Oakland Police Department
Controlled Equipment Impact Report

ATTACHMENT A

Item(s): LRAD
Applicable Use Policy: DGO I-27 Long-Range Acoustical Device (LRAD)

Description and Purpose

LRAD 100X Speaker	
Description	A Long-Range Acoustical Device (LRAD) is an acoustic hailing device used for emitting amplified public announcements or establishing communication
Manufacturer's Product Description	The LRAD-100X is a self-contained, lightweight, and compact battery-powered hailer that communicates with great intelligibility up to 600 meters. Unlike handheld bullhorn devices, the LRAD-100X emits acoustic sound pressure levels up to 140 dB that result in clear, intelligible communications and unmistakable, stunning alert tones. In addition to broadcasting alert tones, the LRAD-100X is also capable of playing prerecorded messages and audio files stored in its MP3 player, and broadcasting live speech through its handheld microphone.
How the item works	An LRAD is a loudspeaker-like device that emits a focused beam of sound. What makes these systems unique is that rather than transmitting sound like a loudspeaker in many directions (similar to the way a lightbulb emits light), LRAD systems transmit sound in a narrow beam (much like a flashlight)
Expected lifespan	Not listed with Manufacturer or website; with care speaker can last several years though
Quantity	One (1) owned
Purpose and intended uses and/or effects	LRAD is not designed to be utilized as an "area of denial" device, but rather as an effective broadcasting system for messaging and offers advantages over less amplified PA systems. Broadcasted messages are clear through inclement weather and other external noises and can be clearly heard indoors. The system is beneficial in establishing communication during search warrants, barricaded suspects and during civil unrest.

LRAD 450X- Speaker	
Description	A Long-Range Acoustical Device (LRAD) is an acoustic hailing device used for emitting amplified public announcements or establishing communication

Manufacturer's Product Description	LRAD systems deliver live or recorded voice messages with exceptional clarity for any operational scenario. Optimized to the primary range of hearing, LRAD's Advanced Driver and Waveguide Technology ensure every broadcast is clearly heard and understood, even above crowd, engine, and background noise. LRAD systems are in service in more than 100 countries and 500 U.S. cities in diverse applications.
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Fiscal Costs

Initial Costs

☑ The Oakland Police Department (OPD) currently owns/possesses/uses the equipment. Initial costs (if known) to obtain the equipment were:

Equipment	Per-unit cost	Total cost
LRAD 100X	~$14,200	~$14,200
LRAD 450X	~$41,360	~$41,360

Estimated or anticipated costs for each proposed use

The LRADs are stored in locked and secured facility or vehicle at the Oakland Police Department. The Hostage Negotiating Team (HNT) members have access to an LRAD and will respond to an incident with the device when requested by an Incident Commander. HNT members may be on duty during incidents requiring an LRAD. If they are, they may deploy as patrol officers, or as their regular duty assignment, and utilize an LRAD. For a tactical team call-out, other HNT members will respond even if they are off-duty, resulting in overtime expenditures. The amount of the expenditure is based on the time the incident takes to resolve. Over time deployments can be tracked utilizing an i-code through fiscal.

Estimated or anticipated costs of potential adverse impacts

Potential adverse effects are myriad, and there is no way of anticipating every possible adverse impact. Additionally, even some known possible adverse effects may be so remote that they were not assessed for the purposes of this report. Finally, costs of even likely adverse effects may vary wildly based on other circumstances which are difficult to predict and can vary from incident to incident. Keeping this in mind, some potential adverse effects and their possible costs are:

Deliberate misuse might cause the Department to be exposed to liability, which could include monetary judgments against the City.

Unintentional misuse might cause the Department to be exposed to liability, which could include monetary judgments against the City.

Failures of the equipment might cause the Department to have to purchase additional items, at a cost per item as indicated.

Estimated or anticipated ongoing costs

Costs for operation include training, personnel, maintenance and upgrade costs.

Training and personnel costs – Currently, HNT has mandatory training once a month. This training consists of a 10-hour day and typically occurs at the OPD or any other nearby facility or location. There has not been any rental fees or associated costs to locations of training currently. Some training may either require the HNT member attending to be on overtime, or for overtime to backfill that respective HNT members position while they are at training. If an HNT member elects to attend a POST certified training or outside training course there could be associated costs. Unknown yearly costs.

Storage costs – LRADs are housed at secured OPD facilities and vehicles and there are no associated costs.

Maintenance and upgrade costs – Currently, there is no known life span for an LRAD. With proper care the life expectancy will be longer. However, normal wear and tear can take place and will require replacement of parts. Depending on the part, the cost per item can range from fractions of a dollar to several hundred dollars.

