

The Mystery of a High-Pitch Sound

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This is a true story. It began on August 24, 2012. When I heard the kitchen timer beep, I rushed there, stopped the timer, and then removed from the oven the roasted green pepper (which was picked at a local organic farm and looked rather pale, almost white). As soon as I returned to my desk to continue working on the computer, I noticed a high-pitch sound. For some reason, I thought that the sound was from the same kitchen timer. But when I got there, the timer was completely turned off and I was still hearing the high-pitch sound. The sound was about 20kHz and continuous without any sort of modulation at all. It was similar to the alarm of the water leak detector placed in the basement. So, I went downstairs and checked the detector. I was hearing the mysterious sound all the way to the basement, but it wasn't from the water leak detector. It normally makes an extremely loud sound and this mysterious high-pitch sound was rather soft. I realized that the detector was not generating any sound at all.

Then, I thought that the sound might be from a smoke detector in the basement. This particular smoke detector is not accessible because it is concealed inside the basement ceiling, presumably installed by the previous owner of the house. When the smoke detector battery became low, it started to beep just a short burst, not at all continuous. It beeped just once in a while. As the battery continues to drain, it beeped less and less frequently. Since we didn't destroy parts of the basement ceiling, we didn't try to reach the smoke detector. We were hoping that the battery will eventually die out (there is no safety concern here because we have another smoke detector in the same area). When I went to the basement, I thought that this continuous high-pitch sound could be a different kind of low-battery warning from this concealed smoke detector. But while I was checking, the concealed smoke detector did sound the familiar, short beep. So, the mysterious sound cannot be from the concealed smoke detector. I then thought that this mysterious sound might be from another, older smoke detector somewhere in the house. So, I checked other smoke detectors in the entire basement. None of them seem to generate the sound. Even though I was hearing it continuously, it was surprisingly difficult to pinpoint the origin of this mysterious high-pitch sound.

After I returned to the main floor, I sat in my chair and started to think. It was really strange that I was unable to locate the source of the sound. It is supposed to be easier to identify the direction of a high-pitch sound than that of a low-pitch one. That's why audio systems have only one sub-woofer. Why was I having such a difficulty? In order to take advantage of this point on directionality, I moved my head. I noticed that the sound level changed as I moved my

head, but I was still unable to identify which way the sound come from. I thought that if the sound had been modulated or pulsed, it would have been easier. I recalled the time I designed and made an infra-red parking position sensor for a Camaro I used to drive. This was because it was rather difficult to judge the appropriate parking position due to its body shape. To be able to detect the proper level of reflected signal, I intentionally modulated the infra-red signal with an audible frequency. Then, I was able to use the presence of this audible sound to indicate the presence of the reflected signal.

At this point, I asked my wife and daughter about the sound. Initially my wife had difficulty hearing it. Since my wife has difficulty hearing high-pitch sounds in general, it was not surprising. I know that this mysterious sound was near the highest end of the spectrum we humans can hear. But my daughter was able to hear it. Eventually, even my wife started to hear it as well. So, the sound was real, not just in my head. Next, I checked the entire main floor. I was able to hear it everywhere. When I went to the hallway leading to the garage and the basement, it seemed louder. However, when I opened the door to the garage or the door to the basement, it was not any louder. When I went to the main bedroom, I heard it clearly. I checked the laptop computer there; I thought it might be coming from it. But that was not the case. Now, it was the dinner time, which took a while with our daughter setting the table and so on. During the dinner, I was still able to hear the sound, but we didn't pay much attention to it and enjoyed the dinner.

After the dinner, my wife started to do a web search on "high-pitch sound." Then, she suggested to turn off all the circuit breakers. I said that this sound is probably not coming from an AC-powered device. My feeling was that the sound was from a battery-powered device. Nevertheless, I went to the breaker box. I was still hearing the sound right there. So, I thought that it would be easy to test. I shut down all the breakers one by one. Our computers are on battery-backup units; so, we didn't worry about them. However, whichever circuit breaker is shut off, I was still able to hear the high-pitch sound. The sound cannot be from an AC-powered device, possibly except for the computers and some other electronics connected to the battery backup units. So, I turned off our computers and shut down the main breaker for the entire house. The sound was still there. At that point, I was convinced that it was from none of the AC-powered devices.

