



POLICE DEPARTMENT  
LEGAL BUREAU  
FOIL UNIT, ROOM 140C  
ONE POLICE PLAZA  
NEW YORK, NY 10038

April 27, 2012

Ms. Katherine Bromberg  
New York Civil Liberties Union  
125 Broad Street  
New York, New York 10004

**RE: FREEDOM OF INFORMATION LAW  
REQUEST: #11PL107361**

Dear Ms. Bromberg:

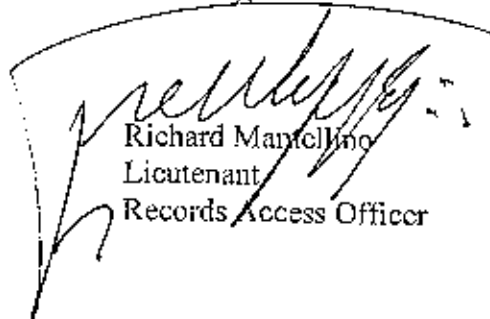
This letter is in further response to your letter dated December 21, 2011, wherein you requested copies of several categories of records that pertain to the NYPD's use of Long Range Acoustical Devices pursuant to the Freedom of Information Law, N.Y. Public Officers Law (POL) §§ 84 et seq. (FOIL).

Pursuant to a diligent search, 17 pages that are responsive to items 1 and 2 of your letter were found and will be mailed to you upon receipt of your payment in the amount of \$4.25, the statutory copying fee. In addition, 8 responsive pages are being withheld on the ground that they are preliminary internal materials that document non-routine law enforcement techniques and procedures pages and are exempt from disclosure under §§ 87(2)(c)(iv) and 87(2)(g).

A diligent search was conducted for records responsive to items 3 and 4 of the December 21, 2011, letter. However, the search failed to locate any records responsive to these requests.

You may appeal this decision or any portion thereof. Such an appeal must be made in writing, within 30 days of this letter, and must be forwarded to: Jonathan David, Records Access Appeals Officer, New York City Police Department, One Police Plaza, Room 1406, New York, NY 10038.

Sincerely,



Richard Mantelino  
Lieutenant  
Records Access Officer

COURTESY • PROFESSIONALISM • RESPECT



**LRAD**

Long Range Acoustic Device

- Home
- Products
- Industry
- Company
- Investors
- Contact

PUBLIC SAFETY / LAW ENFORCEMENT

PRODUCT OVERVIEW

LRAD-RX

LRAD 1000X

LRAD 1000

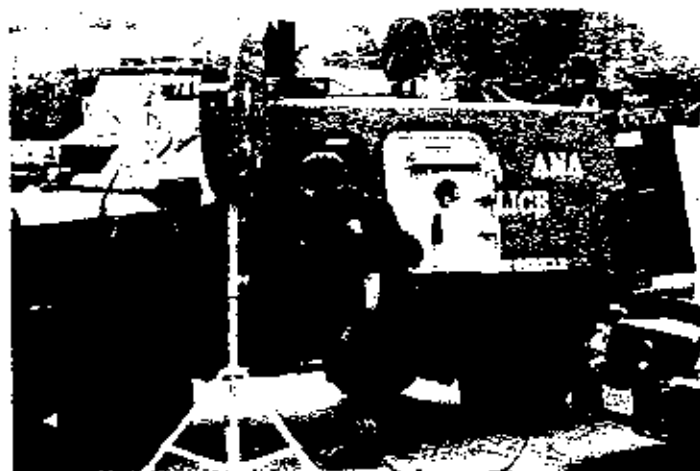
LRAD 500X

LRAD 300X

LRAD 100X

WHERE TO BUY

## Law Enforcement



### Santa Ana Police Department

The Santa Ana SWAT team used an LRAD to drive gang members from a house in their community. Their initial expectation was that three or four suspects were inside the house, but after employing an LRAD, 10 suspects emerged from the house without the use of lethal force or sending officers inside.

### Pittsburgh Police Department

The Pittsburgh Police Department used an LRAD to communicate with and disperse unruly crowds during the G20 Summit in Sept 2009.



### Related Links

- Alerts
- Public Safety
- Commercial Security
- Wildlife Protection

### News & Media

- Video Clips
- Industry News

- Request Demo
- Request a Quote

Nate Harper, the Pittsburgh police bureau chief, told reporters. "It served its purpose well."

Raymond DeMichiel, Pittsburgh's deputy director of emergency management and homeland security, said he thought the devices worked well without hurting anyone. "Every police officer I talked to thought it worked famously," said Mr. DeMichiel, who ordered the devices for Pittsburgh. "The bottom line is we could maintain order with the protesters without hurting them."

"It is designed to get people to do what police want. It makes them uncomfortable but does not hurt them," he said, noting that Pittsburgh police had been trained to use the devices properly.  
Source: *Washington Times*

#### **San Diego County Sheriff's Department**

San Diego County Sheriff's Department is using LRAD to clearly communicate at public events and in search and rescue operations in difficult terrain.

#### **New York Police Department**

The NYPD used an LRAD to control crowds during the Republican National Convention protests in 2004 and during New Year's Eve at Times Square.



#### **Boston Police Department**

The Boston PD deployed an LRAD in Kenmore Square during the 2005 Super Bowl celebration.



