Infrasound Página 1 de 8



Webster's Dictionary defines infrasonic, or infrasound, as "1: having or relating to a frequency below the audibility range of the human ear. 2: utilizing or produced by infrasonic waves or vibrations."

Infrasound is especially dangerous, due to its strong vibrations, or oscillations. Infrasound waves hug the ground, travel for long distances without losing strength, and are unstoppable. Not much amplitude is needed to produce negative effects in the human body, and even mild infrasound exposure requires several hours, or even days, to reverse symptoms.

Natural and man-made infrasound occurs in our world, but thankfully, extreme manifestations and contact with humans are infrequent.



Natural explosions from volcanoes produce infrasonic waves. When Kraka exploded, lifting an entire island 100 miles into the air, windows were shatt miles away from ground zero. The shock waves, affecting both earth and at continued for hours.

Explosives, such as atomic weapons, produce infrasound. Zone one is ground zero and its destruction. Zone 2 is a powerful, speeding, sonic wave of reduced air pressure. This concussion blast travels at great distances away from ground zero and few survive its destructive path.



Waves of infrasound are invisible, but slam into living tissue and physical structures with great force.

The sensation vibrates internal organs and buildings, flattening objects as the sonic wave strikes.

At certain pitches, it can explode matter.

Certain animals use infrasound. Elephants use it to communicate at distances of up to 10 miles (12 - 35 Hz.).

Infrasound is so powerful that it can be used as a weapon. John Cody, in his article, 'Infrasound,' writes about sea life:

Infrasound Página 2 de 8



"It has been known that certain whiles are able to stun their prey with pow of inaudible sounds. Called 'gunshots,' whales focus these powerful blasts; squid and other fish to paralyze and catch them. In some instances, they ha known to burst their prey apart by tonal projection alone."

Distress calls from small, beached whales pushed a veterinarian back sever water.

Other sources of infrasound include earthquakes, pounding surf, waterfalls, calving of glacial ice, tidal waves, aurora borealis (0.1 - 0.01 Hz), solar flares, solar winds, hurricanes, thunderstorms, the jet stream (30-40Hz),

winds in caverns (20-30 Hz.), etc.

Man-made structures, such as engines, cars, buses, trains, motorcycles, and airplanes also produce infrasound. John Cody also noted that pilots exposed to infrasonic vibrations of jet chassis experience a reduction in "vision, speech, intelligence, orientation, equilibrium, ability to accurately discern situations, and make reasonable decisions."

Infrasonic vibrations, though harmful, can be pleasantly stimulating in mild levels. The effects of brief, mild exposure can give a feeling of invigoration for hours. While a person may FEEL invigorated and euphoric, his body is being subjected to an elevated heart rate, elevated blood pressure, a release of endorphins, and the "fight or flight" adrenaline response. Feeling the effects of high-intensity/low-frequency sound can actually become an addiction, partially due to the release of endorphins in the body.

Depending on the pitch, infrasound can cause physical pressure, fear, disorientation, negative physical and mental symptoms, explode matter, incapacitate, and kill. For example, in World War II, Nazi propaganda engineers used infrasound to stir up anger in the large crowds that had gathered to hear Hitler. The result was a nation filled with anger and hatred.

Studies show the different ways in which infrasound affects the human body. As infrasound pitches, or cycles per second, decrease, deadly effects on the body increase. Infrasound disrupts the normal functioning of the middle and inner ear, leading to nausea, imbalance, impaired equilibrium, immobilization, and disorientation. Exposure to even mild doses of infrasound can lead to illness. Increased intensities of infrasound can result in death.

These are a few examples of low frequency (below 500 Hz) and infrasound (below 20 Hz.) levels and their effects:

**12 Cycles Per Second** (Hz) - Walt Disney and his artists accidentally exp infrasound on one occasion. A cartoon sound effect was slowed from 60 cy second to 12 cycles per second via a tape-editing machine and was amplifithe theater system. The resulting tone, though brief in duration, produced i

Infrasound Página 3 de 8

crowd nausea that lingered for several days.



**100 Cycles Per Second** (Hz) - At this level, a person experiences irritation, "mild nausea, giddiness, skin flushing, and body tingling." Following this, a person undergoes "vertigo, anxiety, extreme fatigue, throat pressure, and respiratory dysfunction." (source; the Sonic Weapon of Vladimir Gavreau, by Gerry Vassilatos)





**60 - 73 Cycles Per Second** (Hz) - "coughing, severe sternal pressure, chol excessive salivation, extreme swallowing pains, inability to breathe, heada abdominal pain" were present. In the post exposure phase, test subjects cor cough, exhibit fatigue, and have skin flushing for up to four hours. (Source SONIC WEAPON OF VLADIMIR GAVREAU, by Gerry Vassilatos)

**WALL CURRENT** - In the United States, wall current is 60 cycles per second (Hz). In Europe, the wall current is 50 cycles per second. Since European current has a lower cycle, an observer can actually see light bulbs slightly flicker.