Impacts

Reasonably anticipated impacts

Deliberate misuse.

Though unlikely, it is possible that LRAD may be deliberately misused by employees. Some of the ways that the Department attempts to prevent deliberate misuse is through background checks of prospective employees, supervision and training, strict policy guidelines, robust reporting and accountability practices, and discipline for deliberate misconduct up to and including termination. Suspected criminal misuse of equipment may also be forwarded to the District Attorney's office or other appropriate prosecuting agency for charging consideration.

Unintentional misuse.

Unintentional misuse of LRAD may come in many forms, from unfamiliarity or lack of training to the encountering of a scenario that was not anticipated in training or policy. The Department attempts to prevent unintentional misuse through thorough training, clear policy prescriptions, and robust review processes such as force reports, force review boards, and pursuit review boards.

Perception of militarization or exacerbation of a police/community divide.

While it is not the intent of the Department that this occur, the Department does recognize the possibility that its use of LRAD may lead to a perception of militarization of the Department, or an exacerbation of any existing divides between the Department and the community it serves and is a part of. The Department attempts to overcome challenges such as this by taking full advantage of community forums required by policy and law (see for instance the mandated community engagement meeting in DGO K-07 and CA Government Code § 7072(b)), by completing full and robust reports such as this one, and by collaborating

with the Police Commission in the creation of use policies and procedural safeguards surrounding this equipment.

Hearing Impairment

Short-term exposure to loud noise like the LRAD's deterrent tone may cause a sensation of stuffed or ringing ears, known as tinnitus, which can cease minutes after the exposure or last for days. Other sound injury symptoms include headaches, nausea, sweating, vertigo, and loss of balance. Understanding this is crucial and adhering to policy prohibited usages is also detrimental to avoid injuries.

The Model 100X is a small portable device, about the size of a backpack and is capable of emitting 137 decibels at 765 yards. LRAD 100X is 20 – 30 decibels louder than typical bullhorns and vehicle-based P.A. systems. Live or recorded broadcasts from the portable LRAD 100X are heard above crowd and background noise to ensure every message is clearly delivered.

Model 450X utilizes technology developed and patented* by Genasys Inc. to provide the audio output of larger acoustic hailers almost twice its size and weight, while delivering the same outstanding vocal clarity inherent in all LRAD systems. The LRAD 450X is capable of emitting 146 decibels at 1700 meters (~1,859 yards).

Proper measures for officer safety should be outlined to ensure officers do not cause hearing damage or other injury to themselves when using LRAD systems.

Mitigations

Complaint receipt and investigation procedures – DGO M-03

The use of controlled equipment, as with any use of the police powers, is subject to the rules and laws that govern the Department and its employees. Complaints and allegations that the Department or its employees have violated these rules or laws are treated with the utmost seriousness, including proper intake at the Internal Affairs Division and investigation by the appropriate investigative individual. Where allegations are found to be substantiated, the Department uses a progressive discipline structure to serve both deterrent and rehabilitative functions. Finally, deliberate misconduct or actions contrary to the Department's values are not tolerated and can lead to termination of employment.

OPD's complaint receipt and investigation procedures serve as important procedural mitigations to the possible adverse impacts of the use of this equipment.

Community outreach and specific inquiry pathways – DGO K-07

Use of controlled equipment, especially equipment that may have analogues used by militaries or quasi-military federal law enforcement, can drive perceptions of a militarized police force that is pre-disposed to the use of force as opposed to thoughtful, deliberate resolutions to incidents using de-escalation and minimizing the use of force. An important procedural mitigation to this type of perception is regularly communicating with the community served, as a way for information to be shared in both directions. This serves to dispel common misconceptions as well as provide valuable perspective for the Department and its employees. OPD uses community outreach, such as social media, community events, and a specific, annual community forum as required by DGO K-07. Additionally, OPD's overarching controlled equipment policy sets forth processes for inquiries about the equipment.

Equipment-specific use policy and Police Commission oversight – OMC 9.65

While most every law enforcement agency is bound by state law (Government Code § 7070 et. seq.), the very nature of police oversight in Oakland provides one of the most powerful procedural mitigations of potentially adverse impacts. For instance, state law requires that most agencies have their controlled equipment use policies approved by their governing body (e.g., City Council, or Board of Supervisors). In the case of OPD, however, there is an additional layer of oversight in the Police Commission, which must review any controlled equipment use policy prior to it being approved by the City Council. This requirement, set forth in Oakland's municipal code section 9.65, is a procedural mitigation to the possible adverse impacts of the use of this equipment.

