

TECHNOLOGIES FOR WORSHIP

OCTOBER 2020 | TFWM.COM

THE CHOSEN



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REVIEWS:

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SK-HD1800 BROADCAST AND
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YAMAHA'S
TRANSACOUSTIC SERIES

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JOHN CHEVALIER

I have now officially come full circle. I started writing for TFWM in 2005, we have taught at conventions together, I brought a band to perform on the demo stage at INFOCOMM, and this month I am the guest editor. I am honored.

Over the years, I've had the unique experience of being on both sides of production technology. Starting out in a rock band, and after being on stage with a fair amount of audio gear, lighting rigs and pyrotechnics, I naturally gravitated towards the "Tech Side". In the local church I've served in a number of capacities, from audio engineer to musician/worship leader and pastor, there's not a lot that I haven't done. My ministry life is now focused on supporting church leaders (check out our website at www.visionaloha.com) and leading worship when the opportunity arises. My full-time job is teaching audio and video production at a local high school in northern California. I am surrounded by production tech and love it.

Taking on the job of editor this month has been no small task as the face of the church has changed so much this year. The current global pandemic has forced the church to make some drastic changes in a short period of time. These changes have not been minor and in most cases have come

with a major price tag. Everyone who has written this month has addressed the issue from different angles and are not writing from theory, but from first-hand experience.

As we look to the future and the possible outcomes of the coronavirus, it would be easy to focus on the challenges here, but this is once again a real-life reminder that the church is not a building, it's people. God's people!

In times like this, we have an opportunity to meet needs and to show people the love of Jesus in ways that we haven't had the opportunity to do in the recent past. Maybe, instead of using our technology to "produce" services for those inside the church it's time to think outside the box and use our technical abilities to reach those who would otherwise not walk into a church building. It's time for us to listen, not preach. To relate, not condemn. And to be a light.

Of course, we want to use everything we have to create a great experience for those in the church, but right now is an opportune time to exercise true faith, communicate real love, and be the voice of hope to this new world that we are all navigating. "Let's Roll, Church!"

I hope you enjoy this issue as much as I did helping to create it. 🙏

TECHNOLOGIES FOR WORSHIP

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SHURE ANNOUNCES PASSING OF MARK BRUNNER, VP OF GLOBAL CORPORATE & GOVERNMENT RELATIONS



The following is a statement from Shure President and CEO Christine Schyvinck:

“It is with a heavy heart that I announce the unexpected

passing of Mark Brunner on October 1. Mark was more than our VP of Global Corporate & Government Relations; he was family to so many of us at Shure and in the industry.

Mark joined Shure in 1989, and he touched the lives of everyone he worked with. Mark was a trusted advisor, a mentor, and most importantly, a friend.

Our thoughts are with Mark’s family at this difficult time.”

Mark served as a tremendous ambassador for the company. He held several key positions, including Director of Advertising, Managing Director of the Musical Instrument and Touring Sound business unit, and Senior Director of Global Brand Management. He was instrumental in helping Shure build an even stronger reputation among associates, customers, industry influencers and the public.

Additional information about the company’s celebration of Mark’s life will be shared shortly. In the meantime, cards or letters for the family can be sent to the following address: **T**

*Mark Brunner Family
c/o Shure Incorporated
5800 W. Touhy Avenue
Niles, IL 60714*

MICHAEL MUELLER, VICE PRESIDENT OF SALES AT LAWO

Lawo mourns the premature passing of colleague, team member, and friend, **Michael Mueller** (66), who passed away after a brief, yet severe illness on Saturday,



September 26, 2020 amid his loved ones.

Michael Mueller brought a wealth of experience to his positions as US Sales and Marketing Manager, and later as Vice President of Sales, with Lawo North America. After his initial sales position with Audio Techniques of Stamford, CT in the mid-to-late 1980’s, Mueller went on to assume positions with Scharff Weisberg Associates, Siemens Audio Inc. /AMS-Neve, Inc., Solid State Logic, and Fairlight USA. Prior to joining Lawo North America, he was Vice-President, Sales and Marketing for MediaGear, Inc. of Los Angeles, CA.

In his capacity with Lawo North America, Mueller was responsible for the further development of the Lawo brand identity throughout the United States and was also charged with increasing sales of the company’s numerous products.

Michael joined the company in 2008 when the Lawo brand was hardly known in North America. Michael’s incredible passion, hard work, dedication, positive attitude and pure likeability, are among the reasons that the company today enjoys such widespread success and reputation in this part of the world. Known for his witty sense of humor and kind-hearted personality, we will remember Michael as a key member of the global sales organization, skilled bass player in the Lawo band, a renowned face of the audio industry as a whole and a true gentleman and friend. He will be missed. Our deepest condolences go out to his wife, family and friends at this difficult time. **T**



Franck Fabry Appointed Vice President of Sales for A.C. ProMedia

A.C. ProMedia, distributor of state-of-the-art products and technologies aimed at the Fixed Installation & Architainment Markets is pleased to announce the appointment of Franck-Olivier Fabry as Vice President of Sales. Franck has a vast amount of experience spanning across a variety of business development areas for AV manufacturers such as Telex, Bosch,

Williams Sound, Meyer Sound, and L-Acoustics. He has held various senior sales management positions throughout his career and has built an extensive network of industry contacts with system integrators, specifiers, and end-users.

Reporting to Jean-Louis Blanchard, V.P. of Strategic Business Development, Franck will be responsible for developing and managing A.C. ProMedia’s sales channels in both the USA and Canada. “I am confident that Franck will be instrumental in establishing A.C. ProMedia and its brands as key players in the North American market,” explains Blanchard.

“I’m excited to embark on this new adventure and think about the many opportunities ahead. I’m looking forward to further expanding the distribution of already well-established brands like LUMINEX in North America and I am excited to tackle the challenges of promoting audio brands like AUDAC and HARVEY, brands experiencing rapid development globally and steadily making their way to the USA and Canada.” Comments Fabry. “With the active backing of the LUMINEX, AUDAC and HARVEY manufacturing teams and the collaboration of my talented A.C. ProMedia and A.C. Lighting colleagues, I am confident we can bring renewed energy in spreading the word, demonstrating the effectiveness and uniqueness of the solutions to all commercial and installation sound specifiers, installers and anyone who loves a great sounding installation.” **T**

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SAMANTHA POTTER TO DRIVE ALLEN & HEATH USA COMMERCIAL AUDIO FIELD SUPPORT

Allen & Heath USA has made a key appointment as part of its increased expansion into the commercial and install market. Based in Kansas City, Missouri, Samantha Potter has been tapped to fill the Field Support - Commercial Audio role. Working under the American Music & Sound (AM&S) umbrella, Potter will assist and support further adoption of Allen & Heath solutions in the United States installation market across all verticals. With a long history of hands-on live audio mixing as well as successful stints as a freelance System Design Consultant, Technical Producer, and IT Media Supervisor, she has established herself as an industry thought leader.

“My work as an author, editor, and educator with ProSoundWeb, Church Sound Magazine, Church Sound University, and many other pro audio industry publications has really helped me form a good ‘lay of the land’ across the pro audio industry,” said Potter. “I’m excited to pair up my background with the stellar audio pedigree and install product offering at Allen & Heath and take us to the next level.”