**43 - 73 Cycles Per Second** (Hz) - lack of visual acuity, IQ scores fall to 7 normal, distortion of spatial orientation, poor muscular coordination, loss c equilibrium, slurred speech, and blackout.

**1 - 10 Cycles Per Second** (Hz) - "Lethal infrasonic pitch lies in the 7 cycle range. Small amplitude increases affect human behavior in this range. Intellectual activity is first inhibited, blocked, and then destroyed. As the amplitude is increased, several disconcerting responses have been noted. These responses begin a complete neurological interference. The action of the medulla is physiologically blocked, its autonomic functions cease." (source; the Sonic Weapon of Vladimir Gavreau, by Gerry Vassilatos)



**50 - 100 Cycles Per Second** (Hz) - at 150 dB and higher, "intolerable sens chest and thoracic region can be produced - even with the ears protected. C physiological changes that can occur include chest all vibration and some I rhythm changes in human subjects, together with hypopharyngeal fullness The frequency range between 50 and 100 Hz also produces mild nausea an at levels of 150 - 155 dB, at which point subjective tolerance is reached. A dB (0.63 to 1.1 kPA), respiration-related effects include substernal discom

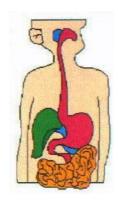
Infrasound Página 4 de 8



coughing, severe substernal pressure, choking respiration, and hypopharyn discomfort." (source; 'Acoustic Trauma: Bioeffects of Sound,' by Alex Dav

**7 Cycles Per Second** (Hz) - The most profound effects at this infrasonic level occur here. Seven Hz "corresponds with the median alpha-rhythm frequencies of the brain. It is also commonly alleged that this is the resonant frequency of the body's organs and hence organ rupture and death can occur at high-intensity exposures." (source; 'Acoustic Trauma: Bioeffects of Sound,' by Alex Davies)





Scientific Applications and Research Associates (SARA) - This agency infrasound research showed, "infrasound at 110 - 130 dB would cause inte and severe nausea. Extreme levels of annoyance or distraction would resul minutes of exposure to levels 90 to 120 dB at low frequencies (5 to 200 Hz physical trauma and damage to tissues at 140 - 150 dB, and instantaneous type trauma at above 170 dB. At low frequencies, resonance's in the body hemorrhage and spasm/ in the mid-audio range (0.5 to 2.5 kHz), resonance cavities of the body would cause nerve irritation, tissue trauma and heating and ultrasound frequencies (5 to 30 kHz) would cause heating up to lethal temperatures, tissue burns, and dehydration; and at high frequencies, or wi pulses, bubbles would form from cavitation and micro-lesions in tissue wo evolve." (source; 'Acoustic Trauma: Bioeffects of Sound,' by Alex Davies)

Infrasound Toxicological Summary, November 2001 - "When male volunteers were exposed to simulated industrial infrasound of 5 and 10 Hz and levels of 100 and 135 dB for 15 minutes, feelings of fatigue, apathy, and depression, pressure in the ears, loss of concentration, drowsiness, and vibration of internal organs were reported. In addition, effects were found in the central nervous system, the cardiovascular system, and the respiratory system. Synchronization phenomena were enhanced in the left hemisphere. Visual motor responses to stimuli were prolonged, and the strength of the effect was reduced. Heart rate was increased during the initial minutes of exposure. Depression of the encephalic hemodynamics with decreased venous flow from the skull cavity was observed. Heart muscle contraction strength was reduced. Respiration rate was significantly reduced after the first minute of exposure."





The U. S. Navy has an anti-submarine device called Low Frequency Acti sonar. It emits 240 dB. Damage was possibly done to whales and dolphins them to beach. Whales avoid areas with 120 dB or above. The Navy sets 1 maximum level of safe exposure to humans.

