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APRIL 2019

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# Ministry Tech

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Contributing Editors  
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Caleb Neff, Nick Nicholaou,  
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Sundermeier

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Ryan Yoder

Account Associates  
Leslie Massey, Bethany Payne,  
Syndie Porter, Lara Whelan

Administrative Director  
Rebecca Meyer

Publisher

**OUTREACH<sup>®</sup>**  
PUBLISHING

Outreach Inc.  
5550 Tech Center Dr.  
Colorado Springs, CO 80919  
(800) 991-6011

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## A WORD FROM THE EDITOR Ray Hollenbach



The book of Acts tells us that Peter took a stand, lifted his voice, and preached to thousands on the Day of Pentecost. The Good News is still indispensable, but these days we don't have to lift our voice in the same way Peter did.

Whether in praise and worship, preaching, or Bible teaching, 21st century churches depend on great [sound systems](#). And in volunteer-driven organizations, setting up sound systems and controlling the output is all in a Sunday's work. This month's issue is dedicated to exploring the myriad of sound options available to churches, small, medium and large. Each week thousands of churches rely on sound systems held together with duct tape and prayer to fill the crucial gospel communication role.

As with every tech topic, good sound is about more than gear and gadgets. The heart of ministry is always service, and it seems that the church sound crew always have their hands full with last-minute changes and special requests that make their task more...um, interesting.

We are thrilled to feature an interview with sound consultant Bobby Spangler, a choice servant of God who helps churches purchase,

install and fine-tune sound systems to fit all budgets. You'll be surprised at his take on essential equipment. Regular contributor Caleb Neff provides a detailed breakdown of the best microphones available for each instrument in the [worship band](#), along with real-world experience that will keep you from wasting money or wasting worry on what to buy.

Finally, church-sound is going worldwide via the phenomenon of [podcasting](#)—should your church get in the game? (Spoiler: yes!) Like so many aspects of the Internet, smaller churches can project a polished gospel presentation and impact people (literally) worldwide. Just 25 years ago, who would've thought that local congregations could share the good news with the ends of the earth? And via podcasting, the church really can become all things to all people, in order that we might save some.

We invite you to dig in to our feature articles. Or bring them to the next staff meeting and ask your entire team, "What tech can we use today to fulfill the Lord's Great Commission?"

*Ray Hollenbach is the Editor of Ministry Tech magazine. He has previously served as the editor of Outreach's Better Preaching Update, and as the editor of the Pastor channel at [Churchleaders.com](#). You can reach him at [rhollenbach@outreach.com](mailto:rhollenbach@outreach.com).*

# TECH CHECK 04.19

## KNOCK-KNOCK, WHO'S THERE?

Upgrade building security without hiring a security firm. Items like [Anboson's door bell home security monitor](#) is a DIY security solution perfect for a single staff member alone in a church building all day—or night. Clear video, a wide-angle lens, and infrared lighting make this affordable (\$140 at Amazon) video doorbell perfect for churches. It supports wireless lock and unlock as well. Finally a 7" TFT color display, indoor monitor allows you to take pictures automatically and store up to 100 pictures with date and time. ■



## SIMPLE (AND POWERFUL) UPGRADES FOR YOUR CHURCH FACILITY

### FIRE?!? DON'T BE ALARMED UNLESS IT'S ABSOLUTELY NECESSARY.

The folks at Nest have developed a smoke detector that can be on your ceiling and in your phone at the same time. This means you can be alerted to potential fire hazards even if you're away from the facility. [The Nest Protect](#) is billed as the smoke alarm that thinks, speaks and alerts your phone. It has a Split-Spectrum Sensor, tests itself automatically and lasts up to a decade. It's also the first home alarm you can hush from your phone without any extra hardware required. And it tells you what's wrong and can even alert your phone. ■



### LEDs — WAY BEYOND STAGE LIGHTING



Quick: What part of your facility needs the best lighting? It's not the stage; it's your parking lot. Enhance the safety outside your building with LED lights [from the folks at Rugged Grade](#). Their 300 watt NextGen II LED parking lot lights are energy efficient and throw more than 40,000 lumens on to the pavement. It's waterproof for all weather conditions, and backed by a five-year warranty. All for under \$300 per light (through Amazon). ■

**EDITOR'S NOTE:** Who can possibly keep up with all the tech options available these days? TECH CHECK highlights tech news and new gadgets that save you time, energy, money—and keep you from re-inventing the wheel. Have a hot tech tip or news item? Email [rhollenbach@outreach.com](mailto:rhollenbach@outreach.com).

# CAN YOU HEAR ME NOW?

Sound is a vital aspect of any church ministry. Whether large or small, the ability to hear in whatever presentation venue you use is one of the core components of what churches do week in and week out. Auditoriums are designed around the ability for those sitting in them to see and hear. This month we are focused on hearing. (In the December issue we will focus on seeing.)

The technology that goes into hearing continues to grow in complexity. Gone are the days of a simple signal path from a microphone, to a mixer, to an amplifier, to a speaker. Today's sound is digital, zipping across IP networks as data—not analog sound waves. While today's technology allows for tremendous potential it can also present tremendous problems. Simple systems that always worked now need a bit more skill and dedication to keep operating.