Tim Schaeffer, Senior VP for Allen & Heath USA added, “From next generation audio matrix solutions like AHM-64 to tools like our Custom Control app and award-winning range of IP controllers and I/O, no doubt Allen & Heath has powerful solutions for education, worship and corporate installations. Adding powerhouse folks like Samantha to the team will allow us to amplify this message and it goes a long way in demonstrating our goal of being the go-to audio brand — not only touring engineers and live sound pros, but also for integrators and consultants who put audio quality and ease of use at the top of their requirements list. We’re excited to have Samantha on board to drive these goals ahead.” **T**



ATLONA ADDS AV INDUSTRY EXPERTS TO EMEA SALES AND ENGINEERING TEAM

Atlona, a Panduit company, has added two technical experts to its EMEA sales and engineering teams to help bring customers’ AV system visions to life. Mustafa Bostanci and Timo Schonmeier join Atlona as Sales Engineer and Technical Sales Engineer for Networked AV, effective immediately. Both report to Kobi Levy, Director of Technical Services, and are based at Panduit’s Customer Briefing Center (CBC) in Frankfurt, Germany.



Bostanci joins Atlona from AVI-SPL in Germany, where as Lead Technician he oversaw the installation, inspection and approval of AV systems and collaboration solutions for their end customers. His expertise in software solutions is particularly beneficial for Atlona partners and end users transitioning to AV over IP systems.

In his new role, Bostanci will help Atlona partners and dealers develop IP and circuit-based AV systems, and support both customers and Atlona sales managers through all design and documentation processes. He will additionally assist with product demonstrations and customer trainings online, at the CBC, and on the road as situations allow.

Schonmeier is an experienced system support engineer that joins Atlona from Extron, where he took on roles of increasing responsibility over an eight-year period. His most recent position as System Support Engineer saw him focused on the commissioning of AV systems at end user facilities.

At Atlona, Schonmeier will assist customers in the development of AV system designs and documentation, while also helping customers identify and problem-solve technical challenges across every step of the sales, integration and commissioning journey. Schonmeier will also serve as technical subject matter expert for Atlona’s training and education initiatives, including the company’s growing library of online video resources.” **T**

Austrian Audio Appoints Group One as Their Exclusive US Distributor

The company will represent Austrian Audio’s entire product range across the audio recording, entertainment sound, and broadcast industries

Austrian Audio announces having entered a distribution agreement

with Group One Ltd to serve as their exclusive US distributor. Beginning September 2, 2020, Austrian Audio’s critically acclaimed microphone and headphone lines and all future products are available to Group One’s

vast network of dealers and contractors.

Martin Seidl, CEO of Austrian Audio, is excited about the new partnership: “We are confident that Group One’s experience, enthusiasm and reach into the market will enable us

to take Austrian Audio to the next level of growth in the US and Canada. My team and I are looking forward to working with Group One very much, and I anticipate this to be a successful relationship for both companies.” **T**



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Tauranga Elim Church Equips New Facility with Premium Audio System from HARMAN Professional Solutions

To enhance its new facility with pristine sound for worship services and other events, Tauranga Elim Church selected a state-of-the-art HARMAN Professional audio solution that includes JBL Professional loudspeakers and Crown amplification.

Among Elim Church's several locations throughout New Zealand and other countries, Tauranga Elim recently moved to a new facility. A move that was nearly two years in the making, the new location is much larger than the previous building and includes an auditorium that is able to accommodate 550 people. Wanting to offer guests and attendees an engaging experience with great acoustics to support the live modern contemporary music, along with crystal-clear speech intelligibility, Tauranga Elim required a premium sound system that delivers consistent tones at all volume levels with smooth, even coverage across the entire facility.

"As a church, we were blessed to have the opportunity to develop the shell of an industrial building into an awesome place of worship that speaks to the flavor and character of our people," said Sean Verwey, Audio/Visual Coordinator at Tauranga Elim. "For the audio system in

our auditorium, our requirements were simple; we wanted a system that sounded great, was punchy yet smooth through the dynamic range of a service, suited our style of music, covered the wide space evenly and overcame the challenging acoustics of the venue."

After experimenting with various speakers from different manufacturers, Tauranga Elim outfitted the auditorium with two JBL CBT1000 line array column loudspeakers supplied through Sound and Vision Connection. Custom-flown in a left-right configuration, the CBT1000s feature JBL's Constant Beamwidth Technology™, which provides adjustable vertical coverage and a tapered horizontal waveguide to deliver consistent sound across the auditorium. Further ensuring even sound distribution, a JBL CBT 70J-1 two-way line array column loudspeaker was added to provide audio to the auditorium's mezzanine level.

Complementing the column loudspeakers with accurate, low-frequency performance, the system also includes a JBL VT4883 subcompact dual 12" subwoofer that is used as a flown low-mid extension and a VTX G28 dual 18" ground subwoofer providing a solid low-end for the

contemporary worship. To power and process it all, Crown I-Tech 4x3500HD high-powered tour sound amplifiers and CDi 4|300 amplifiers were deployed, providing proven reliability along with the convenience of four inputs per amplifier. OMNIDRIVEHD delivers enhanced performance on the iTech 4x3500HD.

"As a church, we are very pleased with the result. We heard some great systems, but we felt what HARMAN and JBL Professional offered met our requirements perfectly," Verwey said. "The JBL CBT1000 loudspeakers provide more than enough grunt for youth services and special events, yet is easy to mix during a regular Sunday service, it simply sounds amazing."

"The JBL CBT1000 line array column loudspeaker is a perfect solution for customers that are looking for line array loudspeakers but don't quite have the budget for a fully-fledged line array system," said HARMAN Church Audio Specialist Eli Murray from JBL Professional distributor JPRO. "Its consistency in tone from soft levels to loud levels and ability to cover audio over wide and long distances and overcome tricky acoustic spaces make it an asset for church and auditorium environments today." **T**

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St. Mary Royal Oak Bestowed with L-Acoustics Sound Fit for a Queen

For over six decades, St. Mary Catholic Church in Detroit's Royal Oak suburb has faithfully served the community through its food and clothing pantry, holding regular mass, and teaching students at its parochial school. With the joyous challenge of finding space for a growing congregation, this summer the parish relocated its music ministry to the rear balcony of its nave, thereby creating more main floor seating. It also brought in Detroit-based Sound Planning Communications, Inc. (SPC) to equip the space with a new sound reinforcement solution primarily composed of L-Acoustics A Series and Syva enclosures.

According to SPC's design engineer, Jeff Wilshaw, the church had been in need of an audio upgrade for some time. "St. Mary has a classic Catholic church architecture, with stone and marble surfaces and high ceilings, and the loudspeaker system they were previously using was pretty much spraying energy all throughout the room," he describes. "Nearly a third of the sanctuary was unusable as the space was so reverberant, so we immediately knew that we needed to specify a product with exceptional pattern control to prevent unwanted energy loading the walls."


Having done several successful install projects with L-Acoustics ARCS enclosures in the past, SPC turned to the line's next generation, the new A Series. "The church's worship space is 35 feet wide by 110 feet long, and every bit of it is highly reflective surfaces, so it quickly became apparent, using Soundvision design software, that the L-Acoustics A10 would be an ideal choice for the main liturgical array system," Wilshaw says.

SPC installed a single A10 Focus over an A10 Wide at the front of the room, and a second identical array 40 feet out into the house. The top enclosure allows the system to tightly focus the energy in a 70x10° pattern for the farther pews, while the

lower one gives a 110x30° pattern for the nearer seating.

With St. Mary's musical ministry—a mix of choirs, individual vocalists, instrumentalists, and percussionists—now performing from the rear choir loft, SPC installed a Syva-based solution at the back of the nave to deliver rich musical reinforcement and proper imaging. Two Syva colinear systems are mounted to the rear wall, just below the far left and right edges of the balcony face, while two Syva Low enclosures are mounted a bit farther out and higher up for extended bandwidth and low frequency contour.