Infrasound Página 5 de 8

Long pipe organs, such as those found in churches and cathedrals produce infrasound. In one UK study, the extreme bass frequencies instilled strange feelings at a concert hall. Effects were "extreme sense of sorrow, coldness, anxiety, and even shivers down the spine." (source; Organ Music Instills Religious Feelings,' by Jonathan Amos, 9/8/2003)



Some boom cars are equipped with a device known as a burp button. These devices generate large amplitude pressure/low frequency noise. When the burp button is used, it activates a low-band pass-filter which forces all of the amplifier's power through the sub-woofer speakers at frequencies lower than a certain number of Hertz. At extremely low frequencies, it becomes infrasound. Thus you FEEL the blast of noise, as well as hear it.

A passenger in a boom car reported the following experience, October, 2000. The boom car was driven by DJ Billy E. The passenger told of his experience as he was subjected to the extreme bass (high-intensity/low-frequency sound) inside the vehicle. The blasts of low-frequency sound at 150 dB caused the following effects:

"Eager to crank up the system, he hands me a set of earplugs. 'Let's hear some burp.

'I stick the plugs in, and he hits the burp button, a red switch on the center console. It's difficult to describe what happens next. The noise sounds like 'BRRRROONNNNKKKK!' The vehicle vibrates like a jackhammer, but much lower and deeper. I feel air blowing the back of my hair, and my body starts to rise out of the seat. May pant legs are flapping. Everything in the car is rattling like crazy, and I realize my vision is blurred as my face pulls back taut against my skull. The only reaction left is to laugh out loud. I look over at Billy E gripping the steering wheel, squinting and grinning maniacally. He lets up on the button, and the chaos stops.

"If you're drinking a Coke, your throat will shut.' I'm amazed I can actually hear his voice. 'It's like being under water. Your ears don't ring they're just muted. After a day, everything opens up again,' he says.

"He never uses plugs. He says high frequencies, not the lows, damage the EARS." (capitals are mine). "Like most SPL competitors, his system is bottom-heavy, consisting mostly of sub-woofers. My ears aren't ringing much at all. I felt the blast much more in my body. To some degree, he's right about the damage. According to OSHA findings on noise in the workplace, highs are much more dangerous than lows. But it's also illegal to expose American employees to anything above 140 decibels. So we're still rebels after all."

The music industry is now producing CDs and sub-woofers capable of producing very low frequencies and infrasound:

1.) Bass Mekanik: Sonic Overload - 2 CD set with a myriad of very low frequency tracks. The lowest = 1 to 10 Hz. This CD is advertised with these words, via Parts Express online: "The ultimate

Infrasound Página 6 de 8

competition, showin' off your system and having a good time doing it disc.. you might even blow something up!"

- 2.) CD #101, Low Frequency Test CD contains tracks with 10 Hz, 11 Hz, 12 Hz, etc.
- 3.) Hollywood Sound Labs Excursion 158D a sub-woofer that has below 20 Hz handling capabilities. When tested, it produced 129.7 dB at 46 Hz with 1,000 watts of power. This was what was said about the sub-woofer, via Car Sound online: "However, in the big picture, this woofer seems to be more about scaring small children and their grandparents than the finer points of esoteric jazz and classical reproduction. It definitely excels at playing music that's designed to shake your innards around. Heavy boom or hip-hop tracks are just that heavy...To sum it up, this is not the sub that your neighbors would pick. They'd prefer that you just turn the page and stick with those ratty OEM 5X7s, thank you very much. So we should all just follow their advice (wink, wink) because I know that none of you guys out there would want to (nudge, nudge) annoy anyone. OOOOWAHAHAHAHAHAH!!!!"
- 4.) Extreme SPL dB Drag Racing logo includes these words in the heading: "Infrasound Extreme Car Audio"
- 5.) Virtual Bass, by Bass 305 tracks with 20 Hz and an "ultra boom experiment."

## High-intensity/low-frequency sound and infrasound are powerful forces, and governments have tested and used them as a weapon of war.

## For example:

- A.) "Acoustic Bullets. High power, very low frequency waves emitted from one to two meter antenna dishes. Results in blunt object trauma from waves generated in front of the target. Effects range from discomfort to death. A Russian device that can propel a 10-herz sonic bullet the size of a baseball hundreds of yards is thought to exist. Proposed fixed site defense. Also known as sonic bullets." (Source Glossary of Non-lethal weapons Terms, edited by Robert Bunker)
- B.) "Acoustic, Infrasound. Very low-frequency sound, which can travel long distances and easily penetrate most buildings and vehicles. Transmission of long wavelength sound creates biophysical effects; nausea, loss of bowels, disorientation, vomiting, potential internal organ damage or death may occur. Superior to ultrasound because it is 'in band,' meaning that it does not lose its properties when it changes mediums such as from air to tissue. By 1972, an infrasound generator had been built in France that generated waves at 7 hertz. When activated, it made the people in range sick for hours." (Source Glossary of Non-lethal weapons Terms, edited by Robert Bunker)
- C.) "And for thirty years already there have been experiments with infrasonic radiation weapons, with at least two experimenters suffering severe injuries (the Hungarian government reported that 'calculations have shown that the destruction of human beings would require considerably less expenditure by infrasound weapons than by any existing type of weapon of mass destruction.')" (Source New Armageddon Weapons)
- D.) "Acoustics. Intense, high power sound energy (in the ultra, audible, or infrasound ranges) that can cause disorientation, nausea, and extreme discomfort. May be potentially lethal. Not yet a mature technology." (Source Does Israel Have Non-lethal Options?, Updates from AIJAC)
- E.) "For example, infrasound generators, designed initially for crowd control, emit very low frequency sound waves that can be tuned to cause disorientation, nausea, and loss of bowel

