The Company expects to continue to consider opportunities to acquire or make investments in other technologies, products, and businesses that could enhance LRAD Corp.'s capabilities, complement its current products, or expand the breadth of its markets or customer base. The Company has little experience in acquiring other businesses and technologies. Potential and completed acquisitions and strategic investments involve numerous risks. If LRAD Corp. fails to properly evaluate and execute acquisitions and strategic investments, the Company's management team may be distracted from its day-to-day operations, its business may be disrupted, and its operating results may suffer. In addition, if LRAD Corp. finances acquisitions by issuing equity or convertible debt securities, the Company's stock value could be diluted.

LRAD Corp.'s disclosure controls and procedures may not prevent or detect all acts of fraud.

The Company's disclosure controls and procedures are designed to reasonably assure that information required to be disclosed in reports filed or submitted under the Securities Exchange Act is accumulated and communicated to management and is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms. LRAD Corp.'s management expects that its disclosure controls and procedures and internal controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, they cannot provide absolute assurance that all control issues and instances of fraud, if any, within LRAD Corp. have been prevented or detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by an unauthorized override of the controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and LRAD Corp. cannot assure that any design will succeed in achieving its stated goals under all potential future conditions. Accordingly, because of the inherent limitations in a cost effective control system, misstatements due to error or fraud may occur and not be detected.

Failure to maintain an effective system of internal control over financial reporting could harm stockholder and business confidence in LRAD Corp.'s financial reporting, its ability to obtain financing, and other aspects of the business.

Maintaining an effective system of internal control over financial reporting is necessary for LRAD Corp. to provide reliable financial reports. Section 404 of the Sarbanes-Oxley Act of 2002 and the related rules and regulations promulgated by the SEC require the Company to include in its Form 10-K a report by management and an opinion from LRAD Corp.'s independent registered public accounting firm regarding the effectiveness of the Company's internal control over financial reporting. While LRAD Corp.'s management and its independent registered public accounting firm concluded that the Company's internal control over financial reporting was effective as of September 30, 2011, it is possible that material weaknesses will be identified in the future. In addition, components of LRAD Corp.'s internal control over financial reporting may require improvement from time to time. If management is unable to assert that the Company's internal control over financial reporting is effective in any future period, or if LRAD Corp.'s independent registered public accounting firm is unable to express an unqualified opinion on the effectiveness of those internal controls, investors may lose confidence in the accuracy and completeness of the Company's financial reports, which could have an adverse effect on LRAD Corp.'s stock price.

Evolving regulation of corporate governance and public disclosure may result in additional expenses and continuing uncertainty.

Changing laws, regulations, and standards relating to corporate governance and public disclosure, including the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd Frank Act"), XBRL interactive SEC filings, new SEC regulations, and NASDAQ Stock Market rules, are creating uncertainty for public companies and, often, increased costs to comply. LRAD Corp. continually evaluates and monitors developments with respect to new and proposed rules and cannot predict or estimate the amount of the additional costs that it may incur or the timing of such costs. These new or changed laws, regulations, and standards are subject to varying interpretations, in many cases due to their lack of specificity and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

LRAD Corp. is committed to maintaining high standards of corporate governance and public disclosure. If the Company's efforts to comply with new or changed laws, regulations, and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against LRAD Corp. and the Company may be harmed.

The Company's Common Stock could be delisted from the NASDAQ Stock Market.