"The Syva system was chosen for its unique ability to throw medium distance with a very narrow vertical pattern control, as well as for the fact that it practically blends into the back wall of the room, especially with the custom RAL coloring that we've used for all of the L-Acoustics enclosures," says David Corbat, SPC's sales engineer.

Justin Umbarger, St. Mary's new Director of Sacred Music, says: "Because our music is performed from the back choir loft and the spoken word is proclaimed from the front, we now have two systems that can be used separately or in tandem, with each system perfectly tuned for its purpose. The result in power and clarity is just spectacular, especially with the music system, which is able to stand up to our pipe organ. As a musician, I personally love the flexibility of the Syva. Just this weekend alone, between all of our masses, we sang Haydn, Elevation Worship, and traditional hymnody. The Syva system flawlessly supported the needs of each genre. All of it sounded fantastic." 

ROYAL OAK, MICHIGAN'S ST. MARY CATHOLIC CHURCH IS NOW HOME TO A NEW L-ACOUSTICS A SERIES LOUDSPEAKER SYSTEM FOR ITS LITURGICAL SOUND REINFORCEMENT. INSET: A CLOSER VIEW OF ONE OF THE PARISH'S NEW L-ACOUSTICS A10 ARRAYS

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Unite Wireless Intercom Bundles

Unite is the digital wireless communication system from beyerdynamic that allows people to communicate and interact with each other. This digital platform opens up new possibilities for improved dialogue between people, regardless of when, where and how they wish to communicate. Unite connects people – even over larger distances, language barriers or with sensory disabilities.

Using the DECT standard to provide registration- and license-free use of frequencies up to 12-16 groups in parallel, Unite's long operating time and wide operating range give user stable transmissions with automatic frequency management. Unite combines a wide and constantly increasing range of uses in one system. With updates and upgrades, as well as its configurability, the system evolves with your needs.

“We developed the 4-, 8-, and 12-unit Unite wireless intercom bundles to help our customers more easily manage their wireless intercom systems. The bundles make it easier to keep the gear updated, charged and ready for its next use,” said Chris Norris, Sales Manager, Communications. “Houses of worship love the versatility, performance, and durability the Unite system gives them. They also love the fact that it is a true plug-and-play solution, with no hardware installation necessary. With its 980-foot range and 20-hour battery life, Unite is an elegant wireless intercom solution at a very cost-effective price point.”

The new bundles include:

- One TP Unite Bodypack Transmitter – The UNITE TP transmitter hosts the audio channel for all units in the system. The TP has an external microphone or headset connector. Three audio interfaces (USB, analog and Bluetooth*) and a mute function round out the features.
- 3-, 7- or 11-RP-T Unite Bodypack Receivers – The Unite RP-T receiver establishes a point-to-point connection with the TP, and enables you to have dialogue with any other person on the intercom system. With a talkback button and an integrated microphone or alternative headset connection, anyone can speak. From the transmitter, users can select who will hear which discussions. Up to three people can speak simultaneously in groups of any size. DSP functions



include ALC, noise gate, noise canceller, equalizer, ducker and compressor. The receivers sport a long operating time, and a connectable inductive loop for hard of hearing users.

- 4-, 8-, or 12-DT 287 Unite Single-Ear Headsets - The robust DT 287 Unite headset is known for its optimal speech intelligibility. The microphone clamp rotates so that the microphone can be worn either on the left or on the right. Uses include intercom applications, conferencing, and blind coverage with monitoring driven by a powerful neodymium magnet.

- A 4-slot CDS-4/2, 8-slot CDD-8/4 Cockpit Desktop Charger, or 12-slot CR-12P Rack Charger includes charging slots for both handheld and pocket devices. An ethernet connection allows for network integration for extended configuration, firmware updates, monitoring and pairing. To protect against unauthorized listening, a code can be assigned in the software by the user that is transmitted to the device during the pairing process to secure the channel. It also includes a function switch for pairing and reset and a USB-C connector for pairing and charging.

Unite digital wireless communication products are engineered in Germany. **T**

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MORE READY
THAN EVER



K3 Full-Range. Compact. No Compromises.

Introducing K3: a versatile loudspeaker satisfying all your requirements for mid-size events and venues without any compromises. Completing the K series line, K3 boasts an optimal mechanical design for reduced weight, Panflex™ variable directivity, laminar vents for a powerful, linear low-frequency response down to 42Hz, and class-leading SPL. Optimized for audiences of 1,000 to 10,000, K3 reduces the need for amplification and dedicated subwoofer, making it faster, more straightforward, sustainable, and economical to deploy. It's ready for your next event. l-acoustics.com





Canon CINE-SERVO 4K Camera Lens

Canon has introduced the CINE-SERVO 25-250mm T2.95-3.95 (CN10x25 IAS S), a new CINE-SERVO cinema lens designed for use with 4K cameras. The new lens, which is available in both EF and PL mount, features 10x optical zoom, a built-in 1.5x extender and a powerful and removable servo motor drive unit, providing broadcast-friendly shoulder operation for ENG/EFP and documentary style shooters. The lightweight design of the lens (6.7 lbs.) is remarkable given the zoom range and feature set, especially when compared with other lenses of similar focal lengths. This outstanding model, as well as the Sumire Prime Lenses announced in 2019, have further strengthened Canon's robust lineup of Cinema Lenses.

Similar to the existing award-winning 17-120mm and 50-1000mm lenses, the CINE-SERVO 25-250mm offers outstanding 4K optical performance thanks to its ultra-low dispersion glass and a large-diameter aspherical lens. Combined with Canon's unique optical design technology, these components work to help correct color fringing and limit chromatic aberration during operation. The lens features Canon's renowned warm color science and an 11-blade aperture that produces a beautiful, smooth bokeh.

The new lens is ideal for cameras with a Super 35mm sensor. While the 10x zoom covers a focal range of 25-250mm, the built-in extender stretches that range to an impressive 375mm with an added benefit of allowing for full-frame sensor coverage with only a stop of difference in light loss.

The new lens is fully 4K-ready, with a high optical resolution and support for Super35mm large-format cameras. An 11-blade aperture diaphragm helps ensure an artistic and beautiful representation of out-of-focus areas (or "Bokeh").

The lens also features a high 10x zoom magnification, wide focal length range of 25mm to 250mm, and a 180° smooth rotating focus ring. Acknowledging that broadcasters often need to control zoom, focus and iris/aperture in different ways than filmmakers, Canon has developed this zoom lens with full external servo control for drama, documentary and other broadcast productions.

The servo drive unit is compatible with industry-standard protocols for control from a number of lens controllers including Canon's standard broadcast lens controllers (ZSD-300D/FPD-400D) and multiple industry standard cinema lens controllers. The drive unit can be easily removed for cinema-style shoots and can be easily re-attached without any manual re-alignment. A 16-bit metadata output enables connection to virtual studio systems.

The EF mount version of the lens allows for the utilization of Canon's proprietary Dual Pixel CMOS AF, which provides users with smooth AF operation and high-speed tracking performance, and the PL mount version supports Cooke/i Technology. In addition, like the 17-120mm, the 25-250mm lens also features a macro function to enable close-up shooting. **T**

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A fast-to-deploy, cost-effective solution that complements your core intercom with remote capabilities to meet new workflow needs.



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AN HME COMPANY

Two Pros Share Tricks for Gain Staging Transmitters and Receivers with Recorders – Part 1

BY BRIDGET HARRINGTON

In our recent Facebook poll, many of you expressed interest in learning how to set up transmitter/receivers with recorders in an on-the-job scenario. We reached out to a few sound pros in the know, and this list is Part 1 of a multi-part series around how other users approach this exercise.