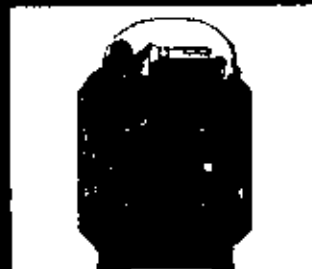
American Technology Corporation can provide assistance with preparation of grant requests for federal, state, or local agencies. Our directed acoustic solutions are widely recognized for their reliability, affordability,

and effectiveness.

Contact [American Technology Corporation](#) for more information.

[HOME](#) ; [PRODUCTS](#) ; [SITE MAP](#) ; [PRIVACY POLICY](#) ; [COPYRIGHT](#) ; [CONTACT](#)

# LRAD-X



# LRAD100X™

Maximum Continuous Output  
Beam Width  
Frequency Range  
Communications Range

136 dB SPL at 1 meter  
±7.15° at 2.5 kHz/3dB  
See frequency response curve below  
Highly intelligible speech transmissions over 300 meters; \*Max range of 250 meters over 118 dB of background noise.

## ENVIRONMENTAL PERFORMANCE

Hot Operating Temperature

MIL-STD-810G, Method 501.5, Procedure II, Design type Hot, 60°C

Cold Operating Temperature

MIL-STD-810G, Method 502.5, Procedure II, Design type Basic Cold, -33°C

Rain

MIL-STD-810G, Method 506.5, Procedure I, Blowing rain

Salt Fog

MIL-STD-810G, Method 509.5

Shipboard Vibration

MIL-STD-167-1A

Shipboard Shock

MIL-8-901D, Class 1, Shock grade B

Random Vibration

MIL-STD-810G, Method 514.6, Wheeled vehicles

SAS Shock

MIL-STD-810G, Method 516.6, Procedure I (Functional shock)

Hot Storage Temperature

MIL-STD-810G, Method 501.5, Procedure I, 70°C

Cold Storage Temperature

MIL-STD-810G, Method 502.5, Procedure I, -40°C

Operating Humidity

MIL-STD-810G, Method 507.5, Procedure II

- Aggravated Cycle

## Mechanical

Dimensions

14" W x 14" H x 6.5" D (35.6 x 35.6 x 16.5 cm)

Weight

15 lbs ( 6.8 kg) with battery, accessories and cables

Construction

Injection molded impact resistant plastic; 6061 Aluminum

## ELECTRICAL REQUIREMENTS

Power Consumption

Normal power consumption 50 Watts

Peak power consumption 76 Watts

Power Input

10.8 to 16.8 VDC; Included rechargeable 13.4VDC

Li-Fe-PO battery for up to 2 hours of continuous

operation at maximum volume on a full charge.

Adapters available for auto cigarette lighter and

for 2590 rechargeable military battery.

## SAFETY

MIL-STD-1474D

## COLORS

Black

Model No. LRAD-100X-BLK

Gray

Model No. LRAD-100X-GRY

\*16+ dB above background noise is based on field trials conducted by independent sources.

LRAD 100X POLAR PLOT  
2.5KHz, 5dB PER DIVISION

LRAD 100X Frequency Response

AmericanTechnology  
CORPORATION

15378 Avenue of Science, Suite 100 San Diego, CA 92128 USA

Tel: 858.676.1112 Fax: 858.676.1120 Email: Sales@atcsd.com

Web: www.atcsd.com

LAST MODIFIED: 11-17-01. SPECIFICATIONS ARE PRELIMINARY. SUBJECT TO CHANGE.

## PRODUCT SHEET

### SYSTEM COMPONENTS

LRAD 100X can be integrated with a variety of accessories for custom security solutions.



#### ▶ MULTIMEDIA

As the standard of ruggedness, LRAD 100X can be used in conjunction with the 100X interface and a variety of audio and video inputs.



#### ▶ MICROPHONE

The standard LRAD 100X microphone is a rugged, high-quality, wide-bandwidth microphone that can be used in conjunction with the LRAD 100X interface.



#### ▶ INTERFACE

The LRAD 100X interface is a rugged, high-quality, wide-bandwidth interface that can be used in conjunction with the LRAD 100X device.



### THE LRAD-X™ ADVANTAGE:

#### LOUD, LONG-RANGE COMMUNICATION

- ▶ CLEAR COMMUNICATION AT UP TO 600 METERS
- ▶ 136DB AT 1 METER MAXIMUM CONTINUOUS OUTPUT
- ▶ OVERCOME 88DB OF BACKGROUND NOISE AT 250 METERS
- ▶ REDUCES THE RISK OF EXPOSING NEARBY PERSONNEL TO EXCESSIVE AUDIO LEVELS

#### DIRECTIONAL SOUND

- ▶ 30 DEGREE PRIMARY BEAM
- ▶ COMMUNICATE WHERE YOU NEED TO
- ▶ AVOID DISTORTION FROM REFLECTED

#### EASY TO USE

- ▶ SIMPLE, FLEXIBLE CONTROL
- ▶ HANDHELD OR SILENT
- ▶ COMPACT AND LIGHTWEIGHT
- ▶ MICROPHONE

#### FLATPACK

### LOUD, UNMISTAKEABLE COMMUNICATION WITH LRAD 100X

LRAD 100X is a self contained, handheld, portable loud hailer that outperforms megaphones and most permanent public address systems. LRAD is an easily transportable communication tool that overcomes the background noise of vehicles, vessels, sirens, and boisterous crowds to ensure the message is clearly heard and understood.

LRAD 100X is 10-21 decibels (dB) louder than the most competitive megaphones. Systems of comparable size and power do not match the intensity of LRAD 100X, which is four to six times louder. Optimized driver and waveguide design ensures clear and loud voice communication so every syllable is understood. The warning tone provides a non-lethal deterrent, shapes behavior, and supports intent determination while preserving time for force escalation.

