

Mixing Sessions

After completing this lesson, you should be familiar with the following concepts:

- When creating recordings, you don't always complete all of one of the stages of recording before moving on to the next.
- When beginning a mix, it is usually a good idea to solo each channel one by one to determine if each one could benefit from the use of a plug-in. Compression and EQ are common choices for many tracks.
- Submixing is a powerful mixing technique which allows you to route the outputs of several tracks to a single aux track which then allows you to control all of the volume and panning levels for the tracks using one set of controls. It is also common to apply plug-ins to submixed tracks as this offers greater continuity and saves system resources.
- Automation allows us greater control and flexibility when creating a mix. It allows us to record our changes to volume and panning controls and play them back.
- Mixdown is the stage of the mixing session in which all of the tracks in a project are mixed down to one stereo track. While reel-to-reel tape recorders were used for this process in traditional studios, most engineers will just record everything to another stereo track in the DAW in today's studios.
- While mixing, it is important to imagine that you are positioning instruments at different locations within a virtual room. By giving each instrument its own space, you will create a mix which is clear and easy to listen to.

Glossary for this Lesson:

Automation- The process of recording real-time changes you make to volume, panning, or any plug-ins during the mixing session. The computer will then make these changes again when you play back the song.

Automation Controls- The tiny play and record buttons found on each channel in the DAW's mixer window which allow you to record automation data for that track, or disable automation playback for that track.

Mixdown- The process in which all individual tracks in a song are mixed into one stereo master track.

Project Studio- A small studio, typically owned and operated by an individual. Many projects studios do not accept business

Stereo Image- The perception of spatial placement of various sounds in a mix. One quality of a good mix is the depth and breadth of the stereo image.

Submixing- A technique which uses busses to route the outputs of several tracks into one aux track. All of the submixed tracks can then be controlled via one volume and pan knob. It is also possible to apply plug-ins to this aux channel which all of the submixed channels will share.

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MOVING AROUND

One of the most important things to realize about working in a **project studio** (a smaller studio usually owned and operated by an individual) is that all of the different stages of a recording project can happen one after the other in rapid succession without a break in between. If you are working for a client, you may find yourself going through these different stages over and over if the client wants to completely finish with one song before going on to the next and their pieces are simple enough (or their budget small enough) that all of the stages can (or must) be completed in the same day. You will often find yourself jumping from preproduction to mixing to tracking, and then back to mixing, and perhaps to more preproduction before more mixing and finally mastering. It is important to understand that while the usual progression is preproduction, tracking, mixing, and mastering, you don't have to follow this progression in order to create a great recording. In fact, there are times when following this progression is definitely not the best option and will actually keep you from making the best recording you can.

TO BEGIN

As you sequenced all of your synthesizer parts, chances are that you used the DAW's mixer to set levels of all of the MIDI tracks as you went along. There is no right or wrong way to begin mixing a song, but many people begin by soloing each track and listening for problems. Listen to EQ, dynamics, etc. and think about the plug-ins and effects you have learned to operate so far. It is a common practice to at least use EQ and compression on almost every track. You don't necessarily have to use a plug-in on every track (including MIDI tracks) but ask yourself if the track could somehow sound better.

After listening to the tracks one at a time, it is a common practice to listen to them in groups. When mixing typical rock bands (drums, two guitars, bass, vocals) it is common to listen to all of the drums

together, then add the bass, then listen to just the guitars, etc. When dealing with synthesizers, you must use your own judgement about what groups to listen to. EQ is very important at this point. If the instruments do not seem to fit well together, or the mix seems muddy when you listen to several instruments at once, chances are that you need to use some EQ to make the instruments work together better.

Another excellent trick that you may wish to use at this point is **submixing**. Submixing is a technique in which the outputs of several tracks are mixed to one aux track. The single aux track then allows you to use just one set of volume and panning controls to control the volume and panning of all of those tracks. You can also apply plug-ins to this aux track such as compressors and limiters which will affect all of the tracks being submixed. Using plug-ins like this allows you to save precious processing power.

To submix several tracks, you must first create an aux track and set its input to an unused bus. (Be sure that whichever bus you choose, you didn't use it somewhere else for something else.) Set the aux track's output to two outputs on the audio interface. Next, set the outputs on all of the tracks you wish to submix to the same bus you chose for the aux track's input. Now audio coming from the submixed tracks, goes to the aux track instead of going to the audio interface. After going through any plug-ins on the aux track, the signals emerge at the audio interface. Submixing is a great way to use fewer plug-ins and to gain more control over your mix.

