Intro to Sound

Mixer/Mixer Parts

Source

Amp

Output

How Mics Work

Feedback

Balanced Line

XLR Cable

Why would you want to use an XLR cable?

Types of Mics:

Intro To Sound (Key)

Mixer/Mixer Parts

-Input, EQ, output

-A mixer just takes in sound, reorganizes it, and sends it out somewhere else. It controls and crafts the sound. Sound has to be sent to the proper place at the proper volume, and this is done by the mixer.

-Input is where the sound comes in, or enters the system. This should be done through XLR cables.

-EQ control the sound quality, like the treble and bass of the sound. This shapes the “color” of the sound.

-Gain, or input trim allows you to boost a mic signal up to where the mixer can use it.

Source:

-The sound must enter the system in some way. Through the source. Life sound is captured through a microphone and converted through a mixer. The source for live sound is a mic. The source for pre-recorded sound is whatever device you use to play the sound- the CD player, mp3 player, computer, whatever.

Amp

-The signal coming from the source (microphone or whatever) isn’t powerful enough to drive the speakers. For the signal to be loud enough you need amplification. In most theatre sound systems there is a separate unit that takes the output from the mixer and pumps it up to a strong enough level for the speakers.

Output

There has to be a way for sound to get out of the system so people can hear it. This is the speakers.

How Mics Work

When sounds arrive from the outside world, they move a sensitive membrane called a diaphragm. the diaphragm is connected to a magnet. as the diaphragm moves, the magnet turns these vibrations into electrical impulses and sends them to the rest of the sound system. The microphone converts sound waves into electrical impulses. The mixer and the amp amplify sounds, in turn, and pump them out to a set of speakers. Microphones pick up all sound (good and bad) so picking up bad sound causes feedback.

Feedback

The audio version of a short circuit. it happens when a sound comes out of a speaker and immediately re-enters the sound system through a microphone. Feedback is bad for equipment, can fry electronics, and blow speakers. Turn mic away from speakers, turn down volume, and don’t cover the mic!!

Balanced Line

A balanced line is a microphone cable that sends the signal out on two wires at once, one running from the mixer to the mic and one running from the mic to the mixer. any noise that the cable picks up gets sent in both directions at once, effectively canceling it out. an unbalanced line sends all the noise in a single direction: to the mixer. Balanced lines need what is called a low-impedance mic, which use XLR plugs.

XLR Cable

Run low impedance mics for balanced lines. 3 plugs: one plug for the line running in each direction, and one as a ground wire.

Why would you want to use an XLR cable?

Less feedback

Types of Mics:

**Lav:** Used for interviews and hooks onto the shirt

**Corded mic**: Most reliable but also lame looking. Not good for performing.

**Wireless mic:** These run on batteries, which must be checked all the time. They also use radio frequencies to pick up and transmit sound, and they can pick up interference. On Broadway there are specific frequencies assigned to each show. new show openings can be delayed until another show closes and frees up enough radio channels.

**Body mics**: They have a pencil eraser sized microphone and a cigarette pack sized belt pack. the two pieces are connected by a cord that runs underneath the costume. The belt pack contains the batteries and the transceiver, the part that actually sends out the radio signal. In a perfect work the mic is clipped in the hair , the cord runs down the back of the neck, and the belt pack sits in a pocket in the costume in the small of the actors back. The way to kill a mic is with sweat. If sweat falls on the microphone it will kill it.

**Floor (PZM mics)**: Specifically designed to sit on the floor, where it picks up not only the sound coming directly from the source, but also the sound the bounces off the floor right in front of it, making the microphone more sensitive.

**Shotgun mic**: Picks up the sound of what’s right in front of it, and can be used at long distances. Rejects the sounds to either side of the mic, even if the target sound is far away.

**Hanging mic**