This unmatched acoustic performance comes in a rugged package that can be operated in driving rain. Interfaces include a standard microphone as well as a rugged media player designed for easy operation in demanding environments.

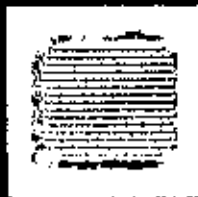
Maximum power in a small package - The LRAD 100X is the world's best solution for on-scene and tactical communications.

### SYSTEM COMPONENTS

LRAD 300X can be integrated with a variety of accessories for custom security solutions.



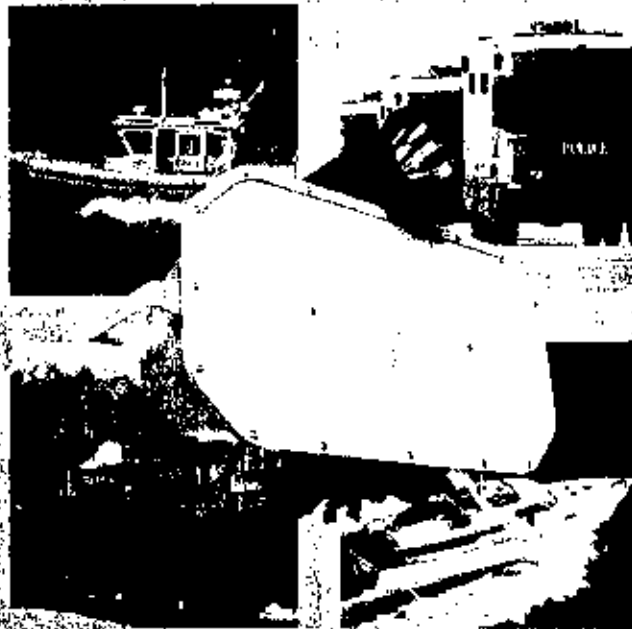
LRAD 300X can be integrated with a variety of accessories for custom security solutions.



LRAD 300X can be integrated with a variety of accessories for custom security solutions.



LRAD 300X can be integrated with a variety of accessories for custom security solutions.



### THE LRAD-X™ ADVANTAGE:

#### EXTENDED DIRECTIONALITY/OUTPUT

- DETERMINES THE INTENT OF A THREAT AT AN EXTENDED RANGE
- ASSESSES A THREAT SITUATION PRIOR TO INTERDICTION
- VARIABLE BEAM WIDTH FOR EXTENDED COVERAGE
- REDUCES THE RISK OF EXPOSING NEARBY PERSONNEL TO EXCESSIVE AUDIO LEVELS

#### EXTENDED FREQUENCY RANGE

- BROADCAST FULL VOICE SPECTRUM AT EXTENDED RANGES

#### COST EFFECTIVE SOLUTION

- INCREASED SECURITY COVERAGE
- REDUCED MANPOWER
- IMPROVED RESPONSE TIME
- IMPROVED COORDINATION

#### EASE OF USE

- RUGGEDIZED DESIGN
- LOW POWER CONSUMPTION
- TALL HEAT SINK

### STRONG, LOUD AND CLEAR WITH LRAD 300X

LRAD 300X is a compact, lightweight solution for use on small vessels, CROVs and vehicle mounted armor. It can be easily transported to provide security personnel long range communications and a highly effective hailing and warning capability where needed.

LRAD 300X produces highly intelligible voice transmissions over 88dB of background noise beyond 350 meters and beyond 1500 meters in a benign environment. LRAD 300X operators have the ability to issue clear, authoritative verbal commands, followed with powerful deterrent tones to enhance response capabilities. The extended frequency range of LRAD 300X ensures voice commands will be clearly understood.

# LRAD-X



# LRAD 300X

Maximum Continuous Output  
Beam Width  
Frequency Range  
Communications Range

142 dB SPL at 1 meter  
 $\pm 7.15^\circ$  at 1 kHz/3dB  
See frequency response curve below  
Highly intelligible speech transmissions over 1000 meters. \*Max range of 350 meters over 88 dB of background noise.

## OPERATIONAL PERFORMANCE

Hot Operating Temperature

MIL-STD-810G, Method 501.5, Procedure II, Design type Hot, 60°C

Cold Operating Temperature

MIL-STD-810G, Method 502.5, Procedure II, Design type Basic Cold, -33°C

Rain

MIL-STD-810G, Method 506.5, Procedure I, Blowing rain

Salt Fog

MIL-STD-810G, Method 509.5

Shipboard Vibration

MIL-STD-167-1A

Shipboard Shock

MIL-S-901D, Class I, Shock grade B

Random Vibration

MIL-STD-810G, Method 514.6, Wheeled vehicles

SRS Shock

MIL-STD-810G, Method 516.6, Procedure I (Functional shock)

Hot Storage Temperature

MIL-STD-810G, Method 501.5, Procedure I, 70°C

Cold Storage Temperature

MIL-STD-810G, Method 502.5, Procedure I, -40°C

Operating Humidity

MIL-STD-810G, Method 507.5, Procedure II - Aggravated Cycle

## MECHANICAL

Emitter Array Dimension

25" W x 14" H x 10" D

Emitter Array Weight

25 lbs without accessories

Construction

Molded low smoke composite 6061 Aluminum  
Stainless steel 316 Stainless hardware

