**Acoustic Weapons**

**Memorandum For Convention on Conventional Weapons (CCW) Delegates**

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Source: Arms Division of Human Rights Watch

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TO: Delegates to First Annual Conference on CCW Amended Protocol II
FROM: Arms Division of Human Rights Watch
RE: Acoustic Weapons

Acoustic weapons are close to becoming a reality, both on the battlefield and elsewhere. The United States is building two prototype acoustic weapons, is field testing weapons of at least two companies, and may move from research and development to production soon. Other nations reported to be (or to have been) involved in research on acoustic weapons include Russia, China, France, United Kingdom, and Israel. Sweden, Japan, Poland, Yugoslavia, and Denmark are reported to have acoustic weapons effects research programs.

Human Rights Watch has been investigating acoustic weapons for four years as part of a program to evaluate new weapons technologies and their consistency with international humanitarian law. Human Rights Watch is also closely monitoring other directed energy antipersonnel weapons under development, including blinding and dazzling lasers, high-power microwaves and radio frequency weapons.

Human Rights Watch does not oppose development of non-lethal weapons as a class. Acoustic weapons deserve special scrutiny because they represent introduction of a completely new weapons mode based on a novel physical principle. Human Rights Watch is concerned that an insufficient assessment has been made of these weapons, and that some or all may not be consistent with international humanitarian or human rights law.

Despite the name, acoustic weapons are not intended to cause deafness per se. The existing military literature indicates that acoustic weapons--across the entire frequency spectrum, from infrasound to ultrasound--have the ability to cause severe pain, loss of bodily functions, and bodily injury. Depending on the frequencies, intensities (decibel level), and modulations employed, acoustic weapons could cause permanent or temporary physical damage, including damage to internal organs, interference with the workings of the central nervous system, and thermal injuries (burns). Other effects noted by the U.S. military, acoustic contractors, and experts include tissue destruction, hemorrhaging, spasms, acoustic fever, vomiting, choking respiration, "intolerable sensations mainly in the chest," "significant decrement in visual acuity," incontinence, postexposure fatigue, and diffuse psychological effects.

Though not the primary intent, acoustic weapons could cause hearing loss, including total hearing loss, from even short exposures to very high sound levels. Indeed, even though acoustic weapons are often assumed to be by definition non-lethal, they could also be developed and used for lethal warfare.

A host of military and civilian missions are being considered for acoustic weapons, including both battlefield combat and so-called military operations other than war -- urban combat, crowd control, hostage rescue, perimeter defense and physical security. There are indications that acoustic weapons are also being developed for secret "special" missions and covert operations such as counter-terrorism. Acoustic weapons are also being developed with commercialization in mind, for civil law enforcement, border control, and internal prison use.

Human Rights Watch has the following primary concerns with regard to the development of acoustic weapons:

. Some or all acoustic weapons may be inconsistent with current standards and obligations of international humanitarian law.

. There has been a lack of public policy, military, legal, arms control, or humanitarian discussion regarding development and use of this new mode of weaponry.

\* Acoustic weapons programs have been shrouded in excessive secrecy, making meaningful assessment, evaluation and review very difficult.

. There has been insufficient research into human effects, even as the weapons are pursued in latter stages of development.

Given the current paucity of information available, it is an open question if some or all acoustic weapons (or acoustic weapons' uses) could be considered inhumane and illegal under international humanitarian law, due to:

(1) their potential to cause unnecessary suffering to combatants and non-combatants;
(2) their potentially excessively injurious character;
(3) their potential for indiscriminateness, that is, inability to be restricted to military targets; and
(4) their potentially disproportionate impact on civilians compared to their military utility.

With the banning of blinding laser weapons by the international community in 1995, acoustic weapons are the next new antipersonnel weapon to emerge based upon novel and/or unconventional physical principles. Such a completely new technology demands the closest scrutiny to ensure compliance with domestic and international law, as well as societal acceptability. Yet there has been almost no debate about research into acoustic weapons. Human Rights Watch is concerned that development moves forward without any realistic appreciation of the military dimensions of acoustic weapons, without a full understanding of the human effects, and with a deficient appreciation of social, policy and legal questions.

It may be technically possible to develop acoustic antipersonnel weapons that are consistent with the requirements of international humanitarian law, and are acceptable to the public conscience. However, to make that determination requires greater transparency, more probing research into human effects, and high-level political and legal review.

The international community is at a propitious moment to evaluate thoroughly and critically acoustic weapons before their deployment and widespread proliferation. This must be done now in order to ensure that acoustic weapons do not become a humanitarian disaster in the future.

Any nation involved in acoustic weapons development efforts should suspend such efforts until all appropriate legal and humanitarian reviews have been completed. Bioeffects research should be peer-reviewed in the open scientific literature. Nations should abandon the excessive secrecy surrounding acoustic weapons programs.

It is obvious that there is still not sufficient scientific study to understand either the military effectiveness or human effects of acoustic weapons. Because we do not yet know the military utility or the full human effects of prospective acoustic weapons, their legality remains in question. Governments should, as a matter of priority, determine the criteria for what would constitute an effective and legal acoustic weapon, and what would constitute an illegal acoustic weapon.