These days, churches can't rely exclusively on in-house [sound volunteers](#). Experts are needed to make sure today's complex systems are used well and without distraction. After all, the goal for a sound system should be “*never be noticed*.” No one should know it's even there, but frequently it becomes an obvious distraction due to poor implementation. Sound is cool until it doesn't work: during a church service—on a Sunday morning.

Another buzzword you hear thrown around a lot in tech and audio/visual circles is “convergence.” This is using network resources for audio/visual purposes.

The concept is great, instead of buying one network switch for data and one network switch for sound, you use the same network switch for both. This saves money and it is supposed to provide the same level of reliability. Often times—again due to poor implementation—it doesn't. This leads to churches spending twice what they need to. (Did I mention this gets complicated?)

The complexity of audio systems can also increase [relational tension](#) that already exists on both sides of the microphone. If the ministry teams on both sides of the mic aren't working seamlessly, then high-tech sound only makes communication between people worse.

Don't let complexity become the enemy of accomplishment. Determine what you need to accomplish your mission and then ensure your technology helps you to deliver the desired result. If your technology requires additional staff, either get the staff or use simpler technology. If your technology frustrates your teams, consider additional team training, or simpler technology. Don't let the complexity drive you: The ministry and mission should drive the complexity.

Remember, on the Day of Pentecost thousands were saved without any sound systems, lighting, haze, projection, effects generators, converged audio systems, translation systems or even electricity. They had the power of the Holy Spirit—and we do, too.

DON'T LET THE  
COMPLEXITY DRIVE YOU:  
**THE MINISTRY AND  
MISSION** SHOULD DRIVE  
THE COMPLEXITY.

**Jonathan Smith** is the Director of Technology at Faith Ministries in Lafayette, IN. You can reach Jonathan at [jsmith@faithlafayette.org](mailto:jsmith@faithlafayette.org) and follow him on Twitter @JonathanESmith.



## FACE FACTS: YOUR CHURCH IS A CONCERT VENUE

If aliens landed on earth and attended a Saturday night concert at a nightclub and then walked into a church the next morning, they would call both events a “concert.” If we are honest, most of today’s modern church environments—on a technical level—are essentially concert venues. We have elevated platforms with instruments, cables, stands, lighting and sound reinforcement, all for the express purpose of amplifying the “talent” on the stage. The goal of a concert is pure entertainment; the goal of the church is active participation of the people. As Christians, we know that behind the stages, lights and sound speakers there is a significant and deeper spiritual thing happening.

The spiritual thing happening can be hindered or helped by the gear we use. Many churches try to overcome the rules of rock by purchasing cheap or gimmicky gear in hopes or expectation that the church won’t care or notice. My working theory is that the church should at least match (if not outdo) the efforts of entertainment. This isn’t a sacred/secular conversation, but a practical one: The church can and should represent God within our contexts.

In one sense the church stage looks like the secular concert stage, but there are differences. Churches have volunteers, meet in the morning, and never stop meeting, 52 weeks a year: over and over again.

Church environments use volunteers with less than “professional” voices and gear. Ideally, we should have the best source sounds, but sometimes that’s not what we have to work with. Anything that can help overcome those weaknesses is a wise choice.

With [audio](#), everything starts with a *source sound* (instrumental or vocal) and makes a journey through microphones, cables, direct input boxes, mixers, and

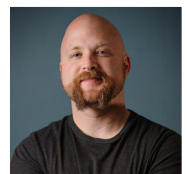
then on to the speakers. With [video](#), the pathways are similar, originating from a CPU and going through countless junctions to reach their destination on the screens. Well built, quality conduits are the lifelines of seamless production. Just one weak link between the source sound and people’s eyes/ears can be a Sunday-stopper.

When building systems from scratch or re-evaluating upgrades, look for weak points and fortify those areas with quality gear. In churches, I can’t count the times I’ve gone to adjust a microphone stand and it’s literally fallen apart in my hands. It’s common to find very inexpensive vocal microphones given to singers whose task is to proclaim the glory of God. Many churches operate with donated, used computers. This can all be frustrating and hinder the goal at hand.

The more intensely a piece of gear is being used, the better build and quality that item should have. If you are a piano-driven church, then have a great piano (maybe even the best money could buy). If you have a drum set, please buy a great snare drum. The price difference between “good-enough” and world-class is minimal when you consider the week in and week out, volunteer-led strain that churches put on their equipment.

On the mission field, I have seen whole villages transformed in worship with a two-string guitar! This reinforces the truth that Jesus will be glorified in the church without all the best gear in the world. And yet, in developed countries we must think contextually: If we choose to set up our churches as modern worship expressions, we avoid the production values of the non-church norms.

**Mike O'Brien** holds a B.A. in Music from Kennesaw State University and a Master of Worship Studies from the Robert E. Webber Institute for Worship Studies. He has worked as a producer, engineer and mixer at Lucko Sound Studio, and with a collective of 25+ musicians called Poured Out Like Wine. Together, they produced seven albums with over 15 published songs with Vineyard Worship USA. He lives in Atlanta, GA, with his wife, Susan, and son, Ezekiel. You can reach Mike at [vineband@hotmail.com](mailto:vineband@hotmail.com)



# TRENDING: PODCASTS

[MarketingWeek.com](http://MarketingWeek.com), a marketing group from England, just published [an article](#) on *Five Trends* that they believe will reshape media in the coming year. Amid rather obvious ones like “e-commerce will grow,” so will video, and Instagram is becoming more useful than [Facebook](#) for marketing, were two interesting quotes with implications for church communications and marketing in the coming year. Last month I reflected on one of these trends, and this month I’ll tackle another.