## ELECTRICAL REQUIREMENTS

Power Consumption

Normal Power Consumption 100 Watts

Peak Power Consumption 150 Watts

Power Input

12-28VDC

## ENVIRONMENTAL

MIL-STD-1474D

## ELECTROMAGNETIC COMPATIBILITY (EMC)

FCC Part 15 class B radiated emissions

MIL-STD-461E, CE

## COLOURS

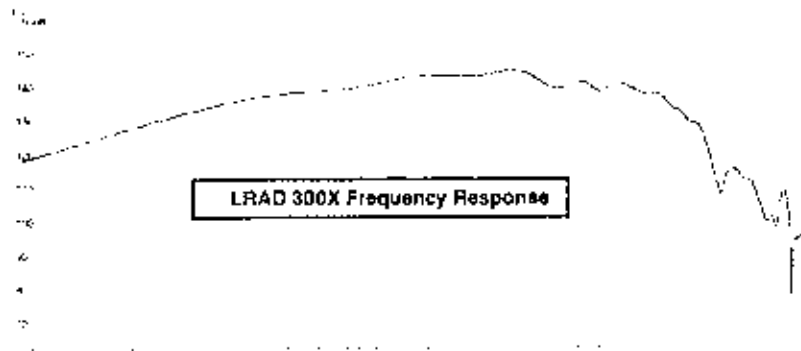
Gray

Catalog No. LRAD-300X-G-SYS

Tan

Catalog No. LRAD-300X-T-SYS

\*64 dB above background noise is based on field trials conducted by independent sources



**American Technology**  
CORPORATION

15378 Avenue of Science, Suite 100 San Diego, CA 92128 USA

Tel: 858.676.1112 Fax: 858.676.1120 Email: Sales@atcsd.com

Web: www.atcsd.com

LAST REVISION BY 2248-SP1 (03/02/05) ALL PRELIMINARY SUBJECT TO CHANGE



### SYSTEM COMPONENTS

LRAD 500X can be integrated with a variety of accessories for custom security solutions



#### MP3 PLAYER

At's hand-held, ruggedized MP3 player comes standard with LRAD 500X and is used to play pre-recorded messages and warning tones.



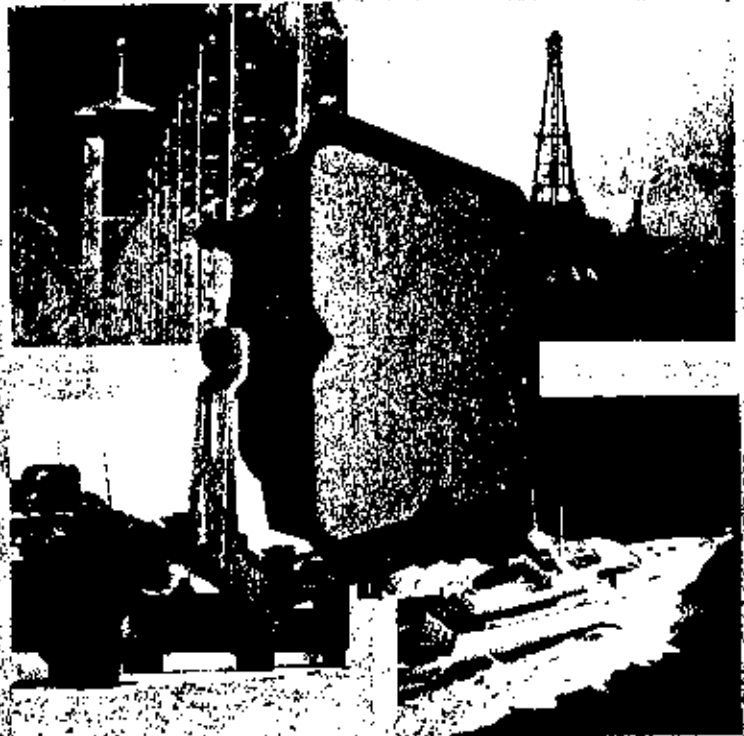
#### MICROPHONE

The Shure Model 733A Microphone is a hand-held dynamic microphone designed for command a team that requires highly intelligible, low noise output.



#### MAZE BEAM

The Maze Beam searchlight that works in full sun can be powered in a lightweight, hand-held unit using a high efficiency 75 watt Xenon short arc lamp with over 100 hours of life. This searchlight illuminates targets up to 1.5 miles away.



### THE LRAD-X™ ADVANTAGE:

#### EXTENDED DIRECTIONALITY/OUTPUT

- DETERMINES THE INTENT OF A THREAT AT AN EXTENDED RANGE
- ASSESSES A THREAT SITUATION PRIOR TO INTERDICTION
- VARIABLE BEAM WIDTH FOR EXTENDED COVERAGE
- REDUCES THE RISK OF EXPOSING NEARBY PERSONNEL TO EXCESSIVE AUDIO LEVELS

#### EXTENDED FREQUENCY RANGE

- BROADCAST FULL VOICE SPECTRUM AT EXTENDED RANGE

#### COST EFFECTIVE SOLUTION

- INCREASED SECURITY COVERAGE
- REDUCED MANPOWER
- IMPROVED RESPONSE TIME
- IMPROVED COORDINATION

#### EASIS OF USE

- RUGGEDIZED

### STRONG, LOUD AND CLEAR WITH LRAD 500X

LRAD 500X is lightweight and can be easily transported to provide security personnel long range communications and a highly effective hailing and warning capability where needed.

