

Chapter 3 - Packaging Your Production: Recording Basics

Recording Basics: You don't have to spend a ton of money to record your sound, regardless of what others tell you, and sometimes the best sounds are produced through very cheap recording devices. Cassette players (yes I said it!), video cameras, mobile phones, guitar processor recording devices, web cams, and even the computer you are reading this page on can do the trick! All you need to know about recording and packaging your production (even just to listen back yourself) is included in this highly-detailed section!

- a. Gear and Effects - This is all based on your style. In this tutorial I will cover the various gear and effects that you can use to achieve the sound you're looking for - ALL on a STRICT budget! I won't tell you to go buy a \$500 processor or a \$2,000 guitar. We're talking cheap here!

Using a cassette player:

Do you happen to have a cassette player collecting dust in a closet? Sometimes this simple device is highly-effective for quick brainstorming sessions. Let's just hope you can still find cassettes!

If you DO happen to have a cassette player, there are a few ways in which you can record your sound.

1. Open Air Recording: This method is simple because it requires nothing more than the cassette player and your guitar. Of course, your cassette player will need to have a record function.
2. Closed-Mic Recording: If you DO have access to a microphone, you can use this method. Odds are though that the end of the microphone will be a larger plug than the one provided with the cassette player. You'll need an adapter that converts the larger plug to a smaller plug. This can be found at local supplies stores such as Radio Shack and sometimes Wal-Mart. If you don't have access to a microphone, or simply can't find an adapter, you can also use stereo headphones. These headphones can be inserted into the MIC jack on your cassette player and will actually pick up your voice. Even a cheap \$1 headphone will work. Of course, the high end headphones will produce a better sound. If you are using the cheaper series of headphones, you can actually remove one of the earpieces from the headset. Choose the earpiece that is OPPOSITE from your listening ear and remove it. Keep the wiring intact, and simply separate the two joined cords to give you more room. One end will now become your vocal mic, and the other end can be inserted into the acoustic guitar sound hole to pick up the guitar. You can angle your headphones (with the head strap of course) so that the vocal part of the mic touches the side of your mouth OR, depending on the quality of your headphones, you can also arch the band over the middle of your face, so that the mic is centered with your mouth. While you won't be getting the highest-quality sound in terms of recording (actually quite terrible), this method is the cheapest way you can possibly go without the aid of other devices, which will be covered next. The best part is that you'll pick up both the

vocals and the guitar at the same time. Your voice will be quite centered in the recording, but it's a great way to listen back to a song and decide whether or not the song needs to be recorded or worked with in the future.

Using a video camera:

Believe it or not, the newer video cameras offer rather reasonable sound performance. Depending on the model of video camera you have, you may end up with surprising results. The video camera I use (which you can obviously hear pretty well) is a Panasonic HDC-SD60. The video shoots in full HD at 1920 x 1080. That's just the video specs though. I'm not sure about the audio specs. All I know is that it tends to pick up even the tiniest of noises. When you listen to my DVDs, you'll notice quite a few things – many unintentional. You'll hear (1) my ankles popping (2) my chair squeaking (3) my aquarium in the background – SALTWATER BABY! (4) my air conditioner kick on – sorry about that – (5) tv in the background – my daughter hasn't started preschool yet so, yeah (6) dogs barking – or shaking – or scratching – I have four dogs so it's practically impossible to keep them outside at all times – they bark at the neighbors during almost all of my recordings (7) traffic on the road , you get the picture.

However, the beauty of having a video camera to use for audio is that you can easily overlay tracks with standard software that comes free with your computer. Programs like "Windows Movie Maker" come installed on your computer (if you use the windows platform obviously) and can be used to actually LOOSELY master a recording with multiple tracks. It's actually very easy to do too. I'll show you how to do this in the next section.

Most video cameras offer the mic input, so it can be utilized in the same way as using the cassette player concept. However, I think you'll find the best method to be just recording it open. You'll pick up background noise, but if you move into a closet the noise won't be so obvious. More on that with the mixing and setup later.

One thing though: if you are still using a tape-based video camera, this process is very time consuming, and you'll need to be able to 'render' the tape to the computer. Your camera will show you how to do this. It could either be through a firewire cable or usb cable usually. If you are using a SD (memory) card then you'll be able to do this rather quickly.