First, we'll hear from Bal Rayat, a UK-based Sound Recordist

How he sets up receivers (SRB and SRC):

"Always set the receivers to line level (as that what Lectrosonics are natively) at +0dBu. I engage the tone on the receiver and set the level on the mixer so that the level is slightly over 0dBu."

How he sets up his transmitters (SM):

"The transmitters are a little hit and miss, but I will mic someone up and then ask them to speak as loud as possible. Generally, people feel a little shy and won't give you their full volume, so I set the gain on the transmitter and then back it off a couple of notches. What I'm looking for is full modulation of the transmitter so both LEDs on the transmitter light up during normal conversation. When the person speaks at peak volume, I want to see both the -20 and -10 LEDs lighting up, with occasional -20 flickering red. I rarely have to alter the level as the limiters on the SM series are so robust. The settings on SMs and SRBs are the same for mixer and talent."

Camera Hop Settings:

"I've recently moved over to the DCHT for my hop duties. I take AES out of my mixer and straight into the DCHT. I use a M2R on cameras and they can be set in two ways. Most cameras will take an unbalanced line-level signal so the M2R volume level is set to 80 and limiter gain set to +15, with the threshold set to "off".

For cameras that can only take mic level I set the M2R volume at 35 and limiter gain to zero, again with the threshold set to Off. For both types of cameras, I set my M2R volume taper to "Log".

Now when using SM and SRB combo for hops, I do the following. I set my mixer output level to -10 (consumer line level). Set transmitter gain to 20-23 and set SRB to +5. That combo has always worked for me."


Next up is Bruner Dyer, a Sound Mixer and Engineer for reality TV and Sports

How he sets up receivers:

"From the receiver to the recorder, I set the analog output of the receiver at the highest line-level reference level (+05 in the case of Lectrosonics) going into the analog line-level input of the Sound Devices 833 (or any normal professional recorder). This avoids having to reamplify the signal in the recorder that was already amplified in the mic preamp of the transmitter. The loud line-level signal, as opposed to running the output of the receiver at the much lower mic level and using the mic level input of the recorder, will help my audio blow past any unwanted noise that may be amplified by the recorder's mic preamp when having to reamplify the signal. When using an SL6, it works best at -6 on the output of the Lectrosonics receiver. Once you have a rule, you have to be ready to break it. Situations vary."

How he sets up his transmitters:

"I amplify the microphone at the preamp in the transmitter. Basically, I set the gain as high as I can, while avoiding hitting the limiter too hard, thus coloring the sound too much. I have to plan for the loudest sounds I will encounter before I can practically adjust the gain again on the transmitter to meet a new situation." Our Wire-List on Audio Gain goes into additional specifics of what Bruner mentions.

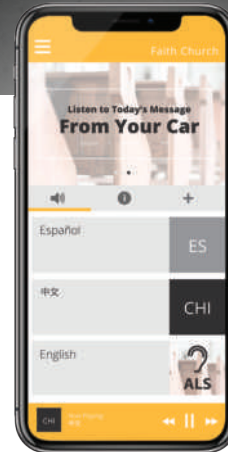
To his point about breaking rules, Bruner adds that he has a friend with a different approach to syncing the receiver to a Sound Devices recorder. "One friend runs his output gain at -12 on the receiver and uses the mic level input on the recorder. He ends up running the gain pretty low on the Sound Devices to compensate for the hot signal coming in. I think he can really crank up the gain this way. It works for him." 

Bridget Harrington is a Marketing Specialist and Content Creator at Lectrosonics

Connect Everywhere



With Drive-in Gatherings
Powered by
Listen EVERYWHERE



PROBLEM

The COVID-19 pandemic has changed the way we gather. We understand it is tricky navigating recommendations for social distancing as communities and adapting to a "new normal".

SOLUTION

Fortunately, there is a way to meet in person without the risks: drive-in gatherings. With a Wi-Fi streaming solution, your live gathering is broadcast to guests who are safely in their cars or spread out.

YOUR STREAMING APP, YOUR WAY

Customize the free Listen EVERYWHERE app for your business or venue with unique channel images, banner ads, videos, special offers, and more.

FIND THE RIGHT SERVER

The LW-100P 2-channel server connects to your existing Wi-Fi network streaming directly to audiences of up to 1,000 users. Cloud-based management allows for simple banners, and more!



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The Fusion MBL 20 & 40 by GLP

The Fusion MBL is a powerful LED studio washlight and exterior floodlight with flexible controls and quick remote integration. Providing 100 degrees of even tunable white light. The integrated diffuser improves the lighting properties providing a homogenous wash. Optical accessories such as hinged barn doors allow for extended beam angle control.

SPECIFICATIONS

Power

- 100-240 VAC/50-60hz
- Auto ranging electronic switch-mode
- Max. 200W @ 230V

Control

- 4 button OLED display
- USITT DMX 512-A
- RDM ANSI/ESTA E1.2
- DMX Channels 2/5

Operating Conditions

- Temperature overheating protection
- Max: 115°F (45°C)
- Min: 14°F (-10°C)
- IP65 rated

Connectors

- XLR 5-pin
- Neutrik powerCON True1

Mounting Options

- 1/4 turn locks
- Two safety cable attachments

Dimensions and weight

MBL 20

- Height including bracket: 37 cm / 14.5"
- Height without bracket: 27 cm / 10.6"
- Width: 25 cm / 9.8"
- Depth: 17 cm / 6.69"
- Weight: 5 kg (11 lbs.)

MBL 40

- Height including bracket: 48.2 cm / 18.9"
- Height without bracket: 38 cm / 14.9"
- Width: 32 cm / 12.6"
- Depth: 21.7 cm / 8.5"
- Weight: 10 kg (22 lbs.)

Lightsource

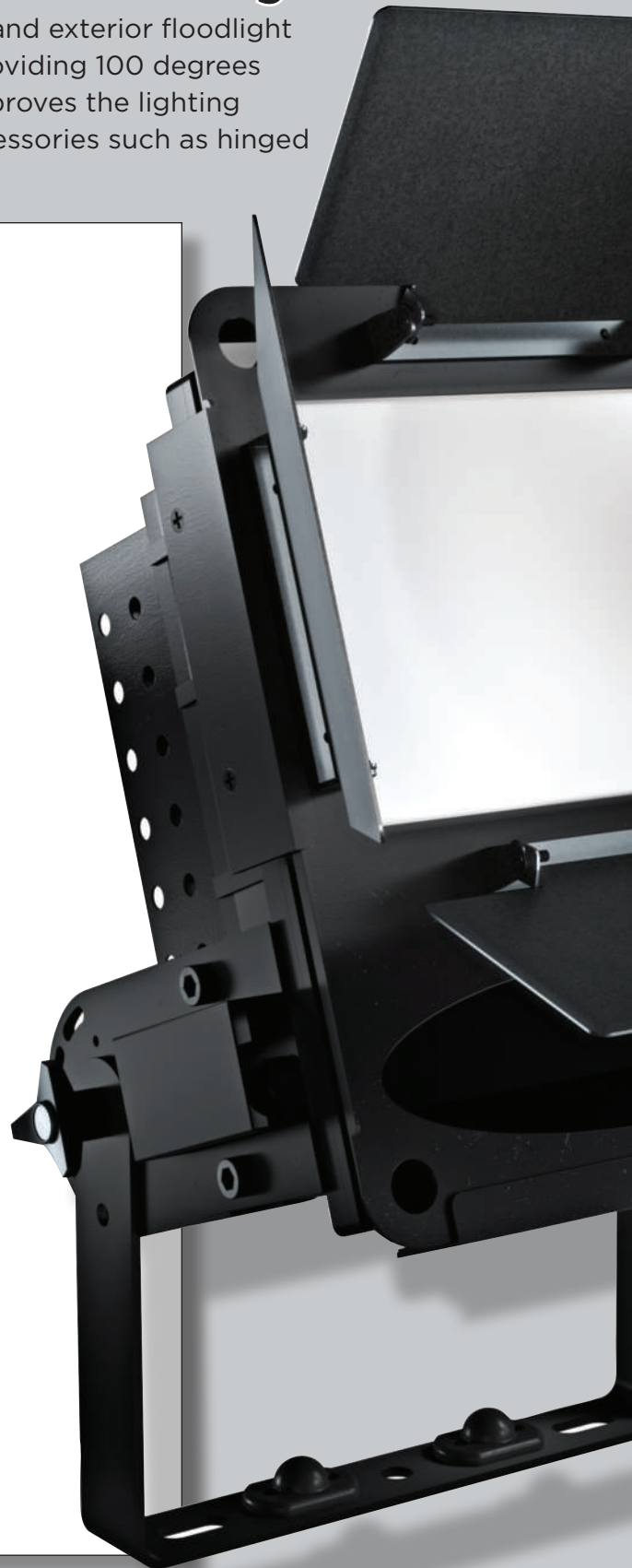
- 27x WW & 27 CW LED's
- 50,000 lifetime hours
- CRI 80+