GIVE YOUR AUDIENCE  
SOMETHING THEY ARE  
INTERESTED IN (OR FIND  
USEFUL) BEFORE YOU GIVE  
THEM THE MESSAGE YOU  
WANT THEM TO HEAR.

The Second Quote:

*“Advertising in [podcasts](#) has increased in sophistication this year, with the help of new measurement tools to demonstrate its effectiveness. Ads in the form of a message delivered by the podcast host have proved to be an incredibly authentic way for brands to deliver a call to action.*

*Rather than simply buying audio impressions, podcasts deliver immersive experiences for listeners and opportunities for brands to be part of amazing settings, be it a thought-provoking conversation or a major sporting event.”*

## IMPLICATIONS & IDEAS

Podcasts are exploding in popularity and they are very easy to do. The “advertising” we might do in a podcast could be presenting the gospel message in

the context of useful information to a listener that might not otherwise sit down to listen to a sermon.

There are many topics you could address, from community service to Bible-content teaching. I’m experimenting with this myself (check out [my podcast](#)). I dearly love some younger people in my life, but they are not interested in sitting down and having me preach to them. And as many times as I’ve told them how important it is to read their Bibles, I’ve never felt like I was getting anywhere. So, I started a podcast—and they are listening! I’ve even got positive email

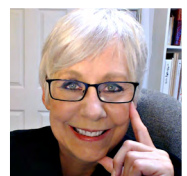
feedback on it!

This is still very new and I’m going to be trying various things and writing more about podcasts. I wrote about how I do mine ([see this piece in a previous issue](#)) using an inexpensive microphone,

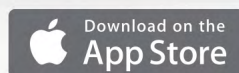
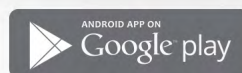
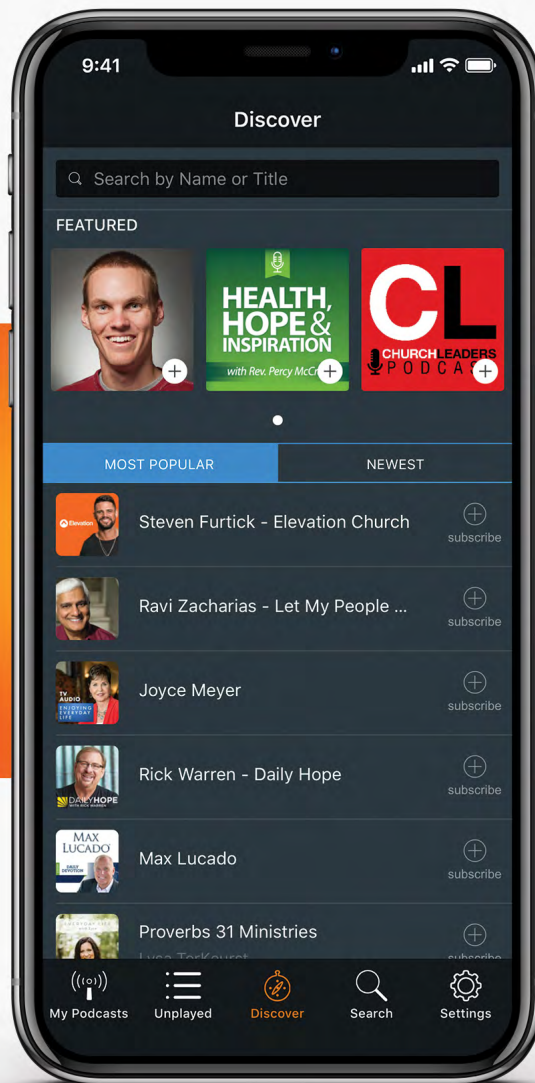
One important clarification—by doing a podcast I don’t mean merely putting up the pastor’s sermons only. Of course, you want them available online, but maybe someone in your church could do reviews of family-friendly events, or budget, or cooking tips, or Bible podcasts with a slightly different topic than what they might expect. I do a lot with history and the Bible, something people seem to find interesting.

The core idea is the same as the one above—to give your audience something they are interested in (or find useful) before you give them the message you want them to hear.

**Yvon Prehn’s** ministry to church communicators has two parts: [effectivechurchcom.com](http://effectivechurchcom.com), a site of FREE templates, strategy and resources, and [churchcomtraining.com](http://churchcomtraining.com), a Church Communicators Online Training School.







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# BEWARE THE DRONES!

As I stood, slightly hunched, fighting the gravitational pull from the endless hours of working the conference show floor, I became aware of an ever-increasing volume of buzzing, as if a swarm of hornets had descended from the structural beams supporting the roof of McLean Bible Church. The buzzing increased in proximity and volume. Fellow conference exhibitors sprang to their fatigued feet, like red kangaroos in an Australian desert, also trying to catch a glimpse of the hissing culprit. We realized all the “buzz” was about an unmanned aerial vehicle (UAV), or, more commonly known as, a *drone*. It was fascinating. The Ritz-cracker shaped, battery-operated toy was cautiously yet expertly transporting vendor sponsored, attendee “prize patrol” giveaways including gift cards and t-shirts: It was being piloted by our conference host technology director.