Mobile phones:

Again, this all depends on the quality of your phone, and since most phones have an internal or external memory card, you'll be able to record anywhere that you carry your phone. There are limitations, as some phones only give you a small amount of space to work with as far as memory, but if your memory card offers a ton of space, you can simply use the 'voice memo' or, in some higher-end phones, a complete recording interface for various needs. I'm WAY behind in the mobile phone world, because I just need a phone that I can talk through, quick-browse the web, and use text features – and my phone records voice memo. My dinosaur of a phone is a Pantech P7000 with a micro SD slot. When I got the memory card for it, it came with an adapter that allows me to plug the micro SD chip into it so that it will fit into

a computer. Your computer may have a micro SD slot onboard IF it's a newer computer. Again, with this concept you simply push 'record' and begin. You can then use the file in standard software programs such as Windows Movie Maker. It works the same as the video camera concept.

Guitar processor recording devices:

This one is a bit harder to explain, because there are SO many out there. Again, I'm rather out-of-date with my gear setup, because since I focus on acoustic guitar, I don't need a crazy processor.

In the past when I worked at Guitar Alliance we used a simple Line 6 PodXT (yes, the old one!) to record through and into the editing software. Believe it or not, we've always used Cool Edit Pro. It's actually fine for basic recording. I'll show you how it is used later. This device can be found for about \$200 at the most, and that's from Amazon. Here is a link: http://www.amazon.com/Line-6-99-060-0405-PODxt/dp/B0002T1QCK/ref=sr_1_1?s=musical-instruments&ie=UTF8&qid=1317131967&sr=1-1

When I play live (and record) I use the M-Audio Black Box USB series. Yes. I use a USB device! I like this processor because of the various amp effects, guitar effects, mic input, balancer, and even – get this – an onboard drum machine with plenty of beats that are reasonably realistic. A quick search on Amazon shows them for about \$100. Here's a link: <http://www.amazon.com/M-Audio-Black-Amps-Effects-Recording/dp/B00083CZDO>

It DOES NOT matter which device you choose. All you have to know is how it is setup so that you can begin recording. MOST of these devices can just be plugged into any modern(ish) computer and it will install automatically. The best part is that most of these recording devices also come with a lite version editing software pack. Of course, there are limitations to the number of tracks, saving functions, and even sometimes some general effects for mastering or mixing, but for the layman it works just fine. You can even record simple demo cd's to hand out at gigs quickly and easily.

Since each device will show a different setup, it's impossible to show you HOW to work with effects or volume control, but the general rule here is that when you purchase an effects processor, the instruction manuals are very easy to understand.

Web Cams/ On-Board Computer Recording

I DO NOT recommend using either of these options, because the quality is almost always terrible. However, if you are at wit's end and you still want to playback what you are working on, these options MIGHT sound better than the cassette player concept.

Though I've never tried to perform through a webcam, I do know that latency is a HUGE issue. When you record everything tends to be a little behind (or a little ahead) so it makes it hard on the ears to register. Also, there are a bunch of different formats that the webcam utilizes when saving, so you may not be able to import your track into a software editing program. This is a big issue. Not all

software editing programs accept every format. The same goes with the on-board recording devices found on a standard windows system. I have never even tried to use my "Sound Recorder" option on my computer. It's found under "accessories."

Basically all you do is plug in a microphone through the mic port on your computer and play/sing through it. Again, this goes back to the cassette player idea. If you don't have a mic that will fit the port, you'll need to get an adapter or use headphones and go with the approach mentioned in the recording on a cassette player.

Overall, with all the new gadgets we've been introduced to over the years, odds are your video camera, your mobile phone, or even a processor-based recording device will be your best options. When I mix the song we've been working on for you, I'll be using my M-Audio Black Box, a drum track, a standard Behringer mic, and a simple editing program called "Adobe Audition."

- b. Mixing For Dummies - Panning, reverb, delay, EQ, pre-amps, plugins, AAAAGGHH!!! It's all too confusing. This lengthy tutorial provides you with the 'must have' mixing tools to achieve a developed sound that doesn't require the listener to turn the volume up just to hear your performance! (Believe me, I can't tell you how many times I have listened to demo tapes/CDs that need to be turned up more than halfway just to hear them!)