NASDAQ's continued listing standards for LRAD Corp.'s Common Stock require the following: (1) that the Company maintains a closing bid price of at least \$1.00 for its Common Stock; and (2) that LRAD Corp. maintains stockholders' equity of \$2.5 million, market value of listed securities of \$35 million, or net income from continuing operations of \$500,000 in the most recently completed fiscal year or in two of the last three most recently completed fiscal years. In October 2008, LRAD Corp. was notified by NASDAQ that the Company failed to meet the listing standards by failing to maintain a bid price of \$1.00. However, on April 22, 2009, LRAD Corp. received notice from NASDAQ that the Company had become compliant by meeting the bid price requirement. LRAD Corp.'s stock briefly dropped below \$1.00 late in its 2010 fiscal year. Future failures to satisfy any continued listing requirements could lead to the receipt of a deficiency notice from NASDAQ and ultimately to a delisting from trading of the Company's Common Stock. If LRAD Corp.'s Common Stock were delisted from NASDAQ, among other things, this could result in a number of negative implications, including reduced liquidity in the Company's Common Stock as a result of the loss of market efficiencies associated with NASDAQ and the loss of federal preemption of state securities laws as well as the potential loss of confidence by suppliers, customers, and employees, the loss of analyst coverage and institutional investor interest, fewer business development opportunities, greater difficulty in obtaining financing, and breaches of certain contractual obligations.

Sales of Common Stock issuable on the exercise of outstanding Options and Warrants may depress the price of LRAD Corp.'s Common Stock.

As of September 30, 2011, the Company had outstanding Options granted to its employees, directors, and consultants to purchase 4,181,339 shares of LRAD Corp.'s Common Stock, and had outstanding Warrants issued to investors to purchase 1,627,945 shares of its Common Stock. At September 30, 2011, the exercise prices for the Options and Common Stock Warrants ranged from \$0.46 to \$4.81 per share. The issuance of shares of Common Stock upon the exercise of outstanding Options or Warrants could cause substantial dilution to holders of Common Stock, and the sale of those shares in the market could cause the market price of its Common Stock to decline. The potential dilution from these shares could negatively affect the terms on which LRAD Corp. could obtain equity financing.

The Company may issue Preferred Stock in the future, and the terms of the Preferred Stock may reduce the value of investors' Common Stock.

LRAD Corp. is authorized to issue up to 5,000,000 shares of Preferred Stock in one or more series. The Company's Board of Directors may determine the terms of future Preferred Stock offerings without further action by stockholders. If LRAD Corp. issues additional Preferred Stock, it could affect the rights or reduce the value of the Company's Common Stock. In particular, specific rights granted to future holders of Preferred Stock could be used to restrict LRAD Corp.'s ability to merge with or sell its assets to a third party. These terms may include voting rights, preferences as to dividends and liquidation, conversion and redemption rights, and sinking fund provisions.

LRAD Corp.'s stock price is volatile and may continue to be volatile in the future.

The market price of the Company's Common Stock has fluctuated significantly to date. In the future, the market price of LRAD Corp.'s Common Stock could be subject to significant fluctuations due to general market conditions and in response to quarter-to-quarter variations in the following:

- the Company's anticipated or actual operating results;
- developments concerning LRAD Corp.'s sound reproduction technologies;
- technological innovations or setbacks by the Company or its competitors;
- announcements of merger or acquisition transactions;
- changes in personnel within LRAD Corp.; and
- other events or factors and general economic and market conditions.

The stock market in recent years has experienced extreme price and volume fluctuations that have affected the market price of many technology companies, and that have often been unrelated or disproportionate to the operating performance of companies.

Recent Events

02/07/2012—LRAD Corp. announced financial results for the first quarter fiscal 2012 (ended December 31, 2011).

12/08/2011—Announced that it received an LRAD-RX® systems order from Fort Worth, Texas, as part of a perimeter security upgrade to one of the city's critical infrastructure facilities. The Company also announced an opening order from the Middle East for anti-piracy oil tanker installations and a follow-on order from Thailand's Department of Disaster Response. The three orders totaled over \$600,000.

12/05/2011—Released FY 2011 financial results. Notably, LRAD Corp. reported record revenues of \$26.5 million and record net income of \$0.15 per diluted share for the FY ended September 30, 2011.

11/17/2011—Announced that it received a \$960,000 follow-on order for additional LRAD® systems at an international mining site.

10/27/2011—Announced that Thailand's Department of Disaster Response ordered LRAD 100X™ and LRAD 500X™ systems to support flood relief efforts after three months of heavy rain.

