

Down with infrasound

According to Standard definitions, infrasound is:

*Acoustic oscillations whose frequency is below the low frequency limit of audible sound (about 16Hz).*¹

This is, of course, just one of the many erroneous ideas attached to infrasound. Hearing thresholds have been measured down to 4Hz for chamber listening, where the threshold is 107dB² and even lower for earphone listening³, showing that infrasound is audible well below 16Hz if levels are high enough. Limiting the measurement of hearing contours down to only 20Hz, which was mainly for experimental reasons and the need to comply with the restrictive definition of the Phon, has probably led to the misconception that frequencies lower than 20Hz are not audible and hence are “infra - sound”.

There is however, a well established and much respected field of study for infrasound. This is in the very low frequency meteorological area, where naturally occurring sounds of frequencies from about 0.001 Hz to several hertz are routinely measured. There are more than 60 infrasound listening stations spaced around the world, set up to detect sound from airborne explosions, in order to keep a

check on compliance with the nuclear test ban treaty. Additionally, geophysical stations watch out for vibrations from any underground explosions. The infrasound stations also pick up infrasound generated by meteors, avalanches, waves from the sea, large fires and any other source which puts slowly fluctuating energy into the atmosphere. These are real infrasound.

Where people are concerned, there is a fuzzy boundary between low frequency noise and infrasound, where low frequency noise is from about 10Hz to 100Hz, with a possible extension by an octave at each end of the range. So in order to get away from some of the half-brained ideas associated in the public mind with infrasound, for example in relation to wind turbine noise, we suggest that, in scientific discussions concerning human perception, the term “infrasound” is avoided and replaced by “low frequency noise” or “low frequency sound”, with an indication of the frequency range under consideration.

Infrasound could then be reserved for investigations of very low frequency atmospheric and similar sounds, which is where it belongs.

Is anybody listening?

¹IEC (1994): 60050-801 :1994 International Electrotechnical Vocabulary - Chapter 801: Acoustics and electroacoustics

²Watanabe, T., and Møller, H. (1990): Low frequency hearing thresholds in pressure field and free field. *Jnl Low Freq Noise Vibn*, Vol. 9, 106-115.

³Yeowart, N. S., Bryan, M. E., and Tempest, W. (1967): The monaural MAP threshold of hearing at frequencies from 1.5 to 100c/s. *J Sound Vibration*, Vol. 6, 335-342.

RED ARROWS

Akrotiri residents (Cyprus) complaining about noise levels of military aircraft are unlikely to be able to pressure the British bases, either into giving them compensation or putting an end to the noise, according to an aircraft expert. Residents of Akrotiri village said they would take measures against the bases, whose aircraft they claim are noisy, with vibrations allegedly damaging their homes. The complaints have increased since the arrival of the famous Red Arrows, which will be flying three times a day during their six-week training period. The issue comes at a time when the EU has censured Cyprus for failing to ban old Russian charter planes that breach Community noise level rules. "Military planes are allowed to be as noisy as they want according to the law, because they have engines which are designed to make them go very fast and accelerate quickly," said David Learmount, the safety and operations editor of Flight International magazine.

GUN CLUB

When George Hanna opened up the Buffalo Creek Trap Club on State Highway 64 in Van Zandt County earlier in 2006, he hoped it would provide pleasure for a lot of people who enjoy trap shooting, and it has. However, some of the neighbours around the new trap club are very unhappy about the noise caused by all the shooting. Some of the residents in the area have been advised by a real estate agent that the noise will decrease the value of their property, and that a "noise disclosure" would have to be included if their property is listed for sale. So, protesters have asked the county to adopt a noise pollution ordinance. However, Van Zandt County Judge Rhita Koches said, "Counties do not have ordinance-making authority." She said county judges, on numerous occasions, have asked the state legislature to pass bills giving counties the authority to pass ordinances, but to no avail. Precinct 4 County Commissioner Ron Carroll said there are laws that protect the rights of shooting clubs to exist. Carroll provided copies of the Local Government Code, Chapter 250, which states: "A person may not bring a nuisance, or similar action against a sport shooting range based on noise..... if no applicable noise ordinance, or rule exists."

A PROFITABLE ORDINANCE

In 2005, Aurora, Illinois issued more than 500 citations under the a new set of noise ordinances adopted in June 2004. If a police officer claims that a motorist is making a noise that can be heard 75-feet from the vehicle, the officer will confiscate the car and impose more than \$485 in various fees, charges and penalties. So far, the city has raised significant funds under the ordinance and plans to use undercover officers in "sting" operations to generate even more citations in the future. Seizing five hundred vehicles would generate nearly a quarter-million from the \$250 impound fee, \$75 ticket, \$30 "vehicle release" fee, \$130 towing fee and \$20-25 per day storage fee after the first 24 hours imposed on each cited motorist, a portion of which goes to the towing company involved. The city also has a an excessive noise ordinance that applies to motorists and pedestrians that carries a minimum \$250 ticket for the first offence, \$500 for a second offence. These citations apply to hundreds of different situations outlined in a 3000 word statute. Churches could find themselves ticketed if the sound of chapel bells "continues for an unreasonable amount of time." Even talkative parrots could find themselves the cause of a ticket under a provision that covers "Unreasonably loud and raucous noise emitted by an animal or bird for which a person is responsible." The city government, however, is free to make noise with blanket exemptions such as one excluding "Any event that is sponsored by and directly controlled by the city or its designee" from penalty.