

# SOUND OF WORSHIP

**SOUND ADVICE  
FOR TODAY'S  
HOUSE OF WORSHIP**

SPRING 2008

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# SOUND OF WORSHIP

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### For More Information

**Phone:**  
(337) 527-1001  
(337) 513-9646

**Website:**  
www.advancedav.biz

**Email:**  
aavtinfo@yahoo.com

## Four Easily Overlooked Improvements for Your Sound System Project

Looking at upgrading your sound system? Here are some fundamental building blocks that are necessary for a successful sound system.

### Mixing Console Location

One very important part of improving a sound system is the placement of the mixer or mixing console. Or, in other words, "location, location, location." Where the mixer is placed will determine the ultimate value in any or all improvements made to the sound system equipment. First of all, the sound tech who operates the controls of the mixer MUST be in the same room as the congregation. In order to make loudness and tonal balance changes accurately, the sound tech must be in the same acoustical environment so that he or she hears what the congregation hears. This does not mean putting the mixer in an adjoining room with a sliding glass window. A sound booth is not the same acoustical environment.

Whenever possible, the mixer should be placed in a location that is on-axis to one of the main loudspeaker's high frequency components. In other words, one of the

loudspeakers should be pointed right at the mixer. This arrangement will make certain the mixer is located where the sound system is as loud or louder than most other seats in the seating area. The sound operator will not have to guess how loud the sound is in other areas.

Also, the mixing console and sound tech should be on a raised platform. The sound tech can then see the platform when the congregation is standing. This might be difficult if the mixer is located in the middle of the seating area. A mixer position in the last seating row or near a back aisle will minimize any visual obstruction.

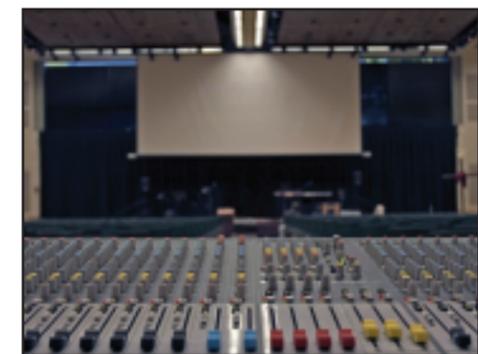


Figure 1 Location of the mixing console is very important

**Console Desk**

Consider these items when you're thinking about the mixing console cabinet:

- Will the church be upgrading the mixer at a later time? If so, is there sufficient room for a larger mixer?
- Does the sound operator have good access and line-of-sight to tape or CD decks and other electronics?
- Will more than one operator be required at a time? If so, is there enough room to work comfortably side-by-side?
- Is there access to the back of the mixer? Make certain enough room is left behind the mixer for connectors and cable exit.
- Is there enough room over the top of the mixer for small gooseneck lamps?
- Have you provided ample storage for headphones, blank cassettes or CDs, talkback microphones, etc.?
- Does the sound operator have convenient and quick access to an aisle for last-minute jaunts to the front platform?
- Does the mixer and other equipment need to be secured with lockable tops or doors?

This list could go on for some time. Simply remember that we install sound systems on a regular basis. We can help you avoid the mistakes a first-time installation may create.

**Conduit**

Another aspect of sound system improvements that often accompanies mixer relocation or new loudspeaker components is the need for cable conduits.

We are often asked why we recommend the use of conduits for cable routing. Conduits provide several benefits to a properly operating system.

A conduit will provide protection against any damage due to stray drills or nails that may short-circuit or break an audio cable.

In the event the church expands or adds to the sound system, an oversized conduit allows the contractor to install additional cable without ripping through sheetrock or concrete. The use of conduit will also help speed up the installation process, which helps reduce labor expense.

In areas where radio interference may be a problem, steel conduit will act as an additional shield against RF interference in the sound system.

You might also want to have additional conduit installed for future video equipment needs. It is less costly to have all of the conduit installed at one time.

**AC Power Source**

Unless you choose components that operate on batteries, good old fashioned 120 VAC electrical service will be needed at several locations, including the mixer

location and the amplifier/electronics rack if they are separated.

A church can spend thousands of dollars on the best audio equipment, but if the proper electrical service is not provided, the sound system's performance may be severely affected. It is best to provide a dedicated circuit with an isolated ground (green-wire ground).

Another great addition is a power sequencing system (see the top image in Figure 2). This will turn all the equipment on and off in the correct order. The sound tech only needs to push one button! A switched outlet at the mixer should have sufficient receptacles for any tape or CD decks, signal processing equipment and the mixer. Extra receptacles for any portable or added equipment that may be used from time to time are a smart addition. Also consider adding high quality surge protectors for the sound system (see the bottom image in Figure 2). Expensive modern digital sound equipment is reliable, but it is comforting to know it is protected from increasingly "dirty" AC power.

There are more details to consider than what we've covered in this article. But the important thing to remember is this: We're able to help you plan your project to avoid or minimize problems later. Call us now for more information!

■ Travis Ludwig

**TECH TALK**

**Tips to Identify the Right Microphone**



**Color Identification**

Color coding each microphone can help you and the users keep the microphones properly identified. Several methods work well. Pick one you like and implement it.



Figure 3 Windscreens

**Windscreens**

Windscreens or pop filters are available in many colors (see Figure 3). A windscreen is placed over the microphone grill screen. The windscreens are very visible and assure easy microphone identification at a distance. Be sure to choose the correct type and size for your microphones.

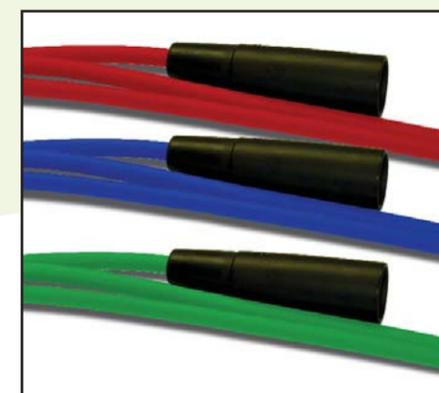


Figure 4 Microphone cables

**Cables**

Microphone cable is available in at least eight colors (see Figure 4). Some manufacturers even have neon colors. Using color cables versus windscreens

may be more acceptable for some people. It keeps the color away from the musician's face. However, color cable is probably less noticeable, so it is harder to identify at a distance.



Figure 5 Color collars

**Collars**

Another option is to use microphone color collars or rings (see Figure 5). This method is much harder to see at a distance, but it is easy for the musician to identify the correct microphone.

**Plastic Tape**

Simply wrapping the microphone or the cable with electrical plastic tape of different colors can provide a quick method of identification. However, this method can be a bit messy after the tape ages. There is often a gummy mess when the tape is removed.

Choose a method that will work for you. It may prevent an embarrassing moment!

■ Ron Huisinga

Figure 2 Top: Power sequencer Bottom: Surge protector