IS this the hard part? Well, yes.

However, the absolute basics are very easy. Before we discuss how to record, we need to establish what our room is going to be. We WILL NOT be getting into highly-detailed stuff here. This is based around a standard, cost-effective recording setup for a room for demo music purposes. We're not getting into impedance and sound bounce too much here. It's JUST the basics.

Additional Note: We aren't going to get into any 'ideal' room setups or anything like that. The main reason is that there is NO guaranteed method of achieving what the big wigs in the industry refer to as the 'master studio' recording. Vintage music was recorded with only a few concepts. New music is recorded with thousands. Since this entire focus is on HOW to mix, and HOW to get a decent sound, fact is that once you get your demo cd completed, you'll WANT to visit a real recording studio. But we aren't there yet.

Recording The Guitar(s)

If you are planning on an acoustic guitar-only setup (no bass, no electric guitar, etc.) then you'll want to decide on a few factors:

1. How many mics do you have?
2. What kind is it (are they?) Dynamic or Condenser?
3. Where do you position this (these) mic(s)?

Once you know how many mics you have access to, you can then move on to their types.

Condenser Microphones:

1. **Large Diaphragm** - Large diaphragm microphones (LDMs) are generally the choice for studio vocals, and any instrument recording where a more "deep" sound is desired. A large diaphragm microphone generally warms up the sound of what it's recording, which also leads to the myth that most LDMs reproduce low frequencies better than small diaphragm mics; this isn't true, in fact, small diaphragm mics are much better at reproducing everything evenly, including bass. You'll want a pop screen if using a condenser microphone for vocals; they're so sensitive to transient noises that the "P" and "SH" sounds you make will cause distortion.
2. **Small Diaphragm** - Small diaphragm microphones (SDMs) are generally the best choice where you want a solid, wide frequency response and the best transient response, which as mentioned before, is the ability for your microphone to reproduce fast sounds, such as stringed instruments. SDMs are also the preferred choice for concert taping.

Good suggestions for condenser microphones include the Oktava MC012 (\$99), RODE NT1 (\$199), and AKG C414B (\$700)

Dynamic Microphones:

Compared to condenser microphones, dynamic microphones are much more rugged. They're also especially resistant to moisture and other forms of abuse, which makes them the perfect choice onstage. Dynamic microphones like the Shure SM57 and Shure SM58 are legendary for not only their good sound quality, but the amount of abuse they can withstand. Any good rock club probably has at least 5 of each of these microphones in various states of aesthetic ruin; however, they still turn on and more than likely sound just as they did the day they came out of the package.

Dynamic microphones don't require their own power supply like condenser microphones. Their sound quality is generally not as accurate, however. Most dynamic microphones have a limited frequency response, which makes them well-suited, along with their ability to withstand high sound pressure levels, for loud guitar amps, live vocals, and drums.

That being said, there's a few companies right now producing "boutique" dynamic microphones -- some with characteristics similar to that of a condenser with the sustainability of a dynamic. Good dynamic microphones include the Shure SM57 (\$99), Sennheiser E602 (\$100), and the Shure SM58 (\$109).

Based on the whole acoustic guitar concept, odds are you have an input on your guitar (acoustic electric in other words) that will plug directly in. If you do, you of course CAN and WILL want to use that, because odds are you don't have more than one port to place an additional mic. If you are using a guitar processor, you'll probably only have one port. That basically means that you will ONLY be able to use that port to pick up your guitar. If that is the case, the use of microphones to enhance the sound isn't possible. However, if you happen to have a mixing board, (many small ones work fine) then you WILL be able to place multiple mics as well as plug in to your standard input. So, I'll be covering both methods.

Now, which one is the best choice?

If you are using a single port recording device (like me, the M-Audio Black Box or similar device) then you'll be limited to using the standard input on your guitar – in other words neither of these mics will offer you any hope. You're just plugged straight in.

If you have a mixer, then you'll be able to plug your guitar in with the input as well as use a microphone to enhance your sound. Which one? Dynamic? Condenser?