Consideration should be given to adding a new protocol dealing with acoustic weapons to the Convention on Conventional Weapons. Such a protocol should prohibit those acoustic weapons and uses of acoustic weapons that violate international humanitarian law, and establish rules, restrictions and criteria for legal weapons and uses. Such a protocol could result in a substantially reduced risk of widespread development, proliferation and use of acoustic weapons that may prove indiscriminate, inhumane or cruel. It could also help to continue to clarify the legitimacy of new weapons technologies. As with the adoption in 1995 of Protocol IV banning blinding laser weapons, a new protocol could address the risks in a timely way, before acoustic weapons become a humanitarian menace.

**Acoustics/Sonic**

**Shock Waves**

**Sound as a Weapon**
Author unknown

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Sound is mostly associated with something we hear. We listen to people talking, music on the radio, and other type of sounds. But what most people don't know is that sound can be used as a weapon.

Sound below the hearing range (20 Hz) of a human is called infrasonic, and above human hearing rang (20 kHz) is ultrasonic. A laser is an electromagnetic wave with a single wavelength that can be focused and targeted on an object. CD players use a laser to read information off a CD. Sound, however, is an atmospheric wave. Can a focused sound wave be generated and used to strike an object. The answer is yes.

Sound waves with high amplitudes can be used as a weapon. This is not the type of sound you hear but the type of sound you would feel in an explosion. A shock wave. If you have two or more focused sound waves, they can be angled and combined at some focal point. The combining of the waves at the focal point can produce a very powerful wave. One of the focused waves modulated with information can control the result of the final wave.

The final wave can be infrasonic, audible, or ultrasonic. This technology can be used to direct an audible message to a person by aiming the device at the side of the target's head, near one ear. This message can be sent to only one person in a room filled with people, or while the person is just lying in bed. The message can be sent from the same house or the house next door. The ultrasonic waves will travel through walls of a house with little loss before combining to produce the audible message.

The waves passing through the walls will not damage the house in anyway. A person could be tricked into thinking that God is speaking to them, for example. Depending on the targeted person's state of mind, he or she could be manipulated into doing something that he or she would not normally do.

This technology can be used as a very effective weapon. Powerful ultrasonic focused sound waves can be fired through a house without damaging the house in anyway. These waves could have amplitudes of several inches. If a person is struck by these focused waves as they pass through a house, the person could feel a slight tap or a strong violent jolt, depending on the strength and distance of the weapon. Strong infrasonic or ultrasonic sound waves passing through the head, neck, or chest can cause gasping for breath, head pains, or a choking effect.

The firing point of the weapon could be from inside of the house next door or the inside of the house across the street. Since the weapon is hidden inside of a house and no damage is done to either house, it is virtually impossible to visually detect it. The wave after striking its target and passing through the targeted house will dissipate in the atmosphere over a distance. This is truly a vanishing bullet.

Ultrasonic waves can not only pass through a house wall without causing any damage but can also pass through stone, brick, and metal. There is no safe place from these weapons in a conventional house. Total protection from these infrasonic and ultrasonic waves is limited to a vacuum, no air. Sound cannot pass through a vacuum. Vacuum barriers placed around a targeted person can render these sound weapons useless.

Weapons such as these are useless unless they are able to strike a human target. A targeting system that can target a person through the walls of a house is needed. Imaging technology now exist that can display images of individuals inside a house or building. I believe the imaging technology uses electromagnetic waves that reflect back on surfaces close to body temperature. The reflective waves would be used to build an image of people inside the house.

The combining of the above mentioned sound weapons and this targeting system insure precise identification and targeting of the human target. The targeting system and weapon can be made mobile. The equipment can be hidden in the back of a small truck or van. The vehicle would be parked near the building of the where the targeted person is. A person hiding in the back of the vehicle can target and fire the weapon at the targeted person in the building. As long as the general vicinity of the person is known, the targeted person can be identified and targeted by body detail using the targeting system.

The weapon produces a very powerful ultrasonic frequency and the wave has tremendous distance. The wave can be fired through the head of the targeted person. The frequency of the sound wave is quickly varied from a frequency that will penetrate the skull easily to one which will not. The targeted person will feel this wave passing through his or her head. This will most certainly intimidate a person. Both the targeting system and weapon are very expensive.

Harassment groups are currently using this technology to assist neighborhood communities with the task of riding their communities of unwelcome neighbors. This technology is extremely effective. It could be used to keep the targeted person awake all night by striking the person throughout the night, possibly causing the person to lose their job because of poor work performance from lack of sleep. It is impossible to sleep through a strong sound wave passing through your body. The income earner of a family can be singled out and targeted in a family situation.

It is possible to run a person or a family out of their house with this technology. The local police will not know how to handle a situation like this. They have no equipment to detect the targeting system or weapon. These weapons leave no visual marks on the human body after being struck, so no physical evidence can be produced for the police. The police will just assume the targeted person is crazy and brush them off. Detection devices are needed to detect this technology. More types harassment groups will discover the potential of this technology and quickly employ it. These weapons are designed for one purpose, to terrorize people.

NOTE:

The above mentioned technology is real and currently being used. This is no joke.

OTHER INFORMATION:

http://members.aol.com/ultra21753/ultra.htm
http://members.aol.com/ultra21753/weapon.htm
http://members.aol.com/ultra21753/weapon2.htm