The superior voice intelligibility and clarity of LRAD 500X provides a highly directional audio beam that achieves maximum sound projection and penetration over distance (300 meters and beyond). LRAD 500X operators have the ability to issue clear, authoritative verbal commands, followed with powerful deterrent tones to enhance response capabilities. The extended frequency range of LRAD 500X ensures voice commands will be clearly understood.



American Technology Corporation

# LRAD 1000X™

PRODUCT SHEET

## SYSTEM COMPONENTS

LRAD 1000X can be integrated with a variety of accessories for custom security solutions.



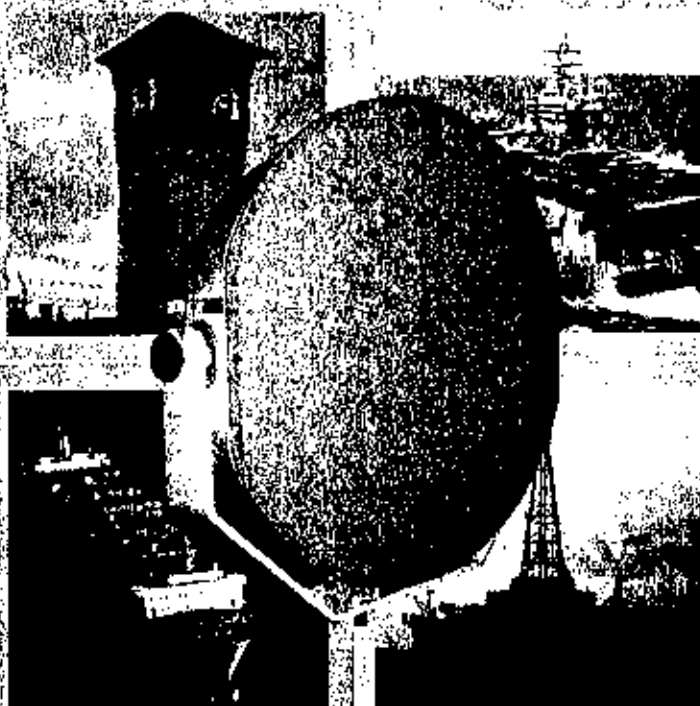
**Control Console**  
The LRAD 1000X control console is a rugged, portable unit that provides a variety of features for custom security solutions.



**Microphone**  
The LRAD 1000X microphone is a rugged, portable unit that provides a variety of features for custom security solutions.



**Speaker**  
The LRAD 1000X speaker is a rugged, portable unit that provides a variety of features for custom security solutions.



## THE LRAD-X ADVANTAGE:

### EXTENDED DIRECTIONALITY/OUTPUT

- DETERMINES THE INTENT OF A THREAT AT AN EXTENDED RANGE
- ASSESSES A THREAT SITUATION PRIOR TO INTERDICTION
- REDUCES THE RISK OF EXPOSING NEARBY PERSONNEL TO EXCESSIVE AUDIO LEVELS

### EXTENDED FREQUENCY RANGE

- BROADCAST FULL VOICE SPECTRUM AT EXTENDED RANGES

### COST EFFECTIVE SOLUTION

- INCREASED SECURITY COVERAGE
- REDUCED MANPOWER
- IMPROVED RESPONSE TIME
- IMPROVED COORDINATION

### EASE OF USE

- RUGGEDIZED DESIGN
- LOW POWER CONSUMPTION
- ALL WEATHER OPERATION
- LIGHT WEIGHT
- PORTABLE

## STRONG, LOUD AND CLEAR WITH LRAD 1000X

LRAD 1000X can be manually operated to provide long distance hailing and warning with highly intelligible communication.

The superior voice intelligibility and clarity of LRAD 1000X provides a directional audio beam that can communicate with high intelligibility over 88 dB of background noise beyond 1250 meters and capable of communicating over 3000 meters away in a benign environment. LRAD-X™ operators have the ability to issue clear, authoritative verbal commands, followed with powerful deterrent tones to enhance response capabilities. The extended frequency range of the LRAD-X ensures voice commands will be clearly understood.

# LRAD-X



# LRAD 1000X™

Maximum Continuous Output  
Beam Width  
Frequency Range  
Communications Range

152 dB SPL at 1 meter  
7-15° @ 10 kHz/3dB  
See frequency response curve below  
Highly intelligible speech transmissions over 3000 meters. \*Max range of 1250 meters over 88 dB of background noise.

ENVIRONMENTAL PERFORMANCE  
Hot Operating Temperature

MIL-STD-810G, Method 501.5, Procedure II, Design type Hot, 60°C

Cold Operating Temperature

MIL-STD-810G, Method 502.5, Procedure II, Design type Basic Cold, -33°C

Rain

MIL-STD-810G, Method 506.5, Procedure I, Blowing rain

Salt Fog  
Shipboard Vibration  
Shipboard Shock  
Random Vibration  
SRS Shock

MIL-STD-810G, Method 509.5

MIL-STD-167-1A

MIL-S-901D, Class I, Shock grade B

MIL-STD-810G, Method 514.6, Wheeled vehicles

MIL-STD-810G, Method 618.8, Procedure I (Functional shock)

MIL-STD-810G, Method 601.5, Procedure I, 70°C

MIL-STD-810G, Method 502.5, Procedure I, -40°C

MIL-STD-810G, Method 507.5, Procedure II

- Aggravated Cycle

MATERIALS  
Construction

Molded low smoke composite; 6061 Aluminum  
Stainless steel 316 Stainless hardware