The simple answer is a **SMALL DIAPHRAGM CONDENSER**. These condensers tend to respond well in close-miking situations to the natural transient response and dynamic character of the instrument, reproducing the sound with better clarity, sparkle and detail than their large-diaphragm brethren, with minimal distortion and coloration. You'll want to place this mic 6 – 8" facing the 12th fret of the neck. In other words, you'll want the mic to point toward the tuning pegs on the 12th fret, **NO MORE** than 8" away. Double-tracked rhythm and arpeggio parts, hard-panned left-right, sound huge and really glisten. It's a great trick if you want a big stereo spread and size from one microphone.

As for using EQ and compression signal processing while recording, the less the better. You should be able to get a good sound from a good instrument and a good performance using the microphone and your ears. Recorded compression or EQ cannot be removed, but both may be added during mixdown to enhance the guitar sound within the track. In other words – keep it simple. Other effects can be added later.

Now, how do you RECORD the acoustic using a small diaphragm condenser? You've got it positioned already, so now the choice is in MONO or STEREO. This has to do with the actual RECORDING and not the mixing.

Acoustic Guitar Recording = MONO

Why? Well, when you record an acoustic guitar in MONO you'll find that the tone is richer. There are also suggestions on how to use two mics that record in mono and pan, but we'll assume we have only one mic. If you WANT information on how to do this just let me know. Odds are you won't have a bunch of mics laying around the room. I don't.

So we know that we want to record the acoustic guitar in mono – EVEN IF we are plugging it straight in from the port. In other words, even if we don't have a microphone, we want to record in mono for the acoustic. We can always overlay tracks, add other parts, and then pan them to a desired location.

What else will we be recording?

Obviously we'll want the vocals. I haven't forgotten about additional tracks for the guitar, but that is a choice you can decide upon later. You already have the format for recording the acoustic guitar.

Here's how we want to record with the vocals:

TRY TRY TRY to use a standard microphone cable (3-pin) instead of using a standard 'guitar' input for the mic. It just sounds MUCH better.

How do we record the vocals? Either way. I know that's not an answer, but it's true. The best rule of thumb is to generally use a dynamic mic like the Shure SM58, because they are relatively cheap and the 'air' can be added in POST recording. If you CAN afford a large-diaphragm condenser mic then go for it.

Recording Vocals = MONO

Here's a trick that sometimes works great. Record on TWO tracks in mono. Keep them in the center of the mix. Add stereo reverb to one or both. DO NOT PAN lead vocals. You can pan background vocals,

but NOT lead vocals. In this case, even if you record two vocals (both in mono) they are both referred to as lead vocals. Background vocals would be added in AFTER you complete the lead vocals.

Refresh:

Acoustic Guitar = Mono (with or without input/mic)

Vocals = Mono (please try using a 3-pin plugin)

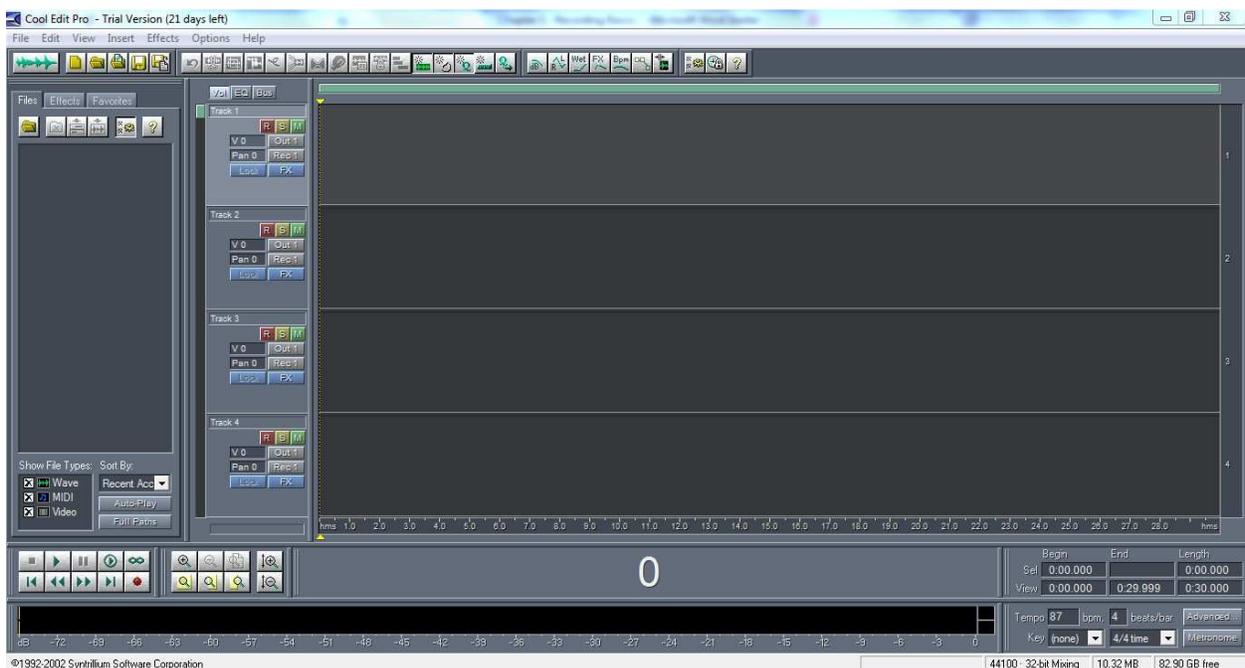
What's left? Well, for the basic recording nothing really. However, what about the bpm or click track we need? How do we do this? We want to stay in time, so we need some sort of metronome (even for basic recording!)

