

Tracking Sessions

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

- Most studios are setup so that they have two room. The performer performs in the studio while the engineer and producer sit in the control room.
- During tracking, audio from the performer's microphone is fed into a preamp and then the preamp's output is split. The signal goes to the DAW's audio interface and to the main mixer. The main mixer's outputs feed the speakers in the control room and go back into the studio so that the performer can hear themselves in the headphones.
- While tracking is occurring, and special headphone mix is created for the performer which allows them to hear their performance clearly while still monitoring the backing tracks.
- During tracking sessions, you can record takes of music by asking the performer to perform the entire piece start to finish, or you can ask them to perform small sections several times over. Each method has its advantages, but many performers find it easier to work on small sections of the music so that they can focus in on the nuances of their performance.
- As an engineer/producer, you must listen very carefully to the performances coming from the studio and critique the performer's work, but also provide constant praise and support for the performer.
- While recording, it is very important to set the loudest levels the mic preamp and audio interface will allow to achieve the best sound.

Glossary for this Lesson:

Audio Monitor Window- A window which allows you to see the levels of signals coming into the DAW.

Cans - Another name for headphones.

Control Room- The room in which the producer and engineer sit. There is usually a window between the control room and the studio. In an ideal situation, there should be no sound passing from the control room into the studio. The control room houses all of the equipment used to make a recording.

Headphone Mix- The volume settings which are optimal for performers to hear themselves during a tracking session.

Headphone Mixer- A small mixer which sits in the studio and allows the performer to adjust the volume level in their headphones as well as the balance of some of the elements in the headphone mix.

Studio- The room in which the performers stand or sit while performing.

Talkback Mic- A microphone which is used to carry the sound of the engineer and producer's voices into the headphone mixer so that the performers can hear them.

Tracking- A stage in production in which actual performances are recorded.

Tracking Sessions

TRACKING YOUR PREY

Tracking is the heart and soul of music production. **Tracking** is the stage of production in which musical performances are actually recorded. You already know about the mechanics of recording audio using a DAW. There are three more important aspects about a tracking session that have yet to be discussed: First, special hardware setups are needed to allow performers to listen to themselves while tracking. Second, it is very important to set all levels correctly while tracking to achieve an optimum recording. Finally, we will focus on the role of the producer/engineer during a typical tracking session.

THE STUDIO

During a tracking session, the performer performs in a room called the **studio**. A studio can be just about any room. In a project studio, it might be the bedroom next door, while in a large production facility, thousands of dollars are spent to ensure that the studio is designed to have perfect acoustic character. Whatever you are using as a studio, it should be as acoustically isolated as possible from...

THE CONTROL ROOM

The **control room** is the room where the engineer, producer, and assistant engineer sit during tracking sessions. In a large pro studio, there is typically an airtight sealed window between the control

room and the studio so that it is possible to see from one room into the next. It is not really necessary to have a window, however, as you can usually communicate between the two rooms verbally as we will see in a moment.

PERSONAL MONITORING

As we learned in Lesson Nine, you should set up whatever equipment you think you might need for a session before the session begins. For a tracking session, this means that you will have to set up two different systems: a monitoring system for the performer and audio cables that will allow you to record the performer.

