

Bumps in the Night!!!!

July 2013 Issue

Tools of the Trade

Beginners Guide to Audio Data Review

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This is a quick introduction to the process of Audio (digital) data review. Each investigation team may have different rules and process that may differ slightly from how we do things here at TnT, but the overall process should be very similar. Many of the ideas below are personal preference and should be adjusted to what is comfortable to you. We will discuss audio file formats in an upcoming article, but for now we just mention the 2 most common digital audio file formats are .wav and .mp3 format and the process to review either is the same.

- **Hardware:** Digital audio review is done on a computer, so naturally you need one. This can be desktop or laptop, and should have enough free disk space to temporarily store the audio file(s) that you will be reviewing. A high-res 2 channel (stereo) audio file can consume approximately 2GB per hour of audio (35MB/min). Memory (RAM) is consumed by the audio application (app) as well as other apps you may have open. Low memory will impact the performance of the system and can cause choppy interfaces and application crashes, so good rule of thumb is **more is better** (i.e. 8GB+). Also needed will be a good pair of comfortable headphones. Three main types are 'Around the ear', 'On the ear', and 'In the ear' (earbuds). I prefer 'Around the ear' headphones since they are the most comfortable and help minimize external sounds.
- **Software:** Acquire and become familiar with the Audio software that you will be using. At TnT Paranormal, we use a popular shareware (free) audio application called Audacity (<http://audacity.sourceforge.net/download/>) that is available for Windows, Mac, and LINUX. For consistency, the team should all use the same version of the same application. For this article we will use Audacity in all examples.
- **Setting:** Pick a comfortable location and time of day with minimal distractions. For me, it's later in the evening when everyone has gone to bed and it's quiet in the house. Prepare the drinks and snacks that you may want but keep in mind the noise from crunchy chips, etc. will distract.
- **Prepare:** Review the case information (diagrams, floorplans, photos, etc) as to where the recorder was located and what objects are near that may be making noise (i.e. Recorder is on kitchen table but 8' from refrigerator with a noisy icemaker). Check the investigation logs and note when quiet time starts/stops and when the rotations are and who are in them.

OK, now that we have the basics out of the way let's get started.

Open the audio file but before you hit play there are a few things to check and set.

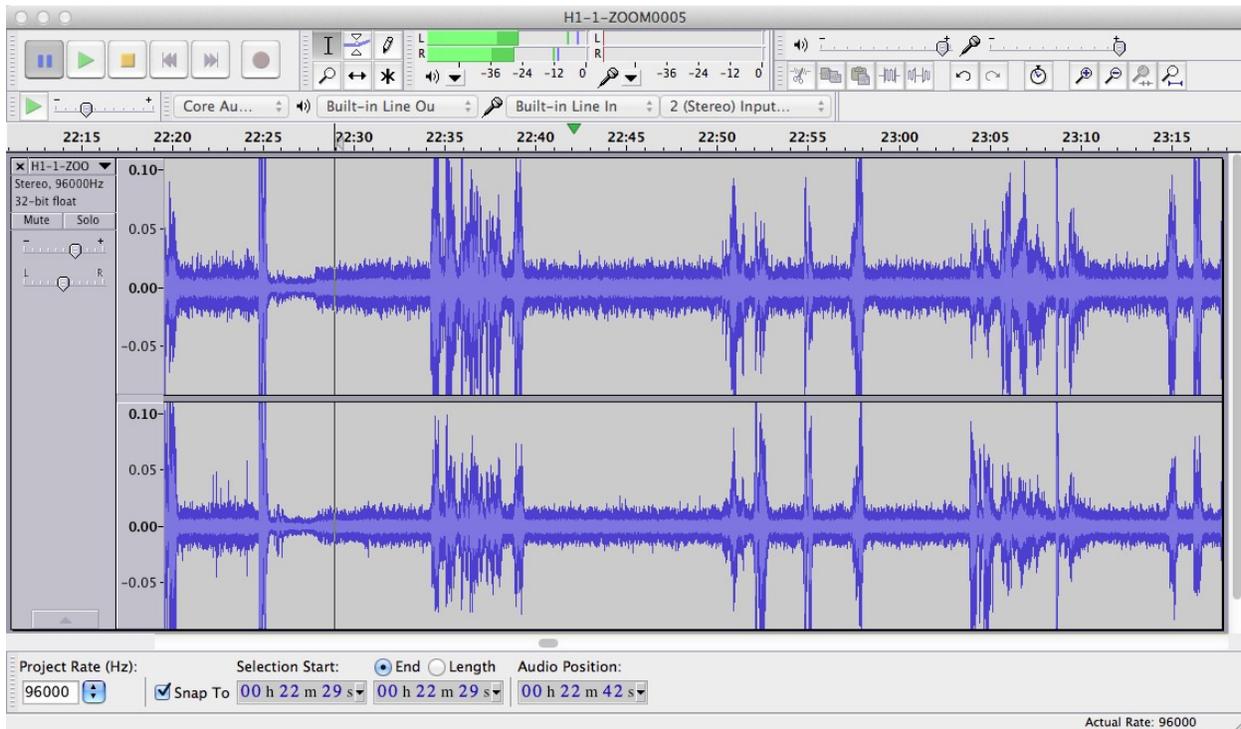
- Review the Key bindings (Preferences/Keyboard) for the application to see what keypresses do what. My keys are set so the Spacebar pauses the audio so when I hear something interesting, I can smack the spacebar and freeze things to make a mental note of the timestamp and then backup to review as needed.
- Press the 'Zoom In' icon (Magnifying glass with +) so you can visually see the audio tracking as it plays. I generally click in 5-6 times so the audio increments at around 1 sec per tick mark.
- The waveform scale on the left can be zoomed to enlarge the audio waveform. I normally expand it from 0.10 to -0.10 (L-Click zoom in, R-Click zoom out).
- Increase the gain (as needed) to your preference. I normally set to +10db.

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Audacity

We are now ready to start reviewing. Hit **play** and let the fun begin!! Below are a few tips as you perform the review.

- As you review, hit **space** to pause and **space** again to un-pause. Keep in mind that the play button will start where the last audio marker was at so always keep a mental (or written) note of where you are in the file to avoid losing track of where you were and having to re-listen to large chunks to find your place.
- Take a written note of normal noises and their causes so you can cross-reference with similar sounds later in the recording such as an Ice Maker for example.
- Take a written note of any personal experiences you hear the investigators talking about and specify if you did or did not detect any audio to support the claim.
- Take a written note of when people (along with their names if known) enter/exit the rooms for later cross-referencing if needed.
- Use team procedures to report any audio that 'may' be paranormal. At an absolute minimum you will need: Who, What, Where, and When. Be as detailed as possible.
- And finally, if you find yourself falling asleep or losing focus, take a break. Many find it useful to do something visual as well while listening to the audio such as surfing the web (sound off on the browser of course).