Technical safeguards

LRAD's have volume controls to ensure safety and have maximum decibel ranges. Unlike bullhorns, vehicle P.A. systems and conventional loudspeakers that disperse sound in all directions, LRAD's proprietary audio technology focuses sound in a 15° – 30° beam in front of its Long-Range Acoustic Devices, while significantly reducing audio levels behind the devices and in surrounding areas.

LRAD broadcasts are safely optimized to the primary human hearing range of 1 – 5 kHz to generate voice messages that are clearly heard and understood from close range to over 5,500 meters.

Volume Controls:

Each LRAD model's maximum sound pressure level (SPL) is specified. Every LRAD features a prominent volume control dial surrounded by a graphic representing Green, Yellow and Red zones corresponding to approximate SPLs. Working backwards from maximum volume (Red

zone), the boundary between Red and Yellow reduces the maximum SPL by approximately 6 dB (half the audio output); the boundary between Yellow and Green is approximately 32 dB down from maximum.

Procedural safeguards

OPD only allows HNT members, who have attended HNT training, to utilize an LRAD. Officers must submit a letter of intent and go through a selection process prior to being selected to join the OPD HNT. Once selected, Officers must attend monthly training and attend one of the following courses prior to utilizing an LRAD during live events:

1) 40-hour Hostage Negotiation School hosted by the Federal Bureau of Investigations, or;
2) 40-hour Basic Crisis Negotiations hosted by D-Prep (Training and Consulting Services for Disaster Preparation and Critical Incident Response)

Specific policy language should outline the range of distance where it is unsafe to employ high-decibel LRAD sound when people are present.

Alternatives

De-escalation and alternative strategies

OPD officers are mandated to use de-escalation strategies and tactics when safe and feasible. These strategies and tactics, which are predicated on de-escalation best practices around communication, containment, positioning, and time/distance/cover, reflect the Department's commitment to de-escalation over the reliance on force to compel compliance.

However, even during de-escalation strategies and actions, controlled equipment may be used or ready to further a safe outcome to the event for the engaged person, the community, and the officers. Generally, a built-in alternative to the actual use of controlled equipment is its use as a tool to provide safety, information, or containment to an incident so that officers can bring the situation under control and hopefully encourage a peaceful outcome. This, in conjunction with other de-escalation or alternative strategies, provides a baseline for OPD officers in the conduct of their duties when using or contemplating the use of this controlled equipment.

There are other manufacturers of acoustic hailing devices, but majority of agencies utilize an LRAD. Most other speakers will have the same or similar capabilities.

Location

LRAD will typically be used within the areas that OPD has jurisdiction or in areas of the State of California where OPD is specifically conducting operations or investigations. This includes the entirety of the City of Oakland and may include neighboring jurisdictions or other areas within the State.

Third Party Dependence

☑ This item does not require third-party actors for operation.

☐ This item does require third-part actors for operation:

Track Record

Many other agencies have Long-Range Acoustical Devices (LRAD) for various reasons. As noted in DGO I-27, An LRAD is an acoustic hailing device used for emitting amplified public announcements and establishing communication during search warrant services, barricaded suspect incidents, and other tactical operations.

The LRAD is the most common device utilized within law enforcement agencies within CA and throughout the nation. Several agencies nearby, such as Alameda County Sheriff's Office, Santa Rosa and San Francisco Police Department have their respective policies.

The Alameda County Sheriff's Office (ACSO) has similar authorized usages.

Santa Rosa Police Department has disabled their warning tone after a public safety subcommittee recommendation.

In November 2012, the City of Pittsburgh agreed to a payout settlement in two cases stemming from the actions of the City during the September 2009 G-20 Summit, including a payout to a bystander who suffered permanent hearing loss after Pittsburgh police deployed an LRAD on a neighborhood street. The police in this case used the LRAD in an apparent attempt to disperse protestors. After the settlement, the city agreed to develop a policy governing LRAD deployments to ensure its careful and controlled use.

The San Francisco Police Department (SFPD) LRAD has been taken out of service.

Although SFPD has taken their LRAD out of service and SRPD has removed their warning tone, the LRAD provides advantages over PA systems and is beneficial in broadcasting public or safety announcements and can assist in establishing communication with subjects suffering from mental health crises. The Usage of the warning tone is instrumental as noted in policy and can assist immensely in the success of broadcasting public or safety announcements. However, there must be specific guidelines in regards to distance and number of occurrences when using the warning tones.