

How to Record Audio Tracks

Producing high quality recordings can be challenging, but the information here can help you overcome the challenges and enable you to produce good sound tracks to go with your translation.

Basic Requirements

There are a few basic requirements necessary to produce high quality recordings. Proper equipment and space are essential.

Space

There are two main enemies of a good sound recording. The first is noise from outside. The second is reflected noise inside the room. You will need to find a room where noise and reflected noise are minimal. Audio studios produce high quality recordings because they address the noise problem very well, but hourly rental fees are prohibitive. For instance, it can take between eight and ten hours to produce a sound track for a one hour sermon. You might consider renting a studio once or twice, but if you plan on recording several recordings, renting a studio will not be feasible.

Some good alternatives to renting an audio studio are to use a room in a church or in your home, if you live in a very quiet neighbourhood or out in the country.

Checking a Room for Acceptable Noise Levels

To check a room for acceptable noise levels, set up your recording equipment and turn it on. If the signal from the microphone is around -40 decibels or below that when no one is talking, you should be safe to use the room for recording.

A microphone input of -30 to -20 decibels or above that is unacceptable. Your recording will have too much background noise. You will need to consider another place.

Reducing Reflected Noise

When you speak into the microphone, your voice will bounce off the hard surfaces in the room, like the walls and ceiling. These reflected sounds will be picked up by the microphone. You can reduce the energy of reflected noise by adding sound-absorbing items to the room. A carpet on the floor, some big plush toys, and soft furniture will reduce the reflected noise picked up by the microphone.

Reducing Resonance

Parallel surfaces create resonance at certain frequencies, depending upon the distance between the surfaces. The smaller the distance, the higher the resonant frequency. Most rooms have three pairs of parallel surfaces: ceiling - floor and two pairs of wall - wall. So you may get three overtones added to your voice on your soundtrack.

Unfortunately, there is no cheap way to get rid of these resonances. People often wonder why the quality of their home recording is so poor when they have good equipment. Often the resonance in the room is the problem.

The good news is resonance can often be reduced electronically without affecting the voice recording. If you have a low, bass voice, you may have problems reducing resonance electronically. Otherwise, you should be able to produce satisfactory recordings at home.

Equipment

Some basic equipment is needed for recording audio tracks. The following information will help you choose the right equipment.

Choosing a Microphone

For home use I recommend an omni-directional electret condenser microphone with a small diaphragm. I have several different microphones and the AKG C1000S is my favourite. You can also use a headset, but it is hard to find a budget model with closed headphones. Moreover, you should avoid touching the microphone during the recording and it is hard to avoid producing noise when you are using a headset.

If you have not done much recording before, buy an inexpensive microphone. Many inexpensive microphones are fine for home recordings. Once you have gained some experience, you may want to invest in a better quality microphone, but when you are just starting out, you should try to keep your costs down.

Microphone Pre-Amplifier

It's a good idea to buy a microphone pre-amplifier, or mic pre-amp. The sound card on your computer may have one, but it is best to have a stand-alone pre-amp.

The purpose of the pre-amp is to boost the microphone signal up to a standard level of 775mV. Without this optimal level of amplification, you will not be able to transfer the good signal from your mic to your computer.

Microphone Compressor

The range of the human voice varies widely from the quietest sound to the loudest. These variations can cause digital overload, which sounds very unpleasant. Adjusting the input level of the mic to avoid this overload generally results in an unacceptable recording. A compressor will reduce the difference between the lightest and strongest signals and will raise the average mic input level without causing digital overload.

Other Equipment

Limiters - reduce casual peak signals and help to eliminate all spikes.

Equalizer - is used to correct some voice defects.

De-esser - helps eliminate sounds like “ss”, “sch” etc.

Noise expander/gate - helps reduce unwanted noise traveling through the mic to the recorder and allows you to set a threshold for acceptable noise.

The good news is that you don't have to buy all of these things separately. There are specifically designed voice processors that include all of these functions. For example, I use a model produced by Harman called the dbx® 286A Mic Preamp and Five processor, but there are others such as the [Symetrix 528](#), which are also good. A used sound processor may cost between \$100 to \$300.

There is other equipment that is nice to have, but not essential for starting out. At some point, you might consider buying an analog to digital converter, or ADC, and a voice editor-multitracker along with software that allows you to do multi-track recording. Examples of software for multi-track recording are Cubase, Cakewalk, Logic Audio, Samplitude, and others. Freeware software is also available online.

If you want to use headphones, they should be the type that are closed up. I use Sony MDR-XD100 which are inexpensive and work fairly well.

And that's about it. The approximate investment into the business will be around \$300 - \$500.

Procedure

1. Tune up your equipment before recording. Remember, there is no way to improve poor sound in the computer, so you must create a good sound before putting it into your computer. I recommend using an analog voice processor for recording for optimal sound production.
2. Set up your mic about three to five feet away from a corner in your recording room. Cover the corner with some thick material like a carpet or heavy blanket.
3. Keep your computer out of your recording room in order to reduce the noise. The keyboard, mouse and monitor are all you need to have in your recording room.
4. During recording try to keep the distance between your mouth and the mic about two inches. This will help produce a high enough signal/noise rate for clear recording.
5. Do not speak directly into the mic, but keep the microphone slightly to the side of your mouth. Do not move your head too much as you read. Even if your mic is

- omni-directional, head movement while speaking will change the sound noticeably.
6. Open the preliminarily extracted audio file in your recording software. Set up your project with the same frequency as the source audio-file. Generally, it is a good idea to use 44 kHz/16 frequency to avoid mixing with different files.
 7. Reduce the sound level of the source audio file down to around -30db and use it as a reference track. Follow the transcript closely to catch any errors you may have made and make corrections before going on to the next step. Do not read all the text at once, but rather record it phrase by phrase or one paragraph at a time. This way, if there's a problem, you will not have a lot of work to re-do
 8. If overload occurs during the recording session, simply rewrite the take.
 9. Remember to save your work from time to time during recording. When you have finished recording, convert your voice track into a Waveform Audio file or, wav file, and save it. This file will go to a video editor for making the final mix.

Be patient. Good results require experience and much practice.

Blessings!
A. Dmytruk