



Acoustic Weapons



Crowd-Control Weapons Series

Overview

Acoustic weapons, also known as long-range acoustic devices and sound cannons, are devices that deliver very loud sounds over long distances. This technology is used for crowd-control purposes by emitting loud and painful levels of noise that may lead to significant harm to the ears, potentially causing hearing loss. Serious questions remain about the safety and efficacy of acoustic weapons in crowd-control contexts.

History

Sound amplifiers have been used for centuries, but this technology was weaponized for crowd-control purposes in the early 1990s. Specialty devices that are able to project loud sounds over very long ranges were first used by the U.S. military in Iraq in 2004. Since the 1990s, the U.S. military and private companies have also researched infrasonic devices which could have effects at very low frequencies that might not be heard by the human ear.

How They Work

Acoustic weapons function by emitting loud, painful, and even dangerous levels of noise. They use hundreds of modern transducers to create highly concentrated and amplified sound. This fairly narrow beam can focus on specific targeted areas. The sound is designed to be controlled by police officers who can alter the frequency, level, quality, and duration of the alarm. Abuse or lack of operator knowledge about the health effects can exacerbate injury.

Device Types

- The **LRAD (Long Range Acoustic Device)** brand: The LRAD has a range of 8,900 meters for intelligible speech and a maximum output of 12 decibels at one meter. It can cause pain at 20 meters and permanent hearing loss at close range (5 meters or less).
- **“The Mosquito:”** A high-pitched sound weapon that is audible and painful to younger people, while leaving older people (30s and older) unaffected.
- **Infrasonic weapon:** This newer technology is under investigation. It would deliver very low-frequency sounds that would be inaudible but could cause pain, disorientation, nausea, and possibly long-term hearing loss.

Health Effects

There is little medical literature on the effects of acoustic weapons on people. There are cases reported between 1990 and 2015 of hearing loss and prolonged ear pain or ringing, but adequate scientific research is not yet available to develop consensus on specific health effects. However, it is clear from reports about actual use that the weapons can be indiscriminate, causing harm or pain to protesters, bystanders, and even police officers themselves.

There are significant concerns about the high potential of acoustic weapons to cause serious and permanent injury.

Legality of Use

International human rights law protects the right to freedom of assembly, including the right to hold public or private meetings, marches, processions, demonstrations, and sit-ins.

The state has a duty to protect those exercising their right to peaceful assembly from any type of violence, including violence from law enforcement agents and counter-protesters. As long as the purpose of the assembly is peaceful, incidental violence does not discharge the state from this obligation to protect.

International legal principles require law enforcement agencies to adopt rules and regulations for the use of force within the following parameters:

- The use of force must be minimized, targeted, proportional, and directed at de-escalating violence.
- The use of non-lethal incapacitating weapons must be carefully controlled.
- The deployment of non-lethal incapacitating weapons must occur in a manner that minimizes the risk of endangering uninvolved persons.
- Restraint must be shown in all use of force by law enforcement agents, with a view to minimizing injury and loss of life.

In addition, the state has an obligation to ensure that assistance and medical aid are rendered to any injured or affected persons at the earliest possible moment.

International human rights principles have been violated if the use of less than lethal incapacitating weapons is not adequately regulated, or if the weapons are used in an indiscriminate manner.

Considerations and Policy Recommendations

- Based on initial case reports, there are serious concerns about the high potential of acoustic weapons to cause serious and permanent injury, particularly if they are utilized more frequently.
 - Proper research and evidence about acoustic weapons' health effects is still lacking, despite their increased use in recent years.
 - The use of acoustic weapons in protests should be suspended at least until such concerns are addressed.
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