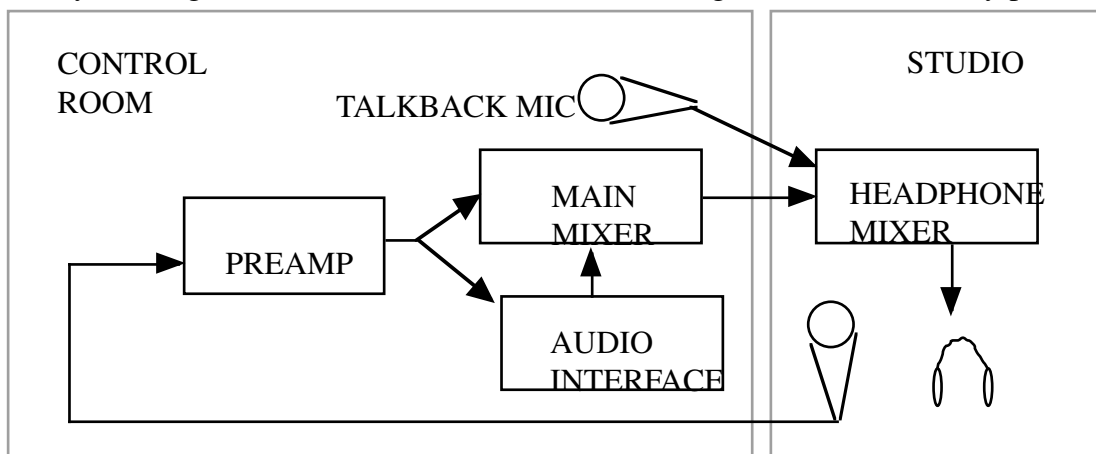
During tracking sessions, most performers will monitor their own performance (along with a click track and/or your demo from the DAW) using headphones. Headphones are frequently referred to as **cans** in a studio. The performer will also need to be able to hear you (the engineer).

CREATING A HEADPHONE MIX

It is your job as an engineer to make sure the performer can hear everything that they need to hear through the headphones. The volume settings you make are called a **headphone mix**. Some highly sophisticated studio setups allow performers to create their own headphone mix, but this is not always a good idea, since many performers don't know how

to create a good mix which will help their performance.

When creating a headphone mix, you should usually adjust the performer's part so that it will be louder than you would usually set



it for a final mix. If you don't turn the performer up enough, they will compensate by turning their headphones louder and louder in an attempt to hear themselves. As the headphones get louder and louder, some of the sound will actually be picked up by the microphone you are using to record them and pollute your otherwise pristine track. Another problem with excessive volume in your performer's headphones is that our ears are designed in such a way that we actually hear pitches flatter when the volume gets too loud, and thus you will often end up with a performance which is somewhat out of tune. Be sure to continually ask the performer if they can hear enough of themselves and the music. After you create a few headphone mixes for a particular performer, you will learn what makes them comfortable.

SIGNAL FLOWAGE

During a tracking session, you need to bring signals from the studio into the control room to the DAW so that they can be recorded. You also need to be able to hear signals from the studio so that you can help the performer to get the best possible performance recorded. You also need to be able to send signals from the performer's mic(s) back to the studio for them to hear along with any previously recorded MIDI or audio tracks and your voice so that you can communicate with the performer. To accomplish all of this, two separate systems are typically set up. The talkback system allows people in the control room to talk to the performers in the studio via their headphones. A microphone is set up in the control room which feeds directly into a mixer in the studio called the **headphone mixer**. The microphone in the control room is called the **talkback mic**, because it allows you to talk to the performers in the studio. In addition to the talkback microphone, the main outputs of the mixer should also be sent to the performer's headphone mixer. This allows the performer to hear not only the demo and click tracks, but also themselves.

The performer's mic runs back to the control room, where it is connected to a preamp. The output

of the preamp is split and one part of the signal goes into the studio's main mixer so that it can be heard in the control room as well as being fed into the headphone mixer in the studio. The other part of the signal from the preamp goes into the audio interface so that it can be recorded by the DAW. It is possible to just route the preamp to the audio interface, and route the audio into the DAW software and then back out the audio interface. The trouble with this configuration is that it takes a small amount of time for audio to get into the DAW software and get back out. This delay is called **latency**. The amount of latency in a particular DAW depends on the computer's speed. In slower, older computers, the latency can be as high as 1-2 seconds! Performers can't do a good job of playing when they hear the notes they play a second after they play them, so this is not an acceptable solution in some cases. Newer, more modern computers can reduce latency times to a level where it is barely noticeable.