The best news is that MOST (even free) software recording editors come installed with a metronome or a click track. If not, you'll want to download a click-track (MP3) or use a drum machine. DO NOT use a metronome that isn't actually 'recording' or 'running' into the mixing editor software. You won't be able to keep time that way. If you actually record a drum track or click-track, simply mute the track when you actually RENDER the song. We'll get into that later.

Now that we know the stuff we need to begin our first recording, we now need to actually record the track(s). If you are simply INSERTING a track from a cassette recorder, a mobile phone, or a video camera, you will still need to understand the editing software. In other words, even if you aren't using an actual recording processor (M-Audio Black Box, Line6 PODxt, etc.) you need to understand how to insert tracks and the setup of the following editors.

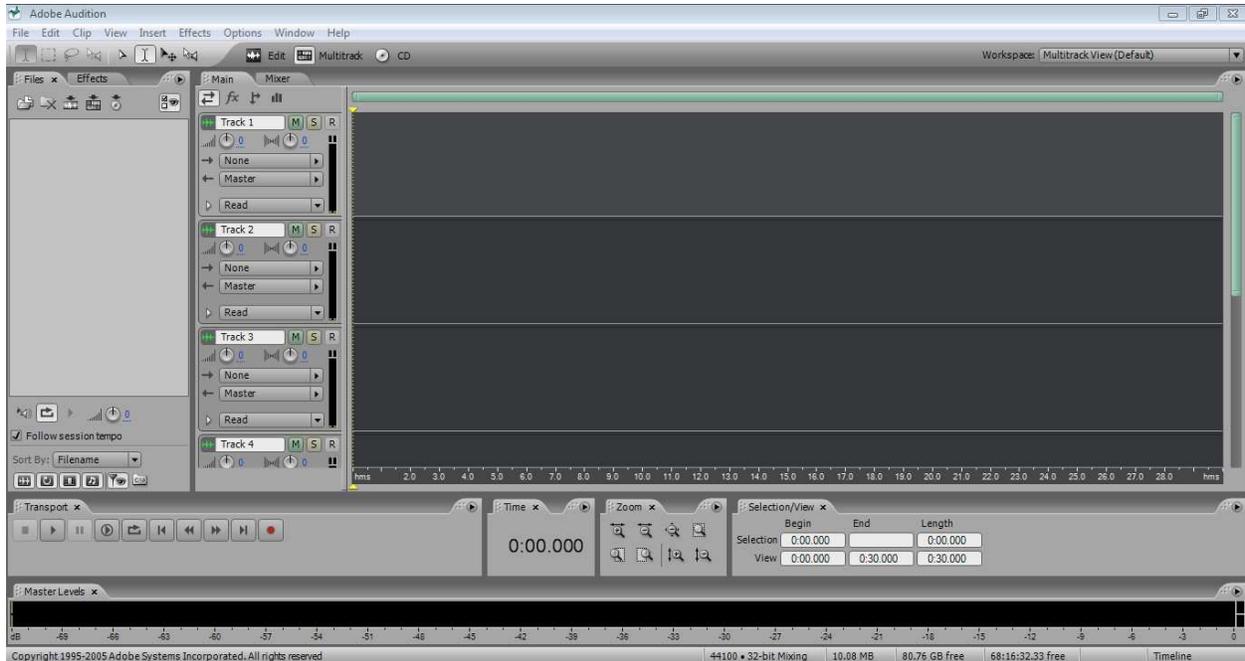
Software Recording/Editors

Cool Edit Pro (Version 2.00)



There are quite a few 'free' versions of this on the web. Simply search for the title and you'll find it. HOWEVER, check out this program:

Adobe Audition (2.0)



There's not much of a difference is there? That's because "Cool Edit Pro" became "Adobe Audition." In other words, you can find either online for free, and usually they are trials, but they will work for your recording, and you can then decide later if you wish to buy them or find another program that works similarly.

There are only a FEW things you need to know in order to use these programs. I can't tell you "HOW" to setup the ins and outs, or the way the software sees your recording device(s), because your setup will differ. However, there is PLENTY of help out there for troubleshooting.

Instead, let's focus on the 'stuff' we need to record a basic song.

1. Before you open the editing software, make sure your recording device is plugged in, connected, and/or turned on. If you are just using a file from a cassette, mobile phone, or video camera, be sure you have the SD card (memory card) plugged into one of the slots on your computer. You'll have to import that file when you start the editor.
