The Audio Equipment Checklist

Do you:

☐ **Have gear that works 100% of the time?**

Unreliable gear causes anxiety in both the production team and the people on stage – musicians and pastors! Even if it’s a mic cable that has to be connected “just right,” all it takes is a bump and the connection is broken or pops & static fill the air.

☐ **Have audio gear that’s able to be used by all audio techs? Equipment too advanced for crew equals useless equipment.**

I’ve seen a church that was sold “too-much mixer” so their $10K audio console was a very expensive volume controller. Techs should be trained to use the equipment but the equipment needs to be at a level they can grasp.

☐ **Have audio gear that meets current needs and would meet needs in five years?**

Are the console channels all used up? Are you short a stage monitor? Are all of the production needs met but the church is planning on a new sanctuary? Maybe the church has switched from traditional music and now has a growing contemporary-style band. Meet or exceed current demands and plan for the future.

☐ **(Did you) Have the room professionally evaluated for acoustic properties and treatment?**

There are a number of ways to cut down on sound reflection in a room but one has to know where to place the acoustic treatment. There can also be areas where low end frequencies gather. I know a church that had to rope off seats because of excessive low end in that area. Whatever the case, it’s best to know how to fix these problems for the best audio production.

☐ **Have an audio console that meets or exceeds the production requirements, such as having spare channels while providing multi-track recording as per production needs?**

Let’s say every channel on the console is used. What if the band grew by one member? What if two new singers wanted to join? You might have a single open channel. In either case, it’s time to plan for a console with more channels and that’s a great time to look at all of the other functionality that might be desired.

☐ **Have power protection equipment that provides clean power and protects from power surges? In case of running digital equipment, a UPC should be used.**

All of the equipment could be gone in a second thanks to a lightning strike or other unforeseen power-surge. Not only should the church’s insurance policy protect from the possible financial loss, there should be equipment in place that reduces the likelihood of loss. As for clean power – yes, there is such a thing as dirty power and it will decrease the life expectancy of some gear.
☐ (Did you) Have the room professionally evaluated for speaker sizing and placement?

It’s not often a system is over-sized for a room but they can easily be undersized. Also, the requirements of a traditional-style service is much different than a contemporary-style service. A pro will use industry-standard processes and calculations to determine the right speaker/amp sizing and placement. Bad speaker placement can cause a host of problems.

☐ Have a house speaker setup (speakers, subs, amps) that provides even coverage throughout the room and with high audio quality and was purchased within the last eight years?

Those speakers that sounded great ten years ago will pale in comparison to most anything purchased today. Not only has the technology improved but speakers suffer problems with age (don’t we all). And with today’s technology in speaker selection, placement, and EQ setup, most every seat in the sanctuary can get a great sound.

☐ Have a monitoring setup (wedge monitors or personal monitoring system) so musicians can best play together in time and on pitch? In case of personal systems, do musicians have appropriate headphones / in-ears?

Musicians absolutely have to hear specific channels in specific volume relationships so they can sound great when they play. When they can’t, they aren’t giving the congregation (or the audio tech) their best – and that makes mixing harder and makes for frustrated musicians.

☐ Have effects unit(s) – or a digital console with effects? Some below points may also be covered by digital console functionality.

There’s a host of processing functionality available, from standard effects like reverb to compression and gating. The more a tech has at hand (and knows how to use), the better the resulting audio production.

☐ Have a house limiter to protect people and equipment from unsafe volumes?

A tech’s responsibility goes beyond obvious audio production needs, it also involves the care of equipment and the people in the room. A limiter puts a cap on the maximum volume the system will output.

☐ Have a multi-band house EQ?

Every room has unique acoustic properties and what sounds good in one room can sound horrible in another – if all console settings were the same. The multi-band EQ enables sculpting the audio output to best represent the speaking voices and music style while taking the room’s acoustic properties into account.

☐ Have a multi-band EQ if using stage monitors (floor wedges or spot monitors)?

Musicians have unique needs in what they hear, specifically regarding clarity. A separate EQ for stage monitors enables sculpting an overall sound that provides that clarity and resolves feedback problems that can occur.
Have clear-sounding microphones – sound good 100% of the time?

A microphone shouldn’t have to be held a certain way to work. It shouldn’t “occasionally” crackle. Whether it’s wired or wireless, it should produce an accurate representation of the sound source. And cheap microphones sound cheap.

Have instruments matched with appropriate microphones?

There are multiple microphone types for a reason. An SM57 sounds great on a snare drum but a kick drum needs something different. The microphone’s frequency response, polar pattern, and other characteristics are designed for specific uses. Mismatch a microphone with an instrument and no amount of EQ work can overcome the differences.

Have a wireless head-worn or lapel microphone for the pastor (and worship leader when possible) to enable their use of both hands and ability to move around?

A good quality wireless microphone is a blessing to the person who uses it. And with head-worn microphones, their volume level is fairly consistent compared to when they use a lapel or handheld. And a tech wants a consistent volume level so they aren’t fighting the fader.

Have stage cables of appropriate lengths to improve stage appearance and stage safety? Are cables marked for easy length identification?

The stage has to be a safe workplace and excessive cabling can trip a person – I’ve seen it. By minimizing cable lengths, securing it to the floor in walking areas, and routing it out of the way where possible (use a longer length if it keeps the cable out of a busy stage area), anyone who walks on stage won’t feel like they are walking through a mine field.

Have working microphone and music stands?

Too often, I see these “fixed” with black electrical tape. Using cheap parts from a hardware store, they can be properly fixed. If they can’t, they need to be replaced. A musician shouldn’t struggle with a flimsy mic stand or watch their music stand drop two feet during a song.

Have proper passive and active direct boxes for instruments and other audio sources?

Consoles require input audio signals to come in a certain way, usually in balance mono signals or L/R stereo connections but do have ability to take in others. If the wrong type of signal is fed in, the console can ignore the signal or accept it but with unusual results such as a wavering volume. Whether on stage or in the sound booth, if the signal at the source isn’t of the right type, the right type of DI box will take care of the conversion. This includes computers.

Have an assisted listening device (ALD) system or have reviewed the need for a system?

Every congregation has different needs when it comes to assisted listening devices. Some small congregations need them and some do not. If they are not installed but there has been requests for them, it’s a conversation that must occur with church leadership.
- **Have spare equipment (DI boxes, microphones, cables, etc.) in case of failure or a last-minute need?**

  There always needs to be backup equipment available. Having “just enough” microphones is a sure sign you’ll soon need one more. By having extras, you’ll never be running around at the last minute before the service – or stuck with a bad mic during the service.

- **Have a stage plot of all audio and power jacks?**

  A stage plot helps with event planning and service planning. If the console can handle 24 channels but you only have ten mic jacks on stage, that could be a problem. By knowing the stage routing limits, plans can be made when they would be exceeded.

- **Have an annual audio budget for gear replacement and upgrades?**

  Gear breaks and gear has an expected lifespan. By knowing the lifespan, you can start budgeting for gear replacement a few years down the road. And by the way, tomorrow, your recording unit will go up in smoke…where will that money come from?

- **Have a location in which all equipment documentation is kept for easy reference?**

  Most of the time, once equipment is purchased, placed in use, and techs are brought up to speed on usage, then there isn’t a need to refer to a manual…unless it’s a few minutes before a service and a piece of equipment has reset itself (or was accidentally reset) back to the default settings. This is not the time to wonder where the manual is located. Keep them all together and in a place of easy access in the tech booth.

To make sure you’ve got the right equipment, check out:

- [Equipping Your Church for Audio](#)