

The SOUND OF WORSHIP

SOUND ADVICE FOR TODAY'S HOUSE OF WORSHIP

Summer 2007

Attention Secretary,
PLEASE ROUTE TO:

- Sound Operator
- Pastor
- Music Minister
- Other _____
- Save for the
Sound Operator Manual

A newsletter
for anyone who
wants to learn
about sound!

In This Issue

- 1 Discover if your sound system is meeting your needs.
- 2 Tips to find the best systems contractor to help you with your new sound system.
- 3 Get technical... what is a Pan Pot and how do you use it?

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NEW SOUND SYSTEM? Questions to ask to make a wise investment

If your pastor has a message worth saying, it's worth being heard. Even the best preaching will fall short of changing lives if the message is difficult to hear because of the church's inadequate sound system.

So how do you determine if your sound system has is delivering your message loud and clear? Take just a moment to run through this checklist to see if your sound system is doing the job—or needs a little help.

1. What is your system required to do?

(Think of your church's present and future needs.)

- | Does your system need to: | YES | NO |
|--|-------|-------|
| a) amplify speech? | _____ | _____ |
| b) amplify singers? | _____ | _____ |
| c) amplify live instruments? | _____ | _____ |
| d) amplify taped background tracks? | _____ | _____ |
| e) provide a monitor so the vocalist can better hear the tracks? | _____ | _____ |
| f) provide more than one monitor mix? | _____ | _____ |

- | | YES | NO |
|---|-------|-------|
| g) be able to handle more microphones? | _____ | _____ |
| h) provide facilities for the hearing impaired? | _____ | _____ |

2. What additional areas need to be covered with sound?

Do you need/want loudspeakers in the:

- | | YES | NO |
|---|-------|-------|
| a) nursery? | _____ | _____ |
| b) cry room? | _____ | _____ |
| c) narthex/gathering space? | _____ | _____ |
| d) choir room? | _____ | _____ |
| e) offices? | _____ | _____ |
| f) hallways? | _____ | _____ |
| g) kitchen? | _____ | _____ |
| h) fellowship hall? | _____ | _____ |
| i) area surrounding the church (outside)? | _____ | _____ |
| j) Other: _____ | _____ | _____ |

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For Further Information

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3. What are your recording requirements?

(Think about how good your record mix needs to be. This will help you determine how many microphones you need.)

Do you need a separate audio mix with congregation sound, other instruments, etc?

Do you need to:	YES	NO
a) record on cassette tape or CD?	_____	_____
b) send a signal to a radio station?	_____	_____
c) feed a cable system, VCR, or DVD Recorder?	_____	_____
d) stream to the Internet?	_____	_____

4. What problems are you experiencing with your present sound system?

	YES	NO
a) Do you have poor coverage resulting in dead spots?	_____	_____
b) Is the sound quality unnatural?	_____	_____
c) Is it difficult to understand speech?	_____	_____
d) Is it easier to understand the person speaking when the sound system is turned off?	_____	_____
e) Can you get enough volume without feedback squeal?	_____	_____
f) Can the sound operators hear the system well enough to be able to set the volume accurately?	_____	_____
g) Other _____	_____	_____

5. Think about your church's future needs.

(This is a good time to brainstorm with your support staff and sound personnel. Anticipating future sound system requirements and providing for them now will help avoid potential disaster or disappointments—plus save you money in the long run.)

Do you need to consider providing for:

	YES	NO
a) a children's musical?	_____	_____
b) a drama group?	_____	_____
c) visiting quartets or choirs?	_____	_____
d) special effects for Christmas or Easter programs?	_____	_____
e) a children's puppet ministry?	_____	_____
f) Other _____	_____	_____

Now that you've determined your needs, what's next? You must decide who is going to help solve your problems and meet your sound system needs. How do you select the right contractor for your church? First, call up some churches who have sound systems you have heard and liked. Ask who did the sound system design and installation for them. Then call any prospective contractor and invite them to meet with the church ministry team members. Don't forget to call us! Ask questions. Be as specific and complete as possible in discussing the scope of your problems and needs. Make certain that other appropriate church members have been asked for their input. Try not to pinpoint the products you think you need. An effective contractor will translate your current and future needs into the appropriate system components.

Any competent contractor will check the acoustical characteristics of your church. Most room characteristics can be estimated, but on-site analysis is always the best approach. Without

this acoustical information, the sound system designer cannot guarantee good intelligibility.

The contractor will also need precise physical dimensions of the room in order to design a system that will provide even coverage. If possible, you can help by providing accurate blueprints or plan and section drawings. Also ask the contractor to describe their design method.