Our house is a ranch. So, the attic extends above all of the rooms. I thought there must be some smoke detectors up there. If one of them is making this sound, it is possible that we could hear it all over the house. So, I went to the garage, from where I can reach the attic. In order to do that, I first needed to move our car out of the garage and bring our new 10-foot ladder from outside. When I got in the car, I heard the same high-pitch sound. It was strange. Normally, the outside sounds would not be clearly heard in the car unless it was very loud. Still, I wanted to check the attic first. So, I set up the ladder and peeked into the attic. Even the 10-foot ladder is a little too short and I cannot easily get into the attic. When I peeked into the attic using a flash light, I saw at least two smoke detectors. Although I still heard the high-pitch sound, it wasn't

any louder even at the entrance of the attic. Since getting in there is a big deal, I figured it was not worth checking those smoke detectors any more.

I removed the ladder and returned the car into the garage. Now, I realized that the sound was audible even when the car was parked on the driveway, away from the house. This is very strange. I got into another car of ours parked on the driveway. The sound was still there. Why? So, I tried to listen very carefully when I got out of the car. I thought I was still able to hear the sound, albeit very weak. Maybe, it was softer only because the outside noise on a summer day was louder. Could it be something happening all over the area? It was a warm summer day and there seemed to be nothing unusual. Just in case, I drove the car in the town. Strangely enough, the sound was audible wherever I went. I really wanted to call our neighbors but hesitated.

When I checked the time on my Timex watch, I noticed that the buttons wouldn't work. But the analog hands are moving and the time was correct. So, I didn't pay much attention. Instead, I started to suspect the existence of some sort of strange force affecting the entire neighborhood. Next, I too did some web search. I was curious if there was anything unusual happening in the area. Nothing was found. I also reconsidered the possibility of tinnitus, but this was unlikely because both my wife and daughter also heard the sound.

At that time, my wife was helping our daughter take a bath. When I opened the bathroom door, they said they didn't hear the sound there but heard it when I opened the door. I told them that it would be natural not to hear the sound when our daughter was making noise in the bath. After getting out of the bathroom, my daughter told me that she did not want to sleep with that sound. My wife said that the sound is loudest in the family room where I was using the computer. Although I didn't tell them, I was actually thinking that I would be able to sleep even with this sound. This is because I have been practicing mindfulness meditation and thought that I would be able to let it go. Still I felt sorry if my daughter had to sleep with the sound.

After changing into my pajamas, I went to the main bedroom. To my surprise, I didn't hear the sound there any more. I went to the hallway leading to the garage and the basement, the opposite end of the house. There was no sound there either. Now, the sound is audible only in our family room. My daughter was glad. Frankly, I was a little disappointed because I thought it would be a test for my ability to sleep with that sound. At that point, I was thinking that the sound must be from one of the smoke detectors in the attic. The battery must be dying and thus the sound is audible only in the family room, which is at the center of the house. I thought I could check them the next day. Of course, this does not explain why I heard the sound in the car on the driveway and even driving all over the town. But it didn't bother me any more because the sound is finally winding down.

We all slept well. I woke up at around 5:30am and started a session of sitting meditation. The high-pitch sound was still there. With some deepend concentration during the meditation session, I was still aware of the sound. Then, I noticed that the sound changed from the

continuous tone to some sort of "struggling" sound. I thought that the battery of the smoke detector was finally dying. However, with this kind of modulated sound, it was easier to locate the source of the sound, even while meditating. The sound was not at all from the attic. It sounded closer. Once the battery of whatever the device is completely dead, I might lose the chance of locating the source. So, I stopped the session and started to locate the source. The only electronic device in that direction, I thought, was an antique camcorder, unused for years. The sound wasn't from there, though. Then, I realized that it was from my Timex. The buttons didn't work. So, I tried to reset it by pressing all the four buttons at the same time. The watch started to work normally and the mysterious high-pitch sound had finally stopped. I didn't realize the sound source because I wear it on my pants belt.