09/29/2011—Announced that it received a \$200,000+ LRAD-RX® systems order from the U.S. Air Force for long-range communication and perimeter security at the test and firing range on one of its installations.

09/27/2011—Announced over \$1.1 million in follow-on LRAD® orders from the U.S. Navy. The orders consisted primarily of LRAD-RX® and LRAD 1000X™ systems and support equipment.

09/22/2011—Announced that the Company was awarded a \$500,000+ LRAD 300X™ systems order for deployment on foreign armored national police vehicles.

08/23/2011—Announced that it received an LRAD-RX® systems order to remotely secure multiple unmanned offshore oil platforms and to protect divers working on the oil rigs from fishing trawlers that penetrate the extended security zones around the platforms. Further details of the order are confidential by request of the customer.

08/17/2011—Announced approximately \$1.5 million in new LRAD® orders from the U.S. Navy. The orders consisted primarily of LRAD 1000X™ systems and support equipment.

07/14/2011—Announced that an LRAD 1000X™ system mounted on a UH-60 Blackhawk helicopter was deployed by the Colombian Air Force recently in their "Audacity and Will" campaign. The main component of the campaign was the use of the LRAD 1000X™ to communicate demobilization messages to guerrillas hidden in Colombia's rain forests.

06/30/2011—Announced that it received a new \$500,000+ order for multiple LRAD® systems at an international mining site.

06/29/2011—Announced that it received an opening \$293,000 LRAD® systems order for LRAD 100X™ and 500X™ systems from Israel's Ministry of Defense.

06/03/2011—Announced that the Company learned that LRAD® systems were deployed to assist in mass communication and search and rescue operations in the aftermath of the massive earthquake and tsunami that struck Japan in March 2011.

02/17/2011—Announced that it received over \$800,000 in new LRAD® systems and services orders from the U.S. Navy.

02/08/2011—Announced that it received over \$4.3 million through the exercise of 1,627,945 Warrants priced at \$2.67 per share that were scheduled to expire February 6, 2011. In consideration of the Warrant holders exercising their Warrants above the current market price of the Company's Common Stock, LRAD Corp. issued to the exercising Warrant holders new Warrants to purchase up to 1,627,945 shares of its Common Stock at an exercise price of \$2.67 per share (exercisable from August 4, 2011, through February 4, 2016). For more information on the Warrant exercise and new Warrant issuance, please see the Company's Form 8-K filed with the U.S. Securities and Exchange Commission (SEC) on February 8, 2011.

Appendix

Table 11 entails a collection of LRAD Corp.'s publicly announced orders during 2011 (with the most recent orders listed first).

Table 11
LRAD Corp.
LRAD® SYSTEMS ORDERS AND CONTRACTS IN 2011

Date	Customer	Product(s)	Purpose	Contract Value
12/08/2011	Fort Worth, Texas	LRAD-RX®	Perimeter security	
	Middle East Oil Tanker Installations	N/A	Anti-piracy	>\$600,000
	Thailand's Department of Disaster Response	N/A	Disaster response	
11/17/2011	An International Mining Site	N/A	Wildlife preservation	\$960,000
10/27/2011	Thailand's Department of Disaster Response	LRAD 100X™ LRAD 500X™	Disaster response	N/A
09/29/2011	U.S. Air Force	LRAD-RX®	Long-range communication and perimeter security	>\$200,000
09/27/2011	U.S. Navy	LRAD-RX® LRAD 1000X™	Long-range communication and perimeter security	>\$1.1 million
09/22/2011	Foreign National Police	LRAD 300X™	Deployment on police vehicles	>\$500,000
08/23/2011	Undisclosed	LRAD-RX®	Remotely secure offshore oil platforms	N/A
06/30/2011	An International Mining Site	N/A	Wildlife preservation	>\$500,000
06/29/2011	Israel's Ministry of Defense	LRAD 100X™ LRAD 500X™	N/A	\$293,000
02/17/2011	U.S. Navy	N/A	Long-range communication and perimeter security	\$800,000

Sources: LRAD Corp. and Crystal Research Associates, LLC.