Emitter Array Weight  
Emitter Array Dimension  
Electronics Module Dimension  
Electronics Housing

85 lbs without accessories

36" W x 40" H x 13" D

21 2" x 18" x 8.3"

Watertight molded case

ELECTRICAL REQUIREMENTS  
Power Consumption

Normal power consumption 300 watts

Peak power consumption 900 watts

Power Input

100 - 240VAC

VARIETY

MIL-STD-14740

ELECTROMAGNETIC COMPATIBILITY (EMC)

FCC Part 18 class A radiated and conducted emissions; MIL-STD-461ECE

COLORS

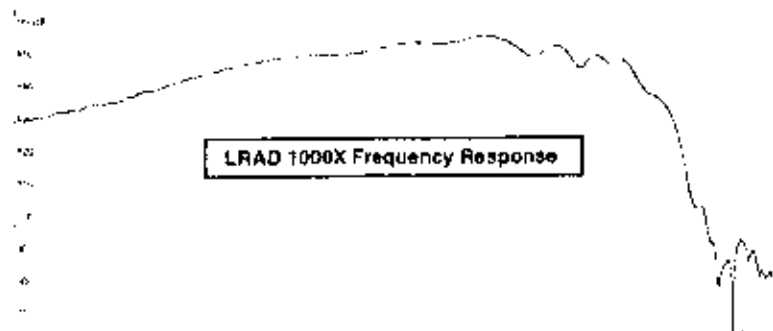
White

Gray

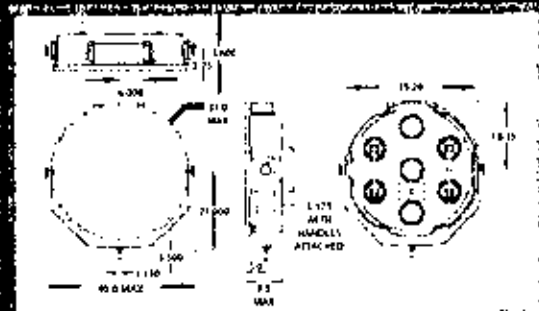
Catalog No. LRAD-1000X-W-SYS

Catalog No. LRAD-1000X-G-SYS

\*88 dB above background noise is based on field trials conducted by independent sources



LRAD 1000X Frequency Response



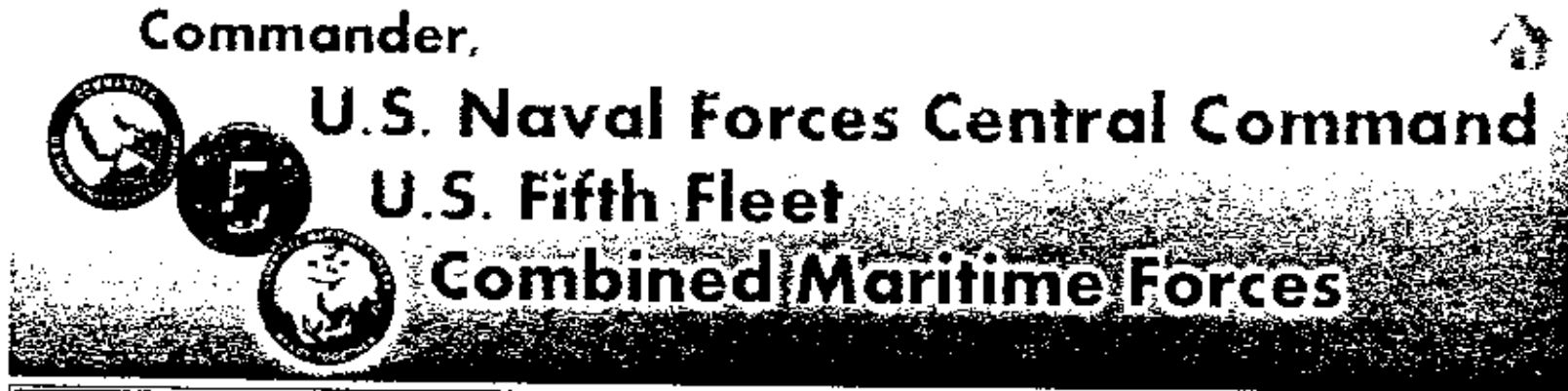
American Technology Corporation

15378 Avenue of Science, Suite 100 San Diego, CA 92128 USA

Tel: 858.676.1112 Fax: 858.676.1120 Email: Sales@atcsd.com

Web: www.atcsd.com

LAST MODIFIED 09-22-09 SPECIFICATIONS ARE PRELIMINARY SUBJECT TO CHANGE



Command Leadership News CMF

November 18, 2009

SHARE

FOR IMMEDIATE RELEASE

Release #195-09

## **M/V Maersk-Alabama Repels Suspected Pirate Attack**

By Mass Communication Specialist 2nd Class Nathan Schaeffer

MANAMA, Bahrain - Motor Vessel (M/V) Maersk-Alabama came under attack from suspected pirates today at 6:30 a.m. local time while transiting 560 nautical miles off the northeast coast of Somalia.

Four suspected pirates in a skiff came within 300 yards of M/V Maersk-Alabama and used small arms weapons in an attempt to board the ship.

The security team embarked aboard Maersk-Alabama responded to the attack by using evasive maneuvers, Long-Range Acoustic Devices (LRADs) and small arms fire, causing the suspected pirates to break off their attack.

