Live Sound Reinforcement Guide

Step-by-Step Procedure

Module 02

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1   SIGNAL FLOW

Plug an XLR cable into all microphones on stage, and run the XLR cable to an appropriate tie-line on the snake.

Take all instrument cables and plug them into a DI box. Run an XLR cable from the DI box to an appropriate tie-line on the snake.

Take note of the channels for each microphone and instrument. A list of tie-lines and the channels on the console that represent each input is called an *input list*.

2   GAIN STRUCTURE

You will now need to check each signal source on stage. Turn the gain all the way down on the instrument or vocal you want to check. Unmute the channel and put the fader at 0. Then press the "PFL" button on that channel.

Have the musician or vocalist perform the loudest they intend to perform. Turn the gain up and watch the signal meter. Make sure that the level stays around 0 (green) and occasionally peaks in the yellow section. This will give the instrument or microphone the optimum level for mixing. Green and yellow are fine, but give yourself distance away from red.

If a musician requests for you to change the gain structure, *do not comply*. The gain structure is the most critical part of your mix and affects *all* aspects of your mix, including signal processing, monitor levels, and the coherency of your overall mix levels. Once a gain structure is set correctly, lock it in place. Gain should not be used to adjust monitor mixes or to change your levels at FOH. Faders, aux sends, and/or Aviom mixes on stage should be used for these problems.

3   EQ AND FILTERING

Engage the 100Hz high-pass filter on *all* channels that do not rely on bass frequencies. For example, you will want the filter engaged for all vocals, electric guitars, acoustic guitars, snare drums, overhead drum mikes and hi-hats, etc. Leave the filter turned off for bass guitars, kick drums, cajóns, etc. Next, set the equalizer for each channel. EQ techniques are outlined in Module 03.

4   AUX OUTPUTS

If you use aux outputs to set stage/monitor levels, set these appropriately now. Turn up the appropriate aux output on each channel that the band needs to hear on stage. Remember: you are ultimately in charge here. Depending on how many monitors are available on stage, and how many individual aux outputs you have, you may have to compromise on what each musician wants versus what is practical. If you use an in-ear system like an Aviom system, the aux outputs are usually not used for monitor mixes, and each musician will control his or her levels on stage.

5   SIGNAL PROCESSING

Set the effects for each channel appropriately. The most common effects used at the console are reverb and delay. Simple reverbs like a "hall" setting with a 1-1.5 second decay are good go-to choices. It is most common to apply reverb to vocals and snare drums. Other instruments rarely require effects. Electric guitarists will always apply effects from the stage, so *do not* apply additional effects at the board.

Set the compression and gating for each channel. Dynamics processing techniques are outlined in Module 03.

6   BASIC MIX STRUCTURE

There is no "right way" to set up a mix, but there are lots of wrong ways to do it. However, the following provides a good starting point for you.

Set the kick drum (or cajón in smaller settings) as the starting point for your mix. It is best to set the level between 0 and -5. Bring up the snare drum (if applicable) until it sits nicely with the kick drum, then do the same with the bass. This simple drum and bass mix should set the overall level for your mix, and the pocket groove between the drums and bass should form a good balance for your entire rhythm section.

You can now bring up the remaining drums, then guitars, and finally vocals. Remember that the vocals must be present to the point of being easily heard and understood, without pushing beyond the original basic mix that you created. They are the most important part, but not necessarily the loudest.

7   MAKE ADJUSTMENTS

Once your mix is set up, walk around the room, stand in spots where your audience will be, and mentally gather a list of adjustments you want to make to levels, EQ, and dynamics processing.