



ELECTRONOTES

WEBNOTE 53

2/27/2018

ENWN-53

Checklist – Typical Hum

-by Bernie Hutchins

It seems clear that in addition to a traditional, well-defined “Worldwide Hum” (“The Hum”) [1-11], there are many varied, distinct, and mainly localized (and prosaic) pretenders that confound our study. “The Hum” is classically the sound of a diesel truck up the block – it follows the hearer over vast distances, is very rarely heard by others in the same room, and can be ever so briefly interrupted by a headshake. The Hum is never recorded/displayed, so a “real” (acoustic) component is unknown. A source is never found. Perhaps 2% of the population hears it, and of the comments posted here [12], VERY roughly half involve The Hum.

Pretenders - real trucks, generators, pumps, transformers, etc.- (roughly the other half of comments), have varied characteristics that are not usually very similar to those of The Hum, often leading to unwarranted confusion and conflict. In such cases, there is probably a “real sound” that is localized to a house or neighborhood (does not travel with the hearer), is NOT interrupted by headshakes, and IS heard by several - most everyone in a room. Happily, such menacing sounds are also rare, and potentially their localized sources can be identified and remediation seems possible. Evidently, a Hum Hearer would also hear any local pretender, thereby confounding any investigation. This is particularly true in that while The Hum has become standard, the manifestations of pretenders are diverse and each potentially unique.

To suggest that an observation is inconsistent with a mainstream version of “The Hum” is NOT at all suggesting a personal failing! Who wants the Hum! (Rather it is likely good news that a remedy may be at hand - in that case.) Neither should an individual insist that any of his/her personal observations (from a pretender camp) that are at variance with the mainstream Hummer checklist means that the vast majority of such traditional Hum hearers are misguided (or arrogant). To some extent, likely we are all dogmatic, but let us also be aware of the apples/oranges issues. Is there even an agreed-upon checklist? Here is an attempt:

ENCOUNTERING THE TYPICAL HUM

– TESTS YOU ARE BETTER OFF FAILING

(1) SURELY IT'S A TRUCK. It's quiet in your house, appliances off, no TV, perhaps late at night, and you hear a rumble somewhere in the distance – surely a utility truck idling during a repair. Perhaps you ignore it the first night. Eventually you walk about your home, but never get closer or further from it, or find anything buzzing. Eventually you look up/down the block. Strangely you probably find you barely hear it outside. You have tried VERY hard to find the source of the sound (perhaps even over an extended area), but not found a thing.

(2) YOU ARE ALONE! You ask someone else in your home what they think the humming is? Typically, they hear nothing. You know the Hum is real but others suppose your imagination is in play. Very few people hear it (perhaps 2%). So, if nearly everyone at home hears the hum, it is probably a real sound, NOT the 2% Hum (simple probability). Look harder for a motor, a vibrating supply pipe, a neighbor's air conditioner, even a loose panel on a power transformer.

(3) DOES NOT BLOCK LIKE ORDINARY SOUNDS: Pillows, earplug and the like do not work. But distractions such as a bathroom fan left running may MASK the Hum.

(4) SHAKE IT AWAY [6, 9]. Now do the following test: When the environmental noise is generally quiet and the Hum is “booming” shake your head vigorously (as you might in refusing to eat a third jelly donut offered!). If you can shake for say, five seconds, did the Hum stop during the shake? Hard to tell? And anyway, if it went away, it came back ALMOST immediately. That's the point, you know it went away because you hear it come back. Shake a half-dozen times. Do you reliably hear it come back (ramp back up) after a half-second? It's a lot like shooing away a pesky gnat, you think he's gone but is in your face again in a half second. If you can stall it for a fraction of a second, reliably, you pass this test. It's a diagnostic tool – not a remedy.

(5) PITCH MATCHING [11]. Give it a good try, humming the pitch yourself if you can (although a fine singing voice is not required, try this with nobody home!). If you find you have to “buzz” your throat to get even nearly in tune, this is typical. Typical pitches are 30 to 100 Hz – in the lowest two octaves of the piano. Eventually try an online tone generator. If it's say, 56 Hz or 64 Hz, that about what we expect. If it's exactly 60 Hz (US/Canada) or 50 Hz (rest of world), or twice these frequencies, you might want to look more at power equipment. If its 440 Hz, look for an orchestra tuning on your lawn – the point of the joke here being that the Hum is octaves below 440 Hz. If it is pitched well above the orchestra it is not the Hum, but likely ordinary tinnitus (ringing in the ear).

(6) IT'S NOT ALWAYS THERE? Well, the Hum probably is there waiting 24/7/365. Fortunately, you ignore it (distracted) or it is masked out (overwhelmed) by even relatively low-level environmental noise (street traffic, weather, office noise, TV, conversation, birds). But is it ever NOT there when you have determined it is quiet enough and you actively try to hear it? If it's really the Hum, probably it is still there.

(7) While it seems to be always there, demanding or on demand, it may seem to vary night to night, or even on intervals of a second or two, but not exactly periodically, but randomly. That is, it may "surge" which is why it sounds even more like a truck.

(8) If you do travel, particularly for journeys of hours, particularly by air or over mountains, was this travel followed by several days without the Hum in circumstances where you normally experienced it? This test is of course not one you can necessarily do easily, or quickly repeat.

This is a test for the traditional Hum. Feel free to disagree. If you agree with most of the items, do you have additions or comments? If you disagree with most of these, or even just one or two, that probably just means you are not a traditional Hummer, and others here envy your more favorable position.

INDICATIONS

If you "fail" one or more of the tests (like five people in a room all hear it and it is not heard a block away), carefully consider that your hum may be a pretender. That's good. In such a case, redouble your efforts at walking round searching for (diligently listening for) the cause. One hallmark of being serious is a conscientious effort at searching for a true source.

In regard to advise about investing in expert help and/or equipment, keep in mind that if you pass the tests of a traditional hearer, it may well be the case that there is nothing to find from an engineering angle.

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