"Due to Maersk Alabama following maritime industry's best-practices such as embarking security teams, the ship was able to prevent being successfully attacked by pirates," said Vice Adm. Bill Gortney, commander, U.S. Naval Forces Central Command. "This is a great example of how merchant mariners can take pro-active action to prevent being attacked and why we recommend that ships follow industry best practices if they're in high-risk areas."

No injuries or damage were reported aboard M/V Maersk-Alabama.

M/V Maersk-Alabama is proceeding to the ship's initial destination of Mombasa, Kenya.

Suspected Somali pirates briefly seized M/V Maersk-Alabama off the coast of Somalia on April 8 and held the ship's skipper, Capt. Richard Phillips, hostage for five days on a skiff. U.S. naval forces rescued Phillips on April 12, killing three suspected pirates and taking one into custody.

### **Tag:**

- **NAVCENT**
- **Maritime Security Operation**
- **Fifth Fleet**



Enter Search Terms

Search

View of stories for date

SPECIAL REPORTS

- [IRA: up or down?](#)
- [Davy Crockett](#)
- [F. Scott Fitzgerald](#)
- [Crash in Pittsburgh](#)
- [How does Pitt rank?](#)

All Special Reports

MULTIMEDIA

All Multimedia

THE BLOGS

All Blogs

NEWS

- City & Region
- Regional
- Westmoreland
- Fayette
- State
- Election
- Nation
- World
- Columnists
- Most Read Articles
- Education
- Lottery
- Science News
- Road Work
- Middle East Reports
- Photo Galleries
- All Stories

SPORTS

BUSINESS

OPINION &

Larger text Smaller text

SHARE

# Pittsburgh police play it safe when using Long Range Acoustic Device

By **Jeremy Boren**  
TRIBUNE-REVIEW  
Friday, October 9, 2009

Buzz up!

Pittsburgh police stuck to the lowest volume setting on a long-range hailing system they used to order protesters to disperse during the Group of 20 summit in Pittsburgh, SWAT team officers said during a demonstration of the device Thursday.

Known as the Long Range Acoustic Device, or LRAD, police officers turned the highly focused loudspeaker on a group of reporters and television cameras gathered in the police headquarters parking lot for a demonstration.

"There's some misnomers in the media right now that this device here is somehow a sonic cannon, intended to hurt people," said SWAT Officer Steve Mescan, a city police officer for 15 years.

"It's actually a speaker that delivers an intended message to an intended group of people to disperse an area," he said.

The LRAD has three volume levels: green, yellow and red. Mescan said police have been trained to not increase the volume beyond the safe, green level.

### Photo Gallery

click to enlarge



Justin Lapaglia and Jeff Garis

Jeremie Golobard / Tribune Review

### About the writer

*Jeremy Boren is a Pittsburgh Tribune-Review staff writer and can be reached at 412-765-2312 or via e-mail.*

### Tools

- Print this article
- E-mail this article
- Larger text
- Smaller text

Most Read Most E-mailed Latest News

1. Sestak puts blame on Democratic leaders for slipping support
2. Man questioned in attempted robbery; injured teller stable
3. KDKA's Yvonne Zanos had 'wonderful life'
4. Pittsburgh firefighter, two others arrested in South Side break-in
5. LeNature's Bankruptcy trustee says \$500M looting enabled by law firm, partner
6. Moon's Atlas Energy Resources fined \$25K for environmental violations
7. Drunken passenger causes Pittsburgh-Paris flight to stop in Newfoundland
8. Aliquippa police look for suspects in man's shooting
9. One of Allegheny County's 'most wanted' arrested
10. Mt. Pleasant's Lucia enters 25th year in mayor's office

**COMMENTARY**

**A & E**

**LIFESTYLES**

**OBITUARIES**

**STAFF BLOGS**

**ABOUT US**

Help Desk

Mobile Edition

Contact Us

Frank L. Craig,  
Editor

Robert Fryer,  
Managing Editor

Steve Adams,  
Multimedia Editor

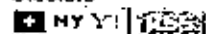
Newspapers in  
Education

**CUSTOMIZED**

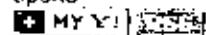
**RSS NEWS**

**FEEDS**

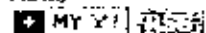
Steelers



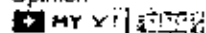
Sports



News



Opinion



... More Feeds

"We always stay in the green area," he said.

Police can program the LRAD to broadcast high-pitched warble repeatedly. The voice that people hear is computerized. It can make announcements in Spanish and other languages.

City officials originally pegged the cost of buying four of the devices with a U.S. Department of Homeland Security grant at roughly \$200,000. Ray DeMichiei, city deputy director of emergency services, however, put the cost at \$101,000.

City and county SWAT teams will each get two LRADs.

One will remain in the city's Ballistic Engineered Armored Response vehicle — better known as the BEAR — for use during protests and standoff situations, Mescan said. The device can be mounted atop the BEAR. From there, it sends out a loud stream of sound 30 degrees wide.

It is effective to roughly 330 yards, but can be heard at greater distances. Police bought the devices to deal with protesters during the G-20 summit, but they will have other uses.

Police used it yesterday to order residents of Saranac Street in Beechview to stay in their homes during a standoff with a gunman who killed himself. Before the G-20, police used the LRAD to order a man holed up in a home in Beltzhoover to surrender, Mescan said.