2. Make sure your guitar has been tuned accordingly and preferably new strings have been added (but played with a little to stretch them).

For the rest of this tutorial, you'll be watching the video. I'll go ahead and add the points here though for future reference. This will be assumed that we are using Adobe Audition 2.0, but most editing software will still need to be used with the same process overall.

1. Open up editor.
2. Select metronome speed. *

*If you are importing a 'click-track' then choose "File>Import" (it will be added to your list. Find it and DRAG the file to one of the tracks. It should be dragged to the left corner of the track window.)



3. "Arm" your recording. This is done by selecting the "R" (the red button) so that a new track can be recorded.



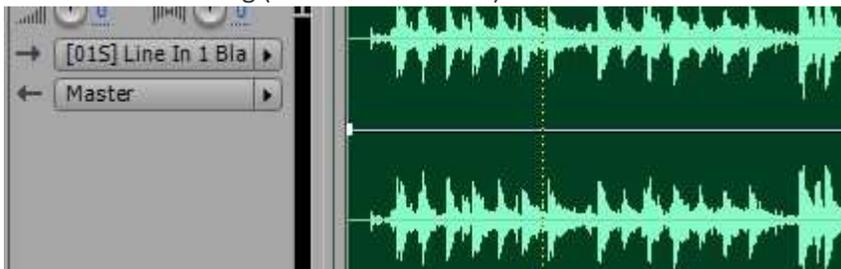
4. Notice the red "A." above as well as the "B." These are your 'ins' and 'outs' basically. You'll want the "A." to be the device you are recording with. Click the > button to establish the processor. The "B." should be left alone for basic recording. It is set to "Master" by default. **IMPORTANT: Under the "A." column, and after you've clicked the > button, you'll see a dropdown window. This track is going to be the acoustic guitar, so we'll need it to be recording in MONO. Be sure that mono is set.**

5. You are ready to record now. The easiest way to guarantee you are recording in mono is by doing a test run of the guitar. It will appear as ONE line instead of two:

Mono Recording:



Stereo Recording (we don't want this):



6. Simply record your first track (with the metronome or click-track). Once you've completed that, you can then add another track. If you are playing another guitar track, follow the same idea. (Add tracks by choosing "Insert > Audio Track")
7. When you are ready to perform the vocals, you do the EXACT same thing.

Once you have completed the recording, you're now ready to mix them. This will be covered on video only, because I will be testing the production as we go.

(I'll also show you how to save/render the file so I'm not missing anything.)

Important Link:

Adobe Audition 2.0 Free Trial

<http://adobe-audition.en.softonic.com/>