Today’s drones come in all shapes, sizes and costs. Multi million-dollar military drones now resemble sleek aircraft once only seen in sci-fi movies. Commercial drones can cost thousands of dollars, such as those used in the agriculture industry, hovering high above crops, giving farmers a vivid picture of their fields. On the other hand, recreational mini “quadcopters” can be purchased for under \$50.

As size and use of drones vary significantly, so do the potential new threats they pose. Recently, the FBI warned that drones could soon be weaponized to facilitate chemical or biological attacks on stadiums, concerts and other open-air venues. Due to the realistic likelihood of these attacks and additional surveillance worries, drones have been banned over national landmarks, nuclear sites, military bases and other government facilities.

But we should take personal security precautions.

Like most technology, drones have operating systems, network connections and hardware susceptible to [hacking](#) and cyber mischief. Drone captured video footage and images can be compromised: captured drone recordings can be turned against an owner.

Here are a couple of precautionary tips when purchasing or flying a drone:

1. When remotely controlling a drone from a smartphone, make sure that the phone has proper mobile security software installed. Like the high-profiled Apple FaceTime bug, phones and other connected devices are vulnerable to exploits.
2. When flying your drone, be aware of your location and avoid flying in unsecured networks. Connecting your controls to open and vulnerable networks can result in similar consequences to laptops connecting to open wi-fi networks.
3. Be aware of your physical surroundings. Civil and criminal penalties for flying your drone in a “no fly” zone can carry fines up to \$250,000 and three years in prison.
4. Purchase your drone from a reputable retailer. Otherwise, you won’t know what else was pre-installed with it or the whereabouts of its parts.

Flying drones is fun. It allows adults to have a toy again. I’m less adventurous: Lately, my “adventure” escape from the ever-changing, fast-paced security industry has been the discovery of audiobooks. I am thrilled to say that I have been “reading” more, especially spy novels! (I hope you appreciated my attempt at a Michael Connelly-style introduction to the article.) So, if drones are your thing, stay alert to what all the buzz is about.

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**Steven Sundermeier** is the owner of [Thirtyseven4, LLC](#), a leading provider of antivirus/security software. With 17 years of experience in the cybersecurity field, he is one of the nation's leading experts in virus, malware and other threats. Before founding Thirtyseven4 in 2009, Steven worked in a number of roles in the antivirus industry dating back to 1999.



A photograph of a church service. In the background, a band is performing on a stage with a large screen displaying a close-up of a person's face. The stage is lit with purple and blue lights. In the foreground, a large digital mixing console is visible, with various screens and controls. The text "INTERVIEW WITH A SOUND PRO" is overlaid in large white letters.

# INTERVIEW WITH A SOUND PRO

*Every Church Can Improve Their Sound*

by Nick Nicholas



**Bobby Spangler** operates Spangler Media, a sound consulting and sales company based in Kentucky. He's supervised six-figure sound installations all over the United States, and is an instructor for events hosted by the Vineyard Worship Group. We sat down with Bobby to get his perspective on running sound in everyday church environments.

**MT:** If I'm the sound guy at a church with an existing set up, what would be the one thing I could do without spending money to improve my existing situation? What would be the thing you'd recommend to anybody just if they already have a legacy system?

**Bobby Spangler:** Training is a huge thing in the church world. That's for sound techs. It's largely neglected. You wouldn't take somebody who's never led worship or played an instrument before, hand them an acoustic guitar, give them two one-hour lessons, and be like, "Hey, you're leading worship this Sunday," but we kind of do the equivalent of that to sound people all the time: "Here is Shiny Toy, and here are two one-hour lessons: Now don't

mess up the service." They get thrown into the hot seat without training on this massively complicated tool-set in front of them. So ongoing training for everybody is a big deal: You know, even those that have experience can always gain and deepen their skill-set. It's not that you get to a point and you've arrived. You can always get better at your craft, please.

**MT:** So where would somebody shop for training?

**Spangler:** Now, you've got to [budget](#) how you would go get training. In the world of [Vineyard churches](#) I'm a part of our new program called The Sound Summit (which may be getting a different name soon). But it's roughly a yearly event right now that



brings people together to address different skill levels. Basics, up through mid-level stuff: and there's an advanced version being developed, which isn't currently going, but we are developing specifically in the Vineyard wheelhouse.

**MT:** Can non-Vineyard people attend?

**Spangler:** Yeah, it's wide open to the whole church. There's plenty of training out there. Meyers Sound also has quality training. There are a few others that exist, and also the better installers in large sales firms will do one-on-one training or in-your-house training, but it's good to be aware that there's help: Every installation is a little bit different and even with the same equipment your space will be different than the next church down the street. There will be things that apply in only your house. So if you can bring an expert in to do training with you and your crew right in the house, that can be a super-valuable resource.

**MT:** In the world of sound, one size doesn't fit all.

**Spangler:** Right. It's good to stage these things from a kind of basic entry level 101 up through the more complicated advanced adjustments and tweaks that

you can do on your system. So if you have somebody that's never run sound, before you start dropping terms like equalizer and gaining compressor—it just starts flying right over their head and they get that glazed-over look like I'm just lost right now. So structuring from the very basics up through to the more advanced and kind of having time for your text to develop in each of those areas before they advance can be very helpful.