Infrasound Página 7 de 8

control." (Source - LOOKING AT PEACE EDUCATION, by Roger Walters

F.) "Today, the US Department of Defense is testing acoustic rifles that can stun and even kill solders." (Source - Feel the Noise, by Jack Boulware)

- G.) "During World War II, Nazi engineers prototyped a revolutionary sonic 'cannon,' which fired a shock wave strong enough to bring down a plane." (Source Feel the Noise, by Jack Boulware)
- H.) Amplified music, such as Metallica, Sesame Street, and Barney tunes were used by the U.S. government in 2003 to break the will of Iraqi captives. The goal was sleep deprivation and playing music culturally offensive to the listener. Amnesty International objected to these tactics, saying it "may constitute torture and coalition forces could be in breach of the Geneva Convention." (Source BBC News, Sesame Street Breaks Iraqi POWs, 5/20/2003)
- I.) "Recently, psycho-acoustic warfare was allegedly used in the Waco siege at the Davidian compound in Texas, where it is said that the FBI used sounds of babies crying, dentist drills, and a variety of other unpleasant sounds to mentally influence their opponents. The Waco compound was allegedly bombarded for long durations by these sounds via large public address systems. Although this type of sonic assault can have a profound emotive effect on individuals, it relies heavily on the individual's particular experiences." (Source Acoustic Trauma: Bioeffects of Sound, by Alex Davies)
- J.) The Nazis, in WW II, used the same type of sound like boom car owners are using today! Hitler conducted noise experiments on prisoners and actually tortured them with high-intensity/low-frequency noise. In WW II, the Nazis didn't have the technology of powerful amplifiers that we do today. So, they developed a weapon that produced high intensity sound powered by "compressed air."
- K.) Unbelievably, the U.S. armed forces are starting to produce their own boom cars! They are trying to interest and recruit young males. One of these vehicles is a Humvee called "Mountain Thunder," and is used by the West Virginia Army National Guard. At least 10 states have ordered similar vehicles. The conversion of each Humvee is about \$25,000.00. Major Ron Garton commented on the Humvee and the current need for them in the war against terrorism in Iraq, "We've got a severe shortage of Humvees. We really needed to throw this one back into the inventory. They're a hot item right now." Had it been shipped with its sound system intact, Major Garton joked, "It could have had some psychological-operations possibilities." (Source A Hummer of a Humvee, by Rick Steelhammer; Sunday Gazetter Mail Online, 3/2/2003)
- L.) Operation Just Cause was launched on 12/20/1989 by U.S. troops. It was against Manuel Noriega in Panama. On 12/24/1989, Noriega had barricaded himself in the Vatican Embassy in Panama City. To flush him out, U.S. troops bombarded the Embassy building with "blaring rock and roll music (The Animals, Bobby Fuller, Bruce Springsteen) around the clock for several days." Noriega was forced out by January 4th. (Source The Growley, May 2003, Essays by Michael Gilleland, Musical Torture)
- M.) The prison system uses loud, amplified music to lower the morale of prisoners and prevent conversation by piping in "heavy metal or rap" from morning until night. Even the guards have to "bellow to be heard." (source Noise as a Metaphor for Koyaanisqats!, by Maya Khankhoje)

Armed with high-intensity sound (very high decibel levels), low-frequency sounds (bass), and deadly, destructive infrasound (frequencies below 20 Hz), boom car owners threaten public health welfare and safety!

Infrasound Página 8 de 8

Home | Hearing | Decibels | dB Drag Racing | Safe dB Levels | dB Meters | Frequencies | Infrasound Reacting to Boom Cars | Vibroacoustic Disease | Highway Safety | Property Values | Boom Cars and Crime | Resources