ACOUSTIC WEAPONS

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 that 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.

DEVICE TYPES

THE LRAD (LONG RANGE ACOUSTIC DEVICE) BRAND

Has a range of 8,900 meters for intelligible speech and a maximum output of 162 decibels at one meter. It can cause pain (110-130dB) at 20 meters.

"THE MOSQUITO"

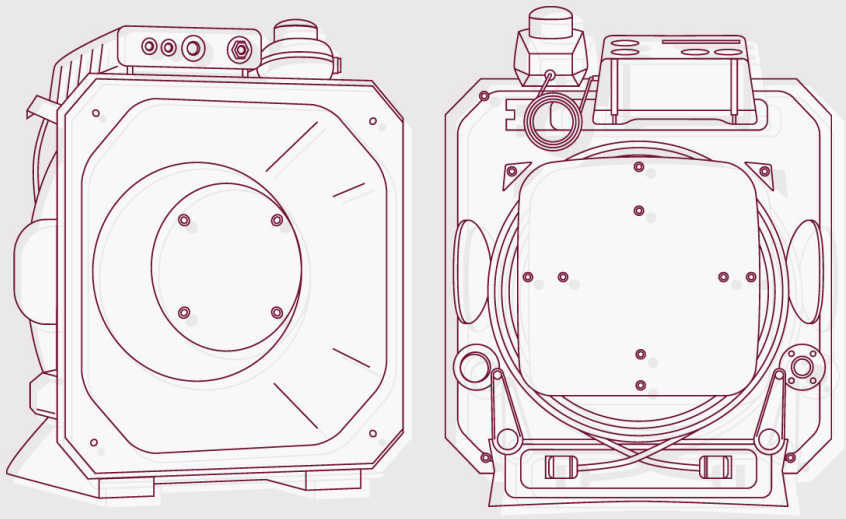
A high-pitched sound weapon that is audible and painful to younger people, while leaving older people (30s and older) unaffected.

INFRASONIC WEAPON

This newer technology is under investigation. It would deliver very low frequency sounds that would be inaudible but could cause pain and disorientation.

HEALTH EFFECTS

There is little medical literature on the effects of acoustic weapons on people. There are reports of **hearing loss** and **prolonged ear pain** or **ringing**, but adequate data is not yet available to develop consensus. However, the weapons can be indiscriminate, causing harm or pain to protesters, bystanders and even police officers themselves.



VARIABLES THAT CAN EXACERBATE INJURIES

ABUSE OR LACK OF OPERATOR KNOWLEDGE

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.

CONSIDERATIONS AND POLICY RECOMMENDATIONS

THERE ARE SERIOUS CONCERNS ABOUT THE HIGH POTENTIAL OF ACOUSTIC WEAPONS TO CAUSE SERIOUS AND PERMANENT INJURY.

- ✔ **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.

For more information, see Physicians for Human Rights and INCLO, *"Lethal in Disguise: The Health Consequences of Crowd-Control Weapons."* (March, 2016).

PHR Physicians for Human Rights

INCLO INTERNATIONAL NETWORK OF CIVIL LIBERTIES ORGANIZATIONS