**MT:** What's the next vital element for church sound?

**Spangler:** Another thing that is lost a lot of times is an understanding of signal flow. [Signal flow](#) is if we have a microphone that's receiving the sound, how that sound travels from that microphone to your soundboard and then forward to the speaker system. So there is a grouping of cabling and there may be amplifiers and processors and boxes in your floor and all of them have different connection points. You want to know every point: from where it leaves that microphone all the way through that chain. If something does go wrong, you can methodically trace down the problem from the front of the house to the back and find where that failure is. It's a skill set that you would need right now to understand the places.





**MT:** How do you teach people to understand signal flow?

**Spangler:** We'll often start people on what's called stage deck duty, where their job is more set-up, before they even touch the soundboard. They're learning setting up in carrying microphones, unplugging cables, and how those route into the system on the front end of that system. Then they later learn about the booth. I want guys to understand what's happening up front before they're thrown into the booth itself.

**MT:** Okay. So training and set-up experience are the most important pieces for [midsize churches](#). You've got the whole system from microphones to speakers to whatever is in the booth. What's the single most important piece of gear? (Or if that's a dumb question, then please fix my question.)

**Spangler:** Your ears are the most important tool you have.

**MT:** Ha!

**Spangler:** No, really: If you can't trust what you're hearing, the rest of this isn't just a paint-by-numbers thing (or this would be a whole lot easier for everybody). But sound is subjective and so are the acoustics of your physical room. You need to trust your toolset—being your ears. So from the toolset standpoint, that's number one.

**MT:** Your ears: check.

**Spangler:** Now for talking nuts-and-bolts of the actual



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physical equipment, the speaker or speaker system is by far the most important. It has the most difficult job of transferring electrical energy into acoustical energy. And even the very best speakers on the market kind of do a poor job if you can look at it in measurement terms. There are limitations to what they can

produce and how cleanly they can produce it. More often than not speaker system is most critical in the equipment side of things.

**MT:** Anything else?

**Spangler:** Plenty! But as a side note: We can have the best equipment possible but if we have bad acoustics in our room,



And they think they're going to try to fix the sound buying a new speaker system or microphones or whatever. But getting the acoustics of the room corrected for your style of worship is in my opinion equal to or even [more important](#) than new sound equipment. So for a lot of smaller churches that have small budgets we can eyeball the room to get a general sense of what's going on. We have a basic calculator that we can plug in the dimensions of the room and tell it things like this is a sheetrock wall with a carpet floor and drop ceiling. Frequently there are some acoustic manufacturers that will allow you to plug that stuff in and get the very basic end of acoustic treatment. **MT**

we can't fix those bad acoustics by throwing new equipment at it. So very often I will have initial dialogue with the church where they're having struggles getting the sound quality that they want into the seats and I start to get some information on the room. Whether I'm physically there for a site survey or I'm doing it remotely through a Skype call. Even on a Skype call I'll ask them to walk me around the space, and I'll see this big room that's all sheetrock and flat surfaces and no acoustical treatments anywhere.

**Bobby Spangler** is rolling into three decades serving in "the industry," he has installed systems and trained techs in many churches and schools throughout the U.S. He mixed FOH for portions of the 2015 Vineyard National Conference (Hosted at the Columbus, OH, Vineyard), and has recently upgraded and installed systems at several Vineyard churches around the U.S. He's engineered on projects released by Vineyard Worship and Tooth and Nail Records and has toured with several local and national acts as their FOH engineer and road tech. Bobby and his wife, Jennifer, live in Kentucky where they raise their three kids and serve at the Vineyard Church. Check out his website: <http://www.spanglermedia.biz/>

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# EVERYTHING YOU NEED TO KNOW ABOUT CHURCH MICROPHONES

*(You Can Thank Us Later)*

by Caleb Neff

**W**ith the obvious exception of talent, nothing is more important in live sound than the [microphone](#). The microphone is the “ear” that captures the sound, and everything else that happens downstream—preamp, equalization, compression and effects—can only manipulate the raw material provided by the mic. This is why it’s really unfortunate that all too often churches haven’t considered their microphone choices since the sound system was first installed. I commonly find this to be one of the biggest areas of need for improvement, and in terms of expense, there’s probably no other place in your live sound budget where you’ll see a bigger bang for your buck.

Writing any definitive guide is challenging for a few reasons: 1) There are so many good choices in the world in 2019 and it’s hard to cover them all, and 2) since every situation is different (style of music, size of room, stage layout, and on and on) sometimes the answers are different. If you’re struggling in this area, I’d be glad to help. That said, here is a list of affordable tried and true solutions, curated with the help of a few trusted colleagues in the industry.

Drums: Still using the \$500 “all seven microphones in one box” starter kit? Please, please let me help.

- *Kick drum* – you have no idea how many leftover cheapo microphones I’ve seen thrown in kick drums. Just because you can’t see it, doesn’t mean Jesus doesn’t know what you did. Also, it sounds terrible. Try a Shure Beta 52 (\$189) for extra low-end heft, or an AKG D112 (\$199) for a little extra beater attack. Both microphones are aggressively “pre-EQ’d” to sound good on modern kick drums. Play with (and pay extra attention to) placement.



