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## FAQ'S Page

I have received a lot of questions about what I do, how I do it, and what it costs. The following facts should be helpful.

### **Question: What do you charge for your services?**

I have a rate sheet which I send to all inquiries I receive by email, regular mail, or phone. If you wish to have a copy, please let me know and I will forward it to you.

### **Question: Why do you charge to review a recording?**

If you choose to send me recorded materials for analysis, voice ID, authentication, or other services I provide, I must first hear and analyze the material to make several decisions about what Forensic Sound can provide in the way of services. It is necessary for me to document all materials I receive in order to provide a "chain of evidence" should I be called to testify in a case and to protect you, my client. I photograph all materials, make photocopies when appropriate, log time and date information, and most important, enter the recordings into my system. Even if the recordings are only a few minutes in length, all of the above steps must be accomplished before any decisions can be made. The time it takes to accomplish these above procedures is usually from 1 to 2 hours.

### **Question: Can you always successfully recover voice content from bad recordings?**

Not always. Sometimes the recorded material lends itself to processing for enhancement. Other times, the recorded material is so bad technically, that I may only be able to recover only 20 or 30% of the desired content. This is another reason that I must review the material to give you a more accurate appraisal of what can be achieved.

### **Question: Can I skip the review costs and just have you work on the recorded material.**

Absolutely! I will start billing when I receive and process the materials. You will incur my basic hourly rate for tape enhancement.

### **Question: How should I ship materials to you?**

There is a file on shipping procedures on the PDF files page on my web site. Also save the "Job Manifest" file and include two copies with your materials as stated in the shipping information

**Question: Can you work with a copy of the material or do you need the original?**

I can often work with a copy for initial investigation. However, it is always preferable to have the original recording, as copies usually introduce additional noise or distortion, making it more difficult to achieve the best results. For legal purposes, I will need the original recording to reach my final conclusions. In the case of "Authentication" of a recording, it is mandatory that I have both the original recording and the device on which it was made to achieve accurate results which can be used in court.

**Question: Do you do video analysis and processing?**

At this time, I do not offer these services. I can process audio from a video and provide a copy of the video with the enhanced audio. I have few calls for video processing and cannot justify the cost of the equipment, hardware, and software needed. However, I can put you in touch with peers in the field who can provide these services.

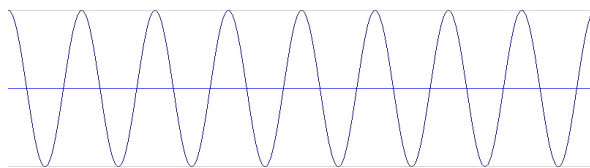
**Question: How long will it take to process my recordings for enhancement?**

I cannot answer that question without knowing the content of the recording. Several factors include length, difficulty in processing, and desired results. Some recordings are simple to process for enhancement. Others require multiple processing steps to achieve the best results. I know that I continue to state the fact that I must hear the recording to know what I have to do to achieve the desired results. As a very general rule, enhancement will take from five to seven times the length of the recorded material.

**Question: What is involved in "Voice Identification" ?**

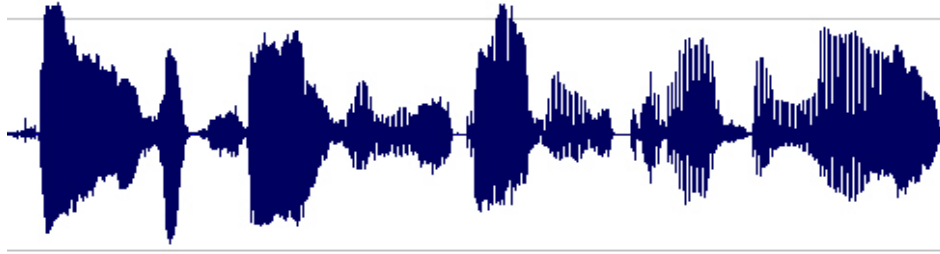
This is a much more complex process. Besides the original recording, I will have to acquire samples of a "known" voice believed to be the "unknown" voice on the existing recordings. Someone suspected of being the "unknown" voice can be subpoenaed to provide recordings of their voice if necessary. I would conduct the session in person or in conjunction with a recording studio in your area. In simple terms, the recordings of the "unknown" voice are then analyzed and compared with the samples of the "known" voice. It can be thought of as a "voice fingerprint". I will explain the details of the process should you require that service.

**Question: What do you mean by "Hz" or frequency response?**

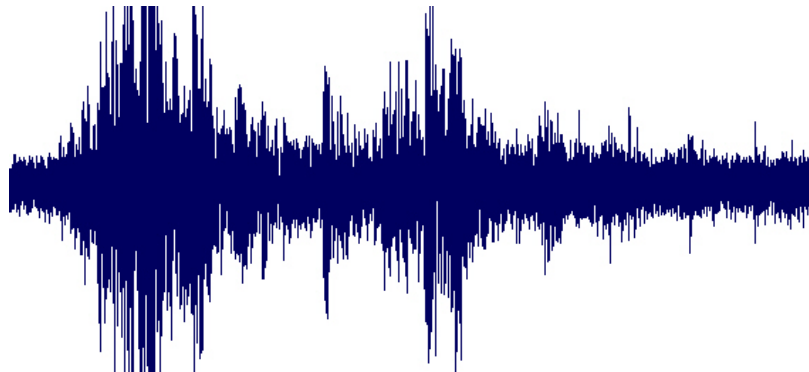


The sound wave shown is said to be "periodic" in that it is symmetrical and repeats with a specific frequency. This is also known as a "pure tone". In the real world, very few sounds having this characteristic are found. A few instruments, including synthesizers, some wind instruments, some string instruments, and specific devices designed to produce a pure tone, can generate this waveform. In the real world, most recordings are composed of many "complex waveforms".

Following is what is called a "complex waveform". It contains many frequencies and is not periodic in nature. This waveform was produced by an isolated recording of a female voice.



Below is a typical waveform of material I am asked to analyze and/or process. Note the increase in complexity over the clean recording of the voice above.



The spoken voice may contain frequencies from 50 Hz to 16,000 Hz. All sound sources usually produce "complex waveforms". These include noise, speech, musical instruments, vehicles, machinery, and a host of other sources. In the forensic process, an attempt is made to isolate the desired frequencies (usually voice) from the undesired frequencies (noise). Since most sound sources produce many frequencies, a recording will contain multiple overlapping information from all the sources that were recorded. In the analysis and processing of recorded material, where the requirement is usually to isolate one set of information, (voice) it becomes very difficult depending on the content of the recording.

My favorite example is that you ask me to make a chocolate cake. When I had finished the batter, you said, "wait, make it a lemon cake". I cannot just take the chocolate out of the batter and replace it with lemon. The batter is a composite of all of the ingredients and it is impossible to just remove one item and replace it with another. The same is true with a complex recording. It is virtually impossible to remove or isolate just one item such as the voice. It is possible to enhance and partially isolate the desired content. The degree of success is directly related to the content of the recording.