After you've narrowed down your list of contractors, ask for references. Then ask them the following questions:

	YES	NO
1. Were your needs met?	_____	_____
2. Are you satisfied with the quality of the installation?	_____	_____
3. Was the contractor easy to work with?	_____	_____
4. Did you receive adequate training on how to use your new system?	_____	_____
5. Does the sound system work as well as you expected it to?	_____	_____
6. Would you recommend this company to other churches?	_____	_____

This checklist was designed to help you determine who can best meet your sound system needs. References are important, but it's even more important that you are satisfied with your sound system. Test it with your own ears, the best criteria of all.

You need to select a company whom you can trust...PERIOD. That's the bottom line! Selecting a contractor based on price alone may cost more than you think. Listen to the questions that the contractor asks. You must be confident in their ability to design and install a sound system that will meet your present and future needs.



TECH TALK What is a Pan Pot?

The Pan Pot is not something you will find in your normal kitchen. It is actually found on an audio mixer, and it is a quick, simple way to say Panorama Potentiometer. Pan Pot is much easier to say (and write)! So what is it, and how do you use it?

If your mixer has a Left and Right output, you would also see a knob/control usually located above the channel fader. This is called the Pan Pot. There are two purposes for the Pan Pot. In a stereo sound system or recording, we may use the Pan Pot to place the signal in the stereo image. However, the primary purpose in most sound systems is to route the signal from an input channel to a desired mixer output.

When the stereo mixing console is used for recording or in a true stereo sound system, the Pan Pot is used to place the individual sound sources in the proper perspective or position in the stereo image (Panorama). For example, we may want to position a 12-string rhythm acoustic guitar on the left, another lead electric guitar on the right, and the singer in the middle of the stereo sound image. Perhaps a violin is placed some where between left and center and a flute is between center and right.

In this application, the position of the Pan Pot determines where the sound source appears to be located. When the Pan Pot for the vocalist channel is at the 12 o'clock position (center), the signal is split evenly between the Left and Right outputs. When we listen to this in stereo, the vocalist is standing between the left and right loudspeakers. Now, rotate the Pan Pot on the

acoustic guitar channel fully counter-clockwise (left). The acoustic guitar will now be heard only in the left loudspeaker. Now let's turn the Pan Pot for the violin



Pan Pot fully counter clockwise



Pan Pot at the 9:30 position

channel to its 9:30 position. On a good stereo system, it should sound like the violin player is standing between the acoustic guitar and the vocalist. We have artificially created a stereo panorama or image by using the Pan Pot. The lead guitar and flute are positioned on the right side of the stereo image in the same manner by turning the Pan Pot clockwise (right) from the center position.

But most sound systems are mono systems. There may be more than one loudspeaker, but each loudspeaker is getting the same signal. But we can still use the same stereo mixer in the mono sound system. However, instead of using the Pan Pots for creating a stereo sound image, we can use them for signal routing or even for creating different mono mixes.

If you have an older mixer that only has a couple of Aux outputs and they are being used, you could use the Left and Right outputs to feed different rooms. For example, let's use the Left mixer output to feed the main Worship Space loudspeakers. We could connect the Right mixer output to the amplifier that feeds loudspeakers in the Fellowship Hall. As you can guess from the first application above, when the Pan Pot is in its center position, the signal will be sent equally to both the main loudspeakers and the Fellowship Hall. What if there is a committee meeting in the Fellowship Hall and they want to use the wireless microphone that is plugged into channel two, but nobody wants it to be heard on the main Worship Space system. No problem. Simply rotate the Pan Pot all the way clockwise



Pan Pot fully clockwise

two different mono mixes on the Left and Right mixer outputs by adjusting the channel Pan Pots just like we did when creating a stereo mix. However, in this case we are using the Pan Pot to put more or less of a certain channel in the two mono mixes. For example, the previous illustration had the Left Mixer output feeding the Worship Space sound system and the Right mixer output is feeding the Fellowship Hall (or perhaps a CD recorder). An instrument like a piano produces enough acoustic sound that it may not require much amplification to be heard in the Worship Space. However, the Fellowship Hall mix must have a much higher piano level than the mix for the Worship Space. If we turn the Pan Pot to perhaps the 2 o'clock position, much more



Pan Pot at the 2 o'clock position

of the piano signal will go to the Right mixer output and less to the Left output. By careful adjustment of the Pan Pot we can create the correct mix for both locations. Fortunately, today's mixing consoles have enough Aux outputs that we do not need to use this method for creating a second mix. It is much easier to do this with the extra Aux outputs. Most mixing consoles now have six or eight Aux outputs. If you have a need for multiple outputs, the easiest solution is to invest in a new mixer. Current mixing consoles can provide incredible capabilities at a relatively low cost. Call us for more information on upgrading your mixing console.