Optical System

- 100° beam angle

Effects

- Dimming Curves: inv. square, linear, Square law, theatre
- Rotary switch CCT: 2,700K, 3,200K, 4,200K, 5,600K, 6,500K
- Rotary switch brightness: 20%, 40%, 60%, 80%, 100%





5 KEY FEATURES FOR HOUSES OF WORSHIP

- **TUNABLE WHITE WASHLIGHT:**

Adjustable color temperature from 2,700 to 6,500 Kelvin.

- **SILENT OPERATION:**

The MBL 20 & 40 use a fan-less convection cooled operation making it an ideal fixture for sound sensitive areas.

- **REMOTE LOCATION USE:**

In addition to DMX512 & RDM protocols the MBL fixtures have direct selector switches for color temperature and brightness levels without the need for control. This makes the MBL perfect for remote and plug & play locations.

- **IP65 RATED:**

The MBL 20 & 40 are IP65 rated for outdoor use in any weather conditions.

- **CAMERA READY:**

With selectable PWM frequencies (up to 30KHz) the MBL 20 & 40 are camera ready for video and TV applications.

JVC CONNECTED CAM 500 SERIES

JVC Professional Video is a leading manufacturer of broadcast and professional video equipment, serving the remote production world since long before it became a standard. The current world climate has resulted in houses of worship establishing and expanding on its wireless streaming video transmission capabilities in order to continue its services. JVC's CONNECTED CAM 500 Series camcorders, with sophisticated built-in streaming, connectivity and cost-saving features will aid venues in reaching its congregation when they are not able to be present, now as well as into the future.

SPECIFICATIONS

Camera

- Newly developed 4K lens with 20x zoom
- One-inch CMOS Image Sensor with high picture quality
- LCOS Quad VGA Viewfinder
- Four-inch LCD Monitor
- Broadcast overlay on video and streaming*
- Provided: DC7.2V Battery, AC adapter, power cable, lens hood, wireless LAN antenna x 2*

Live Video Streaming

- High performance 1080 60p/50p live streaming
- Low-latency and high-quality streaming up to 20Mbps
- RTMPS and Easy Setup Streaming for Facebook Live**
- Easy Setup Streaming for YouTube Live**
- Vertical and Square Frame Image Capture for Social Network Optimization**
- NTP Network Time Protocol with LTC and VITC**
- H.265/HEVC Streaming at up to 10-bit 4:2:2 with optional KA-EN200G Streaming Encoder**
- Protocols: RTMP, MPEG2-TS/UDP, MPEG2-TS/TCP, MPEG2-TS/RTP, RTSP/RTP, Zixi*

Video/Audio Capabilities

- Recording Media: SDHC/SDXC x2
- Video Codec: MPEG-4 AVC/H.264 (HD/SD), MPEG-2 (HD)*
- File Format: MOV, MP4, MXF*
- Apple ProRes 4K and HD/UHD 422 Recording on SSD with KA-MC100G Media Adapter**
- Audio Recording: LPCM 2ch, 48kHz/16-bit (MOV/MXF*), μ -Law 2ch (Proxy), AAC 2ch (MP4)
- Video Output: 3G-SDI output (BNC x 1), HDMI output x 1, AV output (ϕ 3.5mm mini jack x 1)
- Audio Input: XLR x 2 (MIC, +48V/LINE), ϕ 3.5mm mini jack x 1

IP Networking Functions

- SRT – Secure Reliable Transport
- ARQ Automatic Repeat reQuest and FEC Forward Error Correction**
- Return over IP (Return video and IFB)
- Built-in wireless LAN (2.4GHz/5GHz) MIMO with external antenna *

*GY-HC550 exclusive features

**Exclusive to JVC brand camcorders



5 KEY FEATURES FOR HOUSES OF WORSHIP

- **STREAMING CAPABILITIES:** The camcorders connect directly to Facebook Live and YouTube Live with the click of a button, which is ideal for streaming services in the wake of COVID-19. Video streaming with vertical and square guidelines was recently added for ideal image capture on all SNS platforms/devices, along with Forward Error Correction (FEC) and Stream Identifier (ID).

- **ADVANCED CONNECTIVITY:** A built-in Ethernet connector uses existing LAN infrastructure, reducing costs associated with additional boxes/accessories. The GY-HC550 also has a built-in WiFi option. Both feature IP-based remote control and superior IP connectivity through the SRT video transport protocol.

- **ZERO-CONFIGURATION (CONFIG):** This auto identification function allows users to directly connect the camera to one of JVC's IP switchers – such as the ProHD Studio line or CONNECTED CAM Studio. The camera and the switcher will automatically 'talk' to one another, making set up extremely easy.

- **INCREASED CREATIVITY:** All cinematographic features (28mm to 560mm 20x zoom lens) are included, eliminating the need for interchangeable lenses, providing more creative license to people with varying technical abilities. The optional SSD media adapter enables recording native 4K/HD ProRes10-bit 4:2:2 files, or backup recording to SSD.

- **IMAGE MAGNIFICATION:** The built-in 4K HDMI and 3G HD-SDI feature affords the connectivity necessary for IMAG image magnification. This is especially useful for live events looking to enlarge a live image onto larger screens.



The Satellite Modular Laser System from Digital Projection

Digital Projection's Satellite Modular Laser System is a revolutionary projector technology advancement that separates the pure laser light engine, with the associated power and thermal management, to a remote location - enabling a compact and virtually silent projection 'head'. Comprised of a small number of basic building blocks, Satellite MLS empowers churches to create vibrant and inspiring worship spaces, from single projector installs to complex, multi-display solutions.

Providing flexible integration options unlike anything on the market today, Satellite MLS presents an incredible leap forward for houses of worship seeking that next level in visual displays.