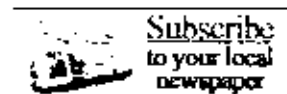
[Back to headlines](#)

**More Pittsburgh, Allegheny headlines**

- City firefighter, two others arrested in South Side break-in
- One of Allegheny County's 'most wanted' arrested
- Drunken passenger causes Pittsburgh-to-Paris flight to divert
- Tiger Ranch ex-operator gets probation, house arrest
- KDKA's Zanos had 'wonderful life'
- Braddock hospital closure protest goes to source
- Ravenstahl proposes broadened domestic abuse policy
- County road chiefs keeping wary eye on salt supply

**Ways to get us**

- Be a Facebook fan
- Follow us on Twitter
- E-mail Newsletters
- On your mobile





---

## RNC to Feature Unusual Forms of Sound

Unusual Forms of Sound to Emanate From RNC

By Amanda Onion

Aug. 25, 2004

Coming soon to a convention near you: Sound like it has never (or at least, rarely) been heard before.

As politicians at the Republican National Convention use microphones to make themselves heard from the podium, other sounds in and around the event will be emitted in cutting-edge audio technology.

Outside the convention hall, New York City police plan to control protesters using a device that directs sound for up to 1,500 feet in a spotlight-like beam. Meanwhile, a display of former Republican presidents inside the hall will feature campaign speeches that are funneled to listeners through highly focused audio beams.

"These are totally different from the way an ordinary speaker emits sound," said Elwood (Woody) Norris, founder and head of American Technology Corp. of San Diego. "It's like it's inside your head."

Norris, an intrepid entrepreneur who has no college degree but more than 43 patents to his name, invented both the crowd control tool, called the Long Range Acoustical Device (LRAD), and the display audio technology, called HyperSonic Sound (HSS).

Both technologies feature unprecedented manipulation of sound, but for very different purposes. And while both technologies have unique, "gee-whiz" factors, some remain uneasy with the idea of using sound to control crowds.

"It produces sound in a way that for most people will be a novel experience, so I think it has potential to create confusion and panic," said Richard Glen Boire, founder of the Center for Cognitive Liberty and Ethics in Davis, Calif. "It can't be identified, it's an invisible force."

Sound as a Weapon



In fact, LRAD, which is 33 inches in diameter and looks like a giant spotlight, has been used by the U.S. military in Iraq and at sea as a non-lethal force. In these settings, operators can use the device not only to convey orders, but also as a weapon.

When in weapon mode, LRAD blasts a tightly controlled stream of caustic sound that can be turned up to high enough levels to trigger nausea or possibly fainting. The operators themselves remain unaffected since the noise is contained in its focused beam.

"We've devised a system with a multiplicity of individual speakers that are phased so sound that would normally go off to the side or up or down, cancels out, while sound directly in front is reinforced," Norris explained. "It's kind of like the way a lens magnifies a beam of light."

The Department of Defense gave Norris and his team funding to develop LRAD following the 9/11 attacks. The concept is to offer an intermediate tool to warn and ward off attacking combatants before resorting to force.

"Regular bullets don't have volume control on them," said Norris. "With this, you just cause a person's ears to ring."

The NYPD, however, has said they won't be using the \$35,000 tool to make people's ears ring, but only as a communication device.

"We're only going to use them for safety announcements and directions," said Paul Browne, a police spokesman.

In tests, police have shown how they can convey orders in a normal voice to someone as far as four blocks away. The sound beam is even equipped with a viewfinder so the operator can precisely target the audio by finding a person in cross hairs. Rather than using pure volume to throw sound far, the LRAD reaches distant ears by focusing the audio beam.

This is the second time the device has been used by police. Miami police also used it during the free-trade conference in that city last year.

Despite the NYPD's assurances that they won't use the tool to hurt protesters, Bill Dobbs of United for Peace and Justice, which has planned protests around the convention, has told reporters that the sound system presents "a potential Big Brother nightmare."

#### Quiet Noise

Inside the convention center, people will have the chance to experience another of Norris's inventions.

A TIME magazine display at the convention will feature speeches of past Republican presidents in tightly controlled beams of HyperSonic Sound (HSS). Viewers can literally step in and out of the display's different listening zones. A similar high-tech display of former Democratic presidents was featured at the Democratic National Convention in Boston in July.

HSS works by mixing regular, audible sound with two beams of super high frequency, inaudible sound waves. "Just the way artists mix their

paint," says Norris.

The resulting ultrasonic sound wave can then be directed out in a tightly controlled beam. Wherever the beam makes contact with air, the air molecules interact in a way that isolates the original audible sound. So if you're standing in front of the ultrasonic sound wave, you can hear the sound. If you're a few inches away, you hear nothing.

This cuts down on ambient noise and gives listeners the somewhat eerie effect that the noise is inside their heads.

"We like to say we create silence instead of noise," said Norris. "You don't need to fill the space with a whole cacophony of noise."

The GOP convention display should perk up the ears of some curious attendees, but Norris is most excited about the device's marketing potential.

Already, some Coca-Cola machines in Japan are equipped with the technology so passers-by hear the enticing sound of soda being poured into a glass of ice. And dozens of Safeway supermarkets in California, Colorado and Virginia are testing the technology on patrons waiting in line to pay. Norris' company has also sent out HSS for testing at Wal-Mart and McDonald's. The narrow beams of sound advertise sale items at the store or restaurant and feature promotional material.

Glen Boire argues the concept is annoying and invasive, but Norris counters, "If you don't want to hear it, you can move your head a half foot away and it will go away."

Needless to say, it won't be as simple for convention-goers and protesters who may wish to tune each other out next week.

Copyright © 2010 ABC News Internet Ventures