- *Snare* – the Shure SM57 (\$99) is a classic here for a reason, and will always reliably get the job done. The Beyerdynamic M201 (\$299) is a great “step up” option—the hypercardioid pattern means great rejection of hi hats, and it has a more natural EQ response. If your drummer has a great sounding, properly tuned snare, the Beyer will help that come across clearly.



- **Toms** – The Sennheiser e604 (\$139) has been a favorite of mine for a couple years in this application. They're small, light, relatively cheap, attach to a drum's rim, and sound really good. I use them both live and in the studio a couple times a week.



- The Heil PR28 (\$149) is another great option with tons of body. Both mics have built in upper midrange EQ boosts that will help your toms cut through the mix.

- **Overheads** – I am in love with the Line Audio CM3 (\$145, only available direct from manufacturer or on eBay) because it is the most delightfully boring,



vanilla, sounds like nothing microphone I've ever heard. The issue with cheap condenser microphones (the ones that came in your \$500 starter kit box) is, well—they're awful. They are made to be really bright so that when you first plug them in you are impressed with how hi-fi they sound. In practice, that bright sound makes every single cymbal and hi-hat hit irritating. Often, my first step when I'm

running sound at a church with cheap overhead mics is the mute button. The CM3 adds absolutely nothing to your sound. Getting a mic that truly does that is usually really expensive. If your kit sounds good, the CM3 will translate that. If your kit sounds bad, it will sound exactly the same way through the CM3, and you probably need new/different cymbals, a conversation for another day. The other great thing about them is they have a very wide pickup pattern, meaning they are forgiving in terms of placement, and often one can get the job done. The Shure KSM 141 (\$399) is another great option, providing a full sound that's a little more pre-EQ'd in comparison to the CM3.

**Bass:** (Yes, we're talking about mics, but since we're not usually mic-ing a bass amp, let's talk about the first thing the bass sees—the direct box.) Running the bass through a cheap DI isn't making things easy for the front of house person. The Aguilar tone hammer (\$245) is a super flexible tone machine that can make it so you're sending a nearly finished bass sound from

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in the Lord  
AND HE<sup>2</sup> WILL  
give you THE DESIRES  
of your heart  
Psalm 37:4

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— Dan Wilt

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the stage. The Avalon U5 (\$715) is a well-known studio staple DI with EQ presets for glorious bass tones. You've definitely heard it on some of your favorite records, and it rocks in live situations as well.

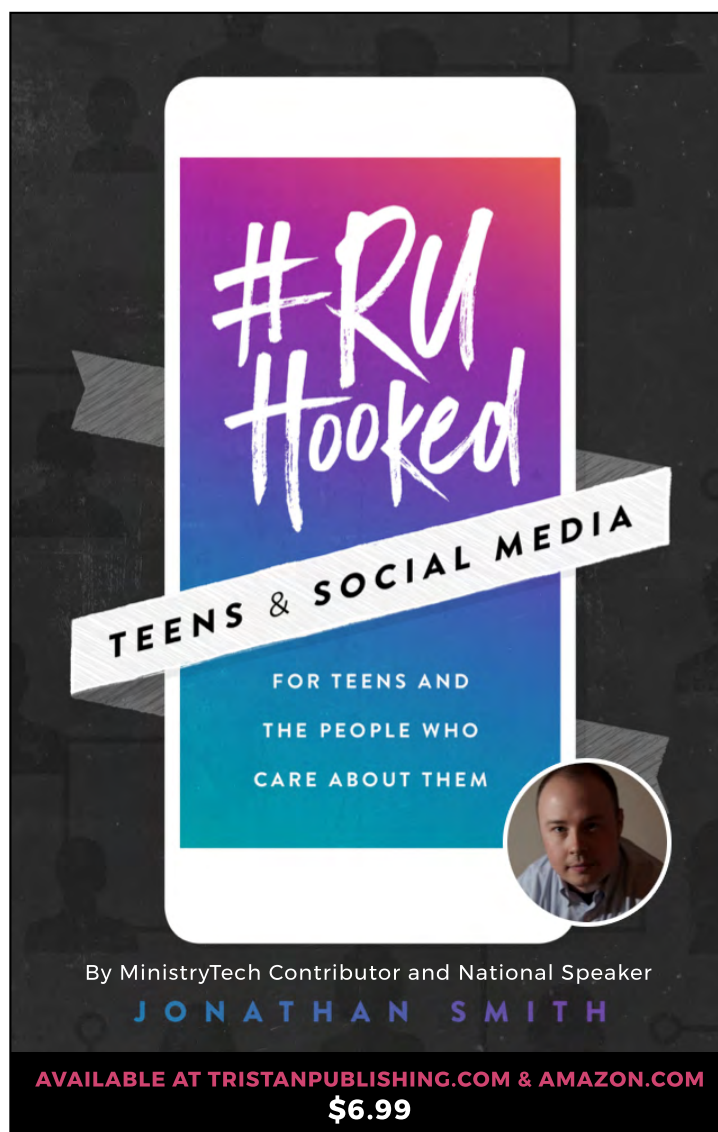
Guitar amps:

- Like it is on snare, the SM57 is a classic for a reason. The EQ curve of the mic tends to benefit what you want to hear in the mix from the guitar. However, in situations where you want a more neutral place to start from, the Cascade Fathead (\$159-195) is a fantastic option. It'll give you a fuller low end and a more natural midrange, with a pleasantly rolled off high end. The Fathead is a ribbon microphone and therefore has a figure-8 pickup pattern, so it's ideal for a situation where your amps are off stage.
- [Acoustic guitars](#) – Again, we're talking about DI's here, but as with bass, having the right thing is a pretty big deal (and there are more options than ever before). Looking for a great sounding DI with no controls to mess up? Try the Radial JDI (\$199). Looking to be able to control your guitar from the stage and send a more finished sound to the front of house? Try the Fishman Platinum Pro EQ (\$299). I have one and love it.



Keys: Usually what you're looking for here is a quality DI that will transmit your sound purely without degrading it. The Radial is a great option here as well.

Horns: If your church uses horns, please stop using those cheap clip-on mics. If you ever solo those things in your headphones, you hear something like a terrible harmonica, regardless of the brass instrument being mic'ed. Shoved down into the horn isn't necessarily the best place to mic anyway—a little bit of space is your friend. If you have extra SM58's, they can do a great job. Another really cool option is the Electro-voice RE20 (\$449)—they are full sounding with a really great midrange.



Vocals:

- The classic Shure SM58 (\$99) is still a great option, and probably will never have any rivals in terms of durability. Seriously, if you haven't seen the videos where they get submerged, burned, dropped from a helicopter, run over by a bus, and used for shooting practice by a hockey team, you probably should: [youtube.com/watch?v=w9qoou7mSCM](https://www.youtube.com/watch?v=w9qoou7mSCM)
- Other great options include the Beyerdynamic M88 (\$399), which has great rejection and usually doesn't require tons of EQ, and the Neumann KMS 105 (\$699), which is a condenser microphone, and as such sounds very smooth and detailed.

**Finally, the pastor's mic:** Last but certainly not least, we cannot have the mic we are solely relying on for at least 60 percent of the service (to say



nothing of the importance of what is being said) be a slouch. My experiences as a sound consultant might be a little biased (since people usually are only calling me when there is a problem), but I have almost never walked into a church of any size that has a good sounding microphone for their speaker. Tragic.

There are two reasons for this—cheap wireless systems and cheap headset microphones.

1. *Cheap wireless systems are universally terrible.*

Anyone who knows me knows my disdain for wireless systems: They are overly expensive ways to degrade our audio. My most well-known article for this magazine is about [this very topic](#). This is why you don't see any wireless options recommended in the "vocals" section. You should generally avoid them when you can. However, there are obviously situations where wireless microphones are a near necessity, and this is one of them. For starters, take your wireless budget and double it. Seriously. A good wireless system like the Shure QLXD is going to set you back over \$900. As the saying goes: buy once, cry once.

2. *Cheap head worn microphones are also really bad.*

They have all kinds of irritating frequency spikes and once you're done EQ-ing them out, the voice coming through them ends up sounding like it's coming through a tin can. You can spend \$500 or more on a system that still sounds pretty bad, so why not just budget for the right thing? Or maybe just hold a wired SM58 until someone in your church feels led to make a donation. The DPA D:fine series is really good: They start at \$599.



I have also been hearing good things about the Thor Hammer, which in addition to having a pretty great name is only \$349 (only available direct from manufacturer).

So, my friends: When the right microphone is chosen for the right application (and properly positioned), so many headaches can be avoided! Godspeed on your quest for pleasing audio. **MT**

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# START YOUR PODCAST FOR UNDER \$100

*Honestly—How Much Gear Do You Need  
to Get Started*

by Ray Hollenbach



So, you want to produce [your own podcast](#). It's pretty easy, actually: Sit down at your laptop, open up an audio application (for example Garage Band, which comes free with every Mac), and start talking. Save and upload to a server and *Boom*, you're done. You just need to have something interesting to say. Or not, because if your goal is to produce your own podcast, you don't even need to say anything important, or even do a good job of audio production—you don't even need listeners, really.

But wait: You want to produce your own podcast because what you have to say is important and you want to connect with people. Well then, that's a different story, because you'll need a few basic items to give you a quality start.

There are two hemispheres to a podcast: content and production. As for content, well, that's really up to you. And while we at Ministry Tech wish you well, we can't help in that area. (Except to recommend podcasts like [The ChurchLeaders Podcast](#) as an example of engaging conversation that draws new listeners.)

But we can help with respect to production. If you need help with apps and gear, this article's for you. You don't need much—you can do it for under \$100—but you certainly need the following items. And the list is surprisingly small.

**Get a decent microphone.** And really, decent is all you need. If you're just getting into the podcast game, don't spend more than \$100 on a microphone. Try doing your podcast for six months with a [770 MXL Cardioid condenser mic](#). Amazon has them for \$75-95. If you're still podcasting regularly after six months, then maybe (maybe) you'll want to look around for a high-end mic. But keep in mind that most listeners are not audiophiles, and they're listening for content, not quality production. If a listener can hear you clearly while she's doing a spin workout, then you're golden. Add a microphone cord with a USB connection, and



you've turned your laptop into a beginner's sound studio.