SPECIFICATIONS

Projection Heads

- Resolution: WUXGA, 4K, 8K
- Light Output: Up to 40,000 Lumens
- Contrast: 2000:1
- Weight: As Low as 42lbs
- Noise: <43 dBA
- Power Requirement: 110-240V
- Cable Distance to Light Source: Up to 100 Meters

Modular Light Sources

- Light Output: 10,000 Lumens per Module
- Light Type: Pure RGB Laser
- Color: Over 98% of the REC2020 Gamut
- Laser Illumination Life: Up to 30,000 Hours
- Dimensions: 4U 19" Rack Module
- Cooling: Self Contained - No External Chiller

For full specs, visit www.digitalprojection.com



5 KEY FEATURES FOR HOUSES OF WORSHIP

ULTIMATE FLEXIBILITY

From 2,500 to 40,000 lumens with WUXGA, 4K, or 8K resolution - you decide. Only the Satellite MLS offers this level of flexibility.

BEST-IN-CLASS VISUALS

RGB Laser Illumination through fiber optic connections enables near REC2020 color space along with the superb sharpness, contrast, and brightness that Digital Projection solutions are known for.

ULTRA-COMPACT HEADS

Low power-consuming projection heads that are up to 75% smaller than integrated projectors producing similar brightness.

SMALL, LIGHTWEIGHT LIGHT SOURCES

Proprietary RGB Modular Light Sources fit in a standard server rack. At 55lbs (25 kg), these 4U building blocks offer unmatched reliability and serviceability.

WHISPER QUIET PERFORMANCE

With the majority of the heat producing elements separate and remotely located from the projection head, noise disruption is a thing of the past.

SSL Live

Ultimate sonic performance

Transform your worship services and turn events into world-class performances to remember with the SSL Live audio production platform

SSL Live L550 console



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"We did a shootout between the SSL Live and one other console. The sonic performance of the SSL console is pretty spectacular. Without any processing, it sounded wider and deeper, like the speakers had all moved 10 feet apart. So there was a clear winner: SSL." - Travis Brockway, Nexos founder and Systems Integrator - **Watermark Community Church, Tx**

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Solid State Logic

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Marshall Electronics CV506 Included as Essential for 5 Words Media's #FreeChurchAV Contest

5 Words Media (5WM), an AV and lighting Integrator based in Phoenix with offices located in Austin and San Diego, recently embarked on its #FreeChurchAV contest as a way to give back to the HOW industry. The contest, which garnered over 580 entrants, had an impressive prize package — a brand new state-of-the-art AV system, which included three CV506 Full-HD Miniature Cameras from Marshall Electronics.

“The #FreeChurchAV contest was conceived by our team internally when we were looking at a way to give back to the church

community that has been so good to us as a company,” says Daniel Gourley, 5 Words Media Owner/Design Principle. “We are a Christian-based company and #FreeChurchAV was a great way to provide value to a church in need of an equipment upgrade.”

The contest giveaway incorporated the design and installation of a complete AV and lighting system, up to \$200,000. Jonathan Wright, tech pastor at Hope Church in Danville, VA, entered his church into 5 Words Media's #FreeChurchAV contest and his prayers were answered when Hope Church was selected as the winner. The new system for

Hope Church included a performance speaker system, wireless microphones, stage lighting and control as well as a broadcast video switching and complete camera system including Marshall Electronics' CV506.

“Marshall has always been a fantastic choice

for 5WM on our projects because of the extreme broadcast quality level and compact size of their cameras, as well as the great support we have received in the past on our video broadcast systems,” adds Gourley. “Marshall's PTZ cameras and the 500 series cameras, like the CV506's used in #FreeChurchAV, have long been a part of 5WM installations for the past several years. We were very thankful for Marshall's generous contribution to this wonderful contest.”

The 5WM team placed cameras at house right and left as well as on stage for POV shots of the band and worship team. According to Gourley, “The customer absolutely loves the results. Use of the CV506's has allowed Hope Church to achieve quality images for streaming and its broadcasts, even in low lighting conditions. The small form factor of the CV506 allows them to blend into the space and discreetly be hidden around the stage without drawing attention to themselves. The cameras installed flawlessly, and they were able to produce the 1080P 60 signal needed for our switching/stream system.”

The CV506's also fit perfectly within Hope Church's existing workflow.

5WM has already opened submissions for #FreeChurchAV2020. Submissions are open until December 7 and the company will pick a new winner for its next free church giveaway on January 25, 2021. “We are proud to have Marshall Electronics as a gold level sponsor this year!,” concludes Gourley.



“The SDI connection on the camera fits into the existing system perfectly,” adds Gourley. “The on-board iris, gain, color temp and limit settings allow us to color match the cameras and control their behavior in a live environment amazingly well.”

Through 5 Words Media’s #FreeChurchAV contest, Hope Church was able to upgrade its equipment for its livestreams, which is increasingly important during the current climate. “We are really excited to finally have the capability to accurately present what



happens at our services to our members at home, thanks to the amazing cameras from Marshall,” says Wright. “Now our worship music and the sermon are

both captured clearly for our congregation. We post the recording to our website and app, and now we can also stream to Facebook and YouTube as well.” **T**

PHOTOS ABOVE: FIRST SUNDAY AT HOPE CHURCH, DANVILLE, VA AFTER WINNING 5 WEST MEDIA'S #FREECHURCHAV CONTEST
PHOTOS COURTESY OF 5 WEST MEDIA



MAKE IT MUSICAL PUT A ROYER ON IT

The R-121 is the #1 ribbon microphone worldwide for translating the natural tone of electric guitars to FOH systems and monitors. Get all of the body, size, warmth and presence you hear at the amp, with none of the shrill, earsplitting highs common to live electric guitars in worship services. And the R-121 takes high SPL's all day long!

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Lighting Solutions from Elation Professional

Automated lighting fixtures can add dynamic impact to churches of all sizes while allowing you to use fewer fixtures to light your worship space. With LED technology, moving lights have become brighter, more reliable, easier to maintain and more affordable. Today, it's pretty much a no brainer to go with an automated LED moving light system vs. a static conventional theatrical dimming system. Useful for enhancing worship services, youth rooms, special events, broadcasts and more, including decorative and architectural illumination, Elation lighting systems allow you to change the atmosphere in a snap while having some of the highest ROI and lowest total cost of ownership in the industry.

SMALLER-SIZED CHURCH

Fuze Profile™

Designed as the ideal fusion of performance, features and value, Elation's Fuze series of LED fixtures has found a niche in the market whenever outstanding price:value is high on the list. Useful for a wide array of lighting applications is the Fuze Profile™, an automated LED framing moving head that houses a full color spectrum, 92-CRI LED engine that utilizes a 5-color homogenized LED array of Red, Green, Blue, Mint and Amber sources. The carefully tuned LEDs ensure accurate color reproduction while delivering a powerful output of over 10,000 lumens. Compact, quiet and lightweight, the Fuze Profile houses a full blackout framing system, 7 to 46-degree zoom, rotating gobo wheel and fixed gobo wheel. An animation wheel can be engaged to bring graphics to life while a variable frost filter can be employed when designers wish for softer gobo or soft wash effects. A 4-facet prism, motorized iris and high speed electronic shutter and strobe round out its feature set. The Fuze Profile is designed for any application where a fully automated ellipsoidal fixture with outstanding and impactful color range and quality is required.



MEDIUM-SIZED CHURCH

Artiste Picasso™

Elation's Artiste series is a multi-award-winning range of theatrical-grade LED moving heads that can be found on stages around the world. The LED Profile Artiste Picasso™ is all about creativity and is packed with design features for greater artistic expression. A 620W Cool White LED engine (6,800K) and advanced optical system produce a crisp output of over 23,000 total lumens. A broad spectrum of color from a CMY color mixing system and extra color wheel can be fine-tuned with CTO color correction for more refined color temperature control. It stays whisper quiet, even at full output. The Artiste Picasso incorporates a fast 7 to 55-degree zoom along with a rotating 4-blade framing system for full control of the beam shape. A range of graphical effects via two gobo wheels and animation system allow designers a wealth of design choice. Other features include two prisms, two frost filters, motorized focus and high-speed iris, electronic shutter and strobe. Multiple macros are also included for faster programming.