ON TO A NEW LEVEL

All throughout this book, you have seen many different **level meters**. A level meter could be a row of lights or a display on the computer's screen. The level meter just shows how much volume is present. When tracking, it is exceedingly important to watch the level meters on both the preamp and the DAW as carefully as possible. While recording, it is important to set the gain on the mic preamp as high as possible without causing the preamp to overload. Most preamps have a red light which turns on when too much volume goes through the preamp. While overloading the preamp will not hurt it, it will cause the sounds going through the preamp to **distort**. When sounds become distorted, the actual shape of the sound waves is changed because the preamplifier can't handle the level of volume which is going through it. While distortion is sometimes a good thing, we will avoid it for now.

The next level you have to set is the preamp's output level. This level will determine how loud the sound is as it comes into the DAW's audio interface. Again, we want to get the loudest sound we can into

the DAW without overloading the audio interface's inputs.

To set the levels on the preamp, ask the performer to begin performing. It is a good idea to let them practice at least once through the piece before you attempt to do any recording at all. This allows the performer to get comfortable and it also gives you time to set the levels. First, turn up the gain on the preamp slowly until the overload light flickers on and off once in a while, and then turn it down far enough so that it doesn't come on anymore. Be sure to keep a careful eye on it towards louder sections of the piece.

Next, record enable an audio track in the DAW and look in the **audio monitor window**. This window (shown below) allows you to see the input level meters for all of the inputs on the audio interface. Adjust the preamp's output so that the level meters stay as near to the right as possible without ever overloading the audio interface. Once you have what seems to be absolutely ideal levels set, back off the preamp's gain slightly. This will give you just a little extra space, just in case the performer starts to perform louder than they did during the practice run. (Many performers get louder as they become more confident with the music they are performing.)

KNOW WHEN TO HOLD 'EM

Running a successful tracking session takes a lot of good musical judgement. As a producer, it is your job to coach the performer in how to best perform the piece. Some pieces lend themselves to recording only small sections at a time, while others work best when performed straight through. For many pieces, it makes sense to record only one small

section at a time. This way, performers can focus in on small details of the performance such as intonation or articulation of a particular note in a phrase. Later, all of the small recorded pieces can be edited together.

Whatever method you choose, it is important to make your performer feel comfortable. Be sure to tell them over and over again how good their sound is and that they are doing a good job. It takes a lot of courage to stand in front of a microphone, and if a performer begins to feel that they are doing a poor job, their performances will get progressively worse. One of the producer's most important roles in the studio is to continually cheer on performers and to keep their level of enthusiasm for the song high.

While you are recording many different takes of the audio, it is very important to listen very carefully to the performer. It is important to get enough takes so that you will always have enough material. Even if you feel like the performer did a perfect take on the first try, you should always record at least two more takes so that you will have additional material to work with if you change your mind about the first take.

The more you record, the more you will discover that all of this listening and coaching make up the hardest part of recording. Setting levels, arming tracks, and pushing the record button doesn't take that much concentration, but listening with a critical ear to every move the performer makes takes phenomenal concentration. Like all other aspects of music technology we have studied so far, tracking is a skill which takes a lot of practice to master. The people who are experts at recording are experts because they have spent hundreds of hours tracking.



Let's Review

1. What is tracking, and what rooms in a production facility are involved? What happens in each room?
2. How do signals flow between the studio and the control room, and how does the engineer communicate with the musicians?
3. What sorts of levels should you see in the audio monitor window if everything is working correctly? What can happen if the levels get too loud?
4. How can you get a more musical and relaxed performance from musicians in the studio, and what things can you do to make performers feel more at ease?

Words To know:

Audio Monitor Window
Cans
Control Room

Headphone Mix
Headphone Mixer
Studio

Talkback Mic
Tracking

Experiments:

1. Practice setting up equipment for a session. Test everything to be sure you have everything connected correctly.
2. Watch some signals in the audio monitor window while someone else speaks in the studio. Do you have to set the input gain lower or higher than you expected? What happens when the gain is too hot (loud)?
3. Your teacher will help you to monitor the signals through the DAW. What do you hear as you try to speak through a microphone? What are the advantages and disadvantages of monitoring audio through a computer?
4. What kinds of strategies can you employ to keep performers happy and performing their best during a session? What can you do to prepare yourself mentally for a session, and remain focused during a tracking session?