REHEARSING THE MIX

As you play through your composition, setting levels, adding plug-ins, and panning tracks, you will begin to notice that there are points in your piece where the song really benefits from changing the volume or panning, or perhaps changing the EQ setting. In a traditional studio (i.e. if you aren't working with a DAW) you would need to practice making all of these changes at the right times to get the

very best sound in your mix. Part of the reason the producer and assistant engineer often sit at a large console with the engineer is that it is not humanly possible for one person to make all of the necessary moves during the course of one song. Modern technology has replaced this system with something more precise, and much easier to use.

AUTOMATION STATION

Automation is a function which almost all DAW mixers have and many newer digital mixers also have. Automation is a function which allows the mixer to remember the moves you make and then replay those moves as you play the song back. You can automate not only pan and volume controls, but also many plug-ins as well. You don't have to make all of the necessary moves at once. Instead, you can record one control at a time until you are perfectly happy with the results. You can be as general or as particular as you want to be. Some professional engineers will actually EQ each and every syllable a singer sings slightly differently!

In the mixer window, each track has its own set of **automation controls**. These controls look like a tiny play and record button. Automating a track is actually simple. You simply click the automation record button on the track or tracks you wish to automate and start the DAW playing. As you make changes to the different parts of the mixer or plug-ins, the DAW remembers these changes and will play them back the next time you hit play. (You can stop a track's automation from playing back by clicking on the automation play button.) You can actually see the DAW mixer's faders and knobs moving on screen in most software. A few specialized control surfaces also have motorized faders which will move up and down following the tracks when you play the song.

GETTING SPACIAL

When creating a mix, you should imagine that you are placing the different instruments in the mix at different locations in a room. When all of the sounds are on top of each other, it can be very difficult for the listener to hear all of the different sounds

you used. As an engineer, it is your job to give each instrument its own distinct place in the mix. This is called creating a **stereo image**. Obviously, panning signals to either side can really help to create the impression of different positioning, but there are other tricks as well. For instance, you can use a very short stereo delay or chorus to move a mono signal out to the sides of a mix. Use of reverb can also help you to create the impression of distance and depth.

MIXDOWN

The final step in the mixing process is **mixdown**. During mixdown, all of the individual tracks are recorded to one stereo track. In traditional recording studios, a 2-track reel to reel tape recorder was used. Modern studios often use digital tape recorders (DAT decks) instead of traditional reel to reel machines. Since you have used a DAW for this project, there is no reason that you shouldn't continue to use the DAW at this stage. You can simply create another stereo track and record the entire completed mix to that track. This strategy will also make the next stage of production, mastering, much easier.

It is very important that the overall level of your final mix is as loud as it possibly can be without exceeding 0dB. You can monitor the level of incoming signals using the audio monitor window. You want to record the mix as loud as you can because this is how the DAW sounds best. We will learn about the technical reasons for this in another book.

AFTER THE MIX

After you have completed your mixdown, it is a good idea to go somewhere else and take a break from your mix. The mix should sound great to you at this point, but you may find some fatal flaws in it when you come back and listen to it later with fresh ears. Do not be afraid to make changes to your work when you come back to listen to it again. This is true even after you have completed your mastering session. You should listen to the recording for a week or more so that you can become comfortable with your work. Only then will you begin to hear details that you would like to improve upon.

Let's Review

1. What is the typical order of the stages of production, and when is it o.k. to take steps out of order?
2. What is submixing, and how do you submix tracks together?
3. What is automation, and how do we automate tracks? What is the advantage of using automation? What can we automate?
4. What is the goal when mixing? How can this be accomplished?
5. What is mixdown and why is this step necessary?
6. What can you do to individual tracks to make your mix better? What are some of the techniques you can use to accomplish this?
7. What you should do wen you have completed your mix? Can you still make changes to the mix?

Words To know:

Automation
Automation Controls
Mixdown

Project Studio
Stereo Image
Submixing

Experiments:

1. Bus several tracks together. Apply plug-ins, and notice what happens to all of the tracks as you change settings on the aux track.
2. Practice soloing tracks, listening carefully to each one. Identify ways in which each can be made better through the use of plug-ins.
3. Practice using automation to automate simple volume, panning, and plug-in settings.