LARGE CHURCH

Artiste Monet™

The Artiste Monet™ is a brilliant, 45,000-lumen strong LED Profile luminaire capable of projecting some of the most gorgeous colors ever produced by an automated LED luminaire. It houses an innovative SpectraColor color mixing system that uses traditional CMY color mixing and adds variable RGB color mixing for richer, more saturated primary colors. In combination with variable CTO color correction, the Monet produces colors that were previously nearly impossible to achieve, from theatrical pastels to the most vibrant reds or blues ever produced by a color mixing system. A comprehensive FX package includes 7 rotating and 7 fixed glass gobos, full animation wheel, dual prisms, dual frost and a high-speed iris. It includes a fast 6 to 50-degree zoom and houses a dynamic, full blackout, 4-blade framing system with unlimited indexing and continuous rotation control. The framing system allows shapes to rotate while morphing and transforming for transitions, projections and aerial effects not previously possible. Providing extremely bright output and outstanding projection quality from an efficient 950W White LED engine, the Artiste Monet is ideal for any application requiring superior output, stunning effects and unmatched colors in a virtually silent luminaire. **T**

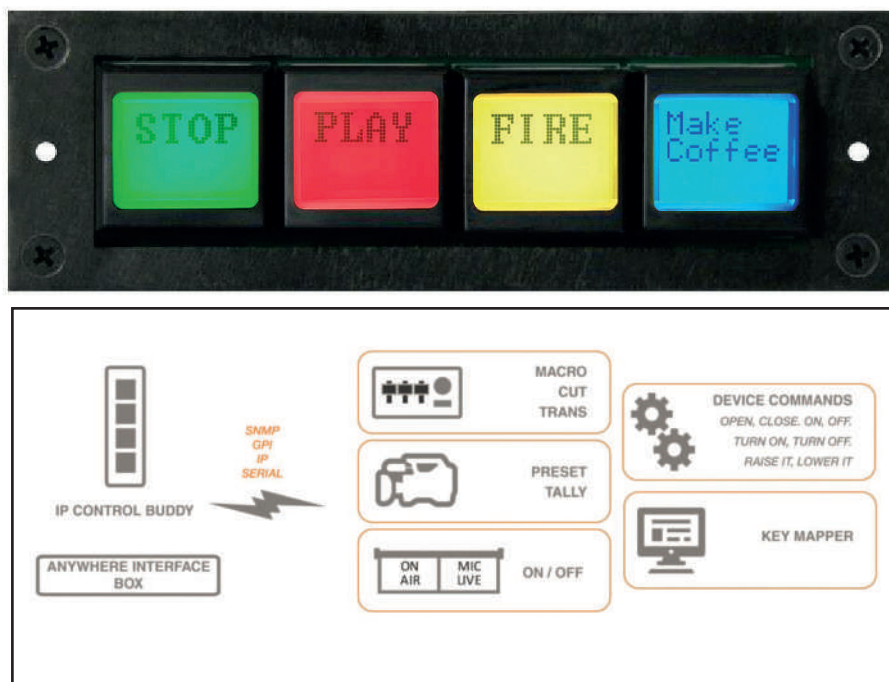


Broadcasting Solutions from TSL Products

For over 30 years, TSL Products has worked alongside the world's leading broadcasters and content creators in order to design, manufacture and market a range of broadcast workflow solutions that serve to simplify operations within the television broadcast, cable, satellite, IPTV and IT industries. As houses of worship began broadcasting its services on television, online and now streaming its services, the need for an advanced control system became clear, especially for those with mainly volunteer, non-technical staff. Specializing in audio monitoring, broadcast control systems and power management tools, the company focuses on providing solutions that streamline operations without breaking the bank. TSL prides itself on designing solutions that empower customers, allowing them to take ownership of their systems and benefit from extended life-time value. For house of worship applications in particular, TSL's advanced broadcast control solutions, including its IP Control Buddy, USP3 Panels, and TallyMan have proven beneficial.

Smaller Houses of Worship: IP Control Buddy

TSL's IP Control Buddy is a powerful yet compact control system that can be used either as a standalone product or can be integrated with a larger third-party control system, offering a flexible solution for house of worship facilities. The cost-effective solution can control any GPI/O-, Serial- and IP-enabled devices located anywhere, from a single button push. Scaling from one to four buttons, the IP Control Buddy can perform simple 'on/off'-style actions or trigger complex salvos, and its compact size makes it perfect for flyaway kits and quick-press production tasks. The IP Control Buddy can simultaneously control multiple devices and is powered by either Power over Ethernet (PoE) or an external power supply. As a small but powerful solution, the IP Control Buddy can directly control other devices, such as Ensemble Designs' ultra-compact BrightEye NXT routers, Blackmagic Media Players and Power Distribution Systems. With a 'programmer-free' web-browser, it's easy to configure the



IP Control Buddy for any control and monitoring application. Additionally, the IP Control Buddy features a Panel Key Mapper, which can be installed on Windows, enabling the

system to remotely execute keyboard shortcuts and trigger common HotKey combinations for editors, production playout automation and other Windows applications.

Mid-Size Houses of Worship: **USP3**

TSL Products' USP3 panels provide a streamlined user interface with single panel monitoring and control of multiple devices. These universal control switches are ideal for users who need to interact quickly between active sources and/or when multiple switch commands must be activated simultaneously, such as during live projects. In order to optimize operator workflow, USP3 panels show users only the device or system information, status and tallies they need in order to work efficiently and accurately. This simplifies operations and reduces human error, which is beneficial for house of worship applications working with volunteer operators and less technical staff. TSL's USP3 can monitor and control multiple devices from a single panel while allowing for the easy creation of multi-action commands (macros) with a single push-button command. There are three variations of the USP3; the USP3-16, the USP3-8D and the USP3-SHOTBOX. The main difference between each variation is the number of pushbuttons and GPI/O inputs each panel has, which allows



customers to pick the solution that best fits their specific needs. The USP3-16 features either 8 or 16 LCD push buttons with 16 GPI/O inputs, the USP3-8D

features eight LCD pushbuttons and 8 GPI/O inputs and the USP3-SHOTBOX features 30 LCD pushbuttons, 16 pushbuttons and 8 GPI/O inputs.

Large Houses of Worship: **TallyMan**

For larger houses of worship and megachurches, TSL's TallyMan advanced broadcast control system is an ideal solution as it offers an efficient and powerful control engine. From signal routing to remote device control, TallyMan groups multi-level actions into a single, user-configurable interface, allows productions to run more efficiently. The system provides only the necessary controls, from simple interfaces for specific tasks, to unleashing the full power of a system built on logic-based and an open control layer, allowing customers to maintain complete ownership over their systems. TallyMan can be integrated with any new or existing third-party system, further increasing the flexibility of control. By deploying a control system in a modularly resistant manner, a house of worship production can have dedicated local intelligence to manage local devices, operating entirely independently of



each other, whilst communicating status and sharing resources across facilities. Additionally, TallyMan allows production values to increase and reduces the possibility for human error by minimizing the complexity of operations. To further enhance

the operator experience, the TallyMan system features Virtual Panels (TMVP). These software-based control surfaces can interface to any control system, allowing customers to visualise their workflows in order to effectively and intuitively manage their systems. **T**

Assistive Listening Solutions from Listen Technologies

Listen EVERYWHERE from Listen Technologies is the first Wi-Fi streaming solution for personal and assistive listening. The system capitalizes on the prevalence of smartphones and wireless internet to provide houses of worship an easy, affordable, and scalable listening solution. Houses of worship are using Listen EVERYWHERE for assistive listening, multilingual audio transmission, and as a conduit to foster connection and community during social distancing.