**Use an audio editing software.** Super easy. Check out Audacity's free open source, cross platform, audio software. (It's driven by donations—would it kill you to give them 10 bucks for their free product?) It's compatible with both Apple and Microsoft, and their documentation is easy to follow. Create an audio file by mixing in some music at the opening and the close (see below). Your file is ready to find a home on the Interwebs, and there are plenty of sites ...

**Set up an RSS feed.** You don't even need to know what "RSS" stands for. It's a protocol thing that allows users and applications to access updates to online content in a standardized, computer-readable format. But don't worry: It's also super-easy, and it's a basic requirement for, say, iTunes podcast uploading. You can find a [step-by-step guide](#) from the folks at Soundcloud, and their feed is compatible with all the big podcast providers. [Mixcloud](#) is also used by podcasters, and is user-friendly as well.

**Add a sweet musical intro and outro.** It's the 21st century, which means you need bumper music, but you don't need to be best friends with an indie musician in order to give your opening a professional feel. Fortunately sites like [Bensound](#) provide royalty free music files that will lend a polished feel to your podcast.

**You're ready to upload!** People need to be able to find your podcast, and that's where sites like iTunes, [Podbean](#), Liberated Syndication ("[Libsyn](#)"), and Soundcloud (yes, they host, too) come in. The gang at Wix recently published a [guide to the top podcast hosting sites](#). Like so many things in the tech world, iTunes is the dominate source for finding and playing podcasts, so you really need to be there, but a presence at these other sites will definitely help a greater audience to find you—and "getting found" by your audience is a really big deal, but it's beyond the scope of this article.

Perhaps you've noticed that, besides the microphone and cable to connect to your laptop, nearly everything else is free. You can get started for

well under a hundred bucks! The real benefit to this low barrier to entry is that you can learn by doing! There's no shortage of companies that offer to pull all this together for a fee, but there's honestly no need. It would be better to DIY your podcast, practice and refine your approach, and then begin to look for your audience.

The tech revolution has torn down barriers to entry for nearly every type of media, and podcasting is no exception. And because the pod-o-sphere is so vast, you can practice producing and uploading your podcasts before going after that vast audience. In the wild west of new-tech, you can learn by doing. So you might as well set aside a few months to learn-by-doing, and then—when you've got everything running (and sounding) smooth—go out and find your public. **MT**



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fully fulfill  
the Great  
Commission**

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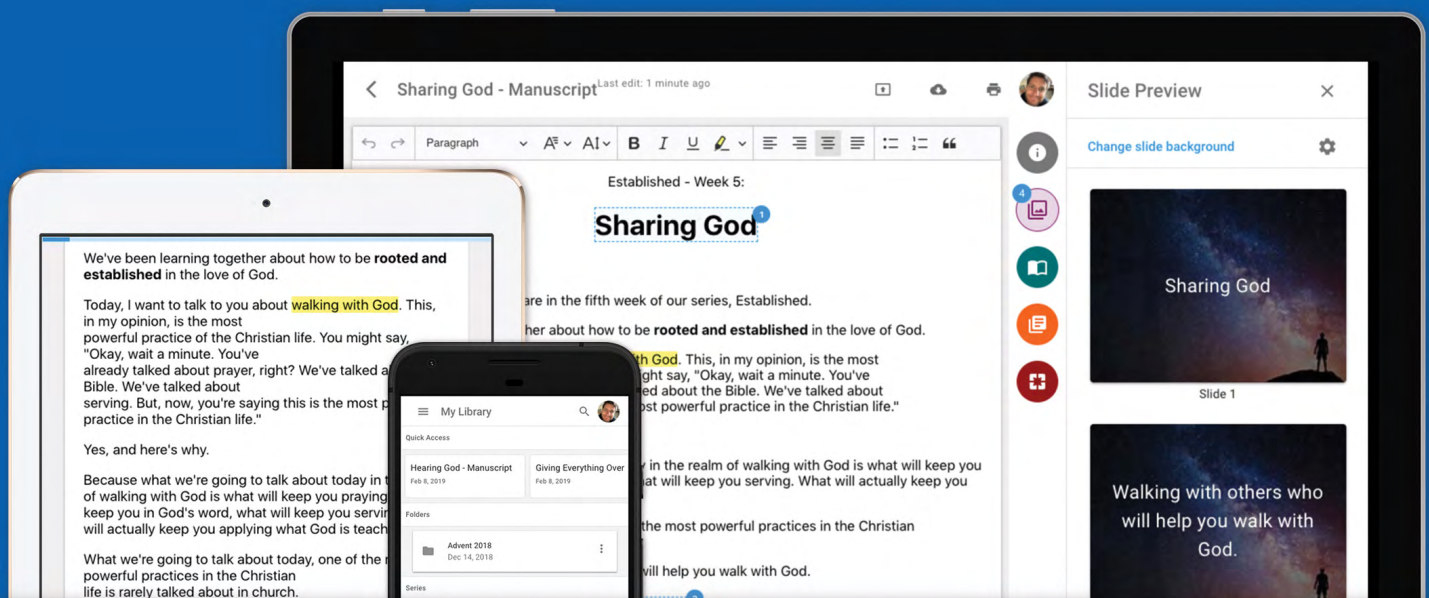
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