Glossary

Acoustic Hailing Devices (AHD)—Purpose-built, directed loudspeakers designed to augment and enhance the process of using sound as a communications mechanism to get attention.

Beam Width—The angle of audio coverage provided by an acoustic hailing device (AHD). Larger width allows for broader coverage (e.g., addressing a crowd) whereas a narrow width is better for communicating to an individual or small group.

Bitumen—A black viscous mixture of hydrocarbons obtained naturally or as a residue from petroleum distillation.

Bullhorn—See “Megaphone.”

Emitter Head—A component of the device responsible for producing sound.

Force Multiplier—An attribute or a combination of attributes that make a given force more effective than that same force would be without it.

Hardened—Strengthened or protected against attack.

Hypersonic Sound (HSS)—Transmission of sound using cyclic sound pressure with a frequency greater than the upper limit of human hearing (ultrasound).

Infrasound—Sound produced below human hearing or 20 hertz (Hz).

Intelligibility—The degree to which an individual’s speech is understood by others.

Internet Protocol (IP)—The method by which data is sent from one computer to another on the Internet.

Laser Dazzlers—Lasers designed to impair a subject’s vision at long ranges.

Megaphones—Portable, cone-shaped horns used to amplify a person’s voice or other sounds in a targeted direction.

Naphthenic—A type of petroleum fluid derived from naphthene crude oil.

NATO Stock Numbers—Used by countries to identify items of supply in their defense inventory. Each NATO stock number is a 13-digit number.

Request for Information (RFI)—A standard business process designed to collect written information about the capabilities of various suppliers.

Sonobuoys—Buoys equipped to detect underwater sounds and transmit them by radio.

Tailing Ponds—Areas used to store the waste made from separating minerals from rocks, or the slurry produced from oil sands mining. This is designed to minimize fine tailings from being transported by wind into populated areas where the toxic chemicals could be hazardous to human health. However, it is also harmful as tailing ponds often attract wildlife, such as waterfowl or caribou, as they appear to be a natural pond, but they can be highly toxic. Tailings are sometimes mixed with other materials, such as bentonite, to form a thick slurry that slows the release of impacted water to the environment.

Trawlers—Boats that catch fish by pulling nets through the water.

U.S. General Services Administration (GSA)—A central management agency that sets federal policy for federal procurement and real property management and information resources management.

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Crystal Research

a s s o c i a t e s

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Legal Notes and Disclosures: This report has been prepared by LRAD Corp. (“the Company”) with the assistance of Crystal Research Associates, LLC (“CRA”) based upon information provided by the Company. CRA has not independently verified such information. In addition, CRA has been compensated in cash of forty thousand dollars for its services in creating this report, for updates, and for printing costs.

Some of the information in this report relates to future events or future business and financial performance. Such statements constitute forward-looking information within the meaning of the Private Securities Litigation Act of 1995. Such statements can be only predictions and the actual events or results may differ from those discussed due to, among other things, the risks described in LRAD Corp.’s reports on its 10-K, 10-Q, press releases, and other forms filed from time to time. The content of this report with respect to LRAD Corp. has been compiled primarily from information available to the public released by LRAD Corp. The Company is solely responsible for the accuracy of that information. Information as to other companies has been prepared from publicly available information and has not been independently verified by LRAD Corp. or CRA. Certain summaries of activities and outcomes have been condensed to aid the reader in gaining a general understanding. For more complete information about LRAD Corp., the reader is directed to the Company’s website at www.lradx.com. This report is published solely for information purposes and is not to be construed as an offer to sell or the solicitation of an offer to buy any security in any state. Past performance does not guarantee future performance. Additional information about LRAD Corp. and its public filings, as well as copies of this report, can be obtained in either a paper or electronic format by calling (858) 676-1112.