Streaming Wi-Fi and Bluetooth are the future of assistive listening as more and more people own smartphones and there is innovation in hearing aid technology to include Bluetooth. Hearing aids with Bluetooth allow users to connect to audio that is broadcast through their hearing aids, providing a better, more engaging experience.

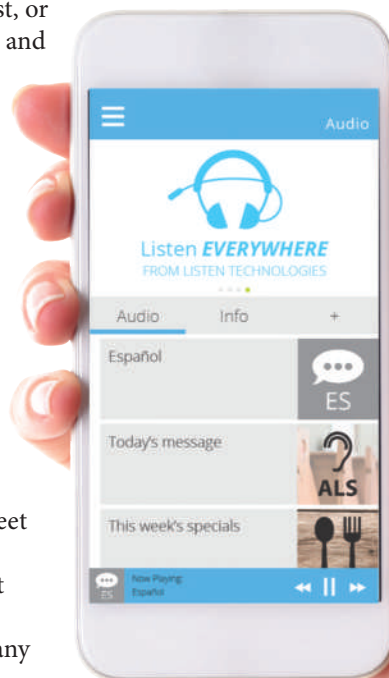
ASSISTIVE LISTENING

The Hearing Loss Association of America estimates as many as 48 million Americans have some degree of hearing loss. Not being able to hear clearly is not just frustrating, it can be socially isolating and emotionally challenging as it prevents people from fully participating in worship services and fellowship. Poor acoustics, distance from speakers and background noise in churches compound challenges for the hard of hearing. With Listen EVERYWHERE, congregants can use their smartphones to hear clearly regardless of where they are in the sanctuary and overflow rooms. They simply download the free Listen

EVERYWHERE app, or scan the QR code, select the channel with their preferred audio – this could be a live sermon, TV broadcast, or pre-recorded audio – and stream sound to their smartphones and smart devices. They are able to hear clearly through Bluetooth-enabled hearing aids or personal headphones and earbuds, and they can adjust volume settings to suit their needs. Listen EVERYWHERE is a convenient and discreet assistive listening solution; users do not need to check out or remember to return any

equipment, and there is very little learning curve since they are using their own familiar devices. For

churches, the system is affordable, scalable and does not require any retrofitting or extensive equipment installation. Houses of worship can easily add Listen EVERYWHERE to their existing wireless network and provide a low-latency assistive listening solution. They also can customize the Listen EVERYWHERE app to feature a welcome message or other announcement and include links to weekly bulletins, scripture readings, and parish information.



MULTILINGUAL AUDIO TRANSMISSION

Oftentimes guests and parishioners stop going to church because they can't hear or engage in their own language, leaving them feeling disconnected and isolated. Listen EVERYWHERE helps houses of worship overcome the challenges of hearing loss and poor acoustics and break down language barriers by offering multilingual audio transmission. Depending on the Listen EVERYWHERE system they choose, houses of worship can broadcast

in multiple languages or even transmit a traditional worship service at the same time as a contemporary service. These broadcasts can be pre-recorded or live, depending on whether churches have translators available on site. Congregants simply select the channel for their preferred language or worship service (youth-focused, traditional, etc.) using the app or QR code and stream the audio to their smartphone. Churches can offer a number of

channels depending on the system they choose, ensuring all congregants can hear and worship in their preferred language. Low latency means there are no lip sync issues to distract congregants – audio won't lag behind the speaker – and the fully customizable app means houses of worship can create custom channel labels in multiple languages and include links to hymns and information in several languages.



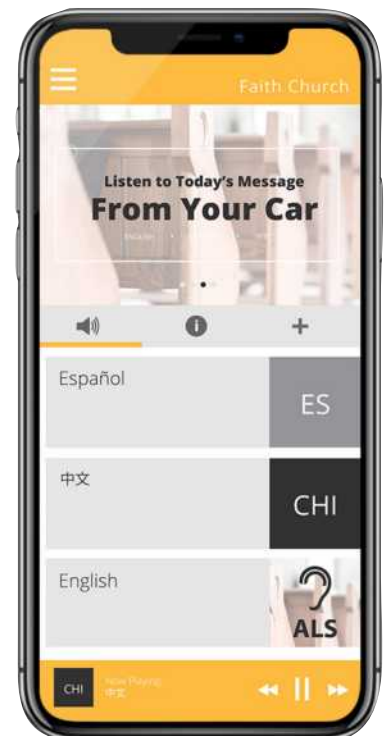
CONNECTION AND FELLOWSHIP

Houses of worship across the country closed for several weeks in the spring as Americans sheltered at home to reduce spread of the novel coronavirus. As churches look to reopen, many are offering abbreviated services (no singing, no communion) and limiting the number of congregants who can gather. Some have suspended bible studies, Sunday school classes, men's and women's group gatherings and other opportunities for fellowship indefinitely. Listen

EVERYWHERE is helping house of worship communities gather and support one another while staying safely apart. Churches with the system can broadcast their live worship services to congregants who are inside their cars. Parishioners are able to "go to church," see others, and experience a sense of community and shared worship, except, instead of sitting together in pews inside the building, they gather in their own vehicles in the church

parking lot. Boulevard Baptist Church in Anderson, South Carolina, had been using Listen EVERYWHERE for assistive listening before the pandemic. The church also uses the system to host drive-in movies in its parking lot. This gives congregants a chance to get out of the house, have fun and safely connect with the community. When it is safe for large groups to return to houses of worship, Listen EVERYWHERE will

make it easy for people in sanctuaries, cry rooms, annexes, or anywhere the church's Wi-Fi reaches, to hear sermons and songs clearly and join in worship. **T**



RIBBON MICROPHONES FROM ROYER LABS

From small and mid-sized churches to the massive LDS Conference Center in Salt Lake City, Royer ribbons are used for their extremely smooth, natural sound pickup. “Warm” and “natural” are common buzzwords with microphones, but a well-designed ribbon microphone delivers unparalleled natural tone and warmth, in a way other microphone types simply can’t. This is particularly noticeable in live performance where instruments like electric guitars and brass benefit hugely from ribbons. You get the power and full tonal range of the instruments, without the exaggerated highs or harshness they often generate in FOH systems when dynamic or condenser mics are used. Here are some solutions from Royer Labs.

SMALLER CHURCH



R-10, dBooster

The electric guitar benefits greatly from ribbon mics. Traditionally miked with dynamic or condenser microphones, electric guitars very often sound overly-bright and harsh on recordings and in church FOH systems. The R-10 captures a much more full-bodied electric guitar sound, delivering the warmth, power and harmonic content heard at the amplifier but with none of the exaggerated highs and harshness engineers commonly have to deal with. Because so much more of the overall tone of the instrument is being picked up, even at lower volume engineers get the energy and power they’re looking for in a good electric guitar performance.

The R-10 has many of the characteristics

of Royer’s flagship R-121 ribbon microphone, sharing a common ribbon element and transducer design but at a fraction of the cost

The dBooster is a phantom powered in-line signal booster that gives 12 dB or 20 dB (switchable) additional level to non-powered dynamic and ribbon microphones. The dBooster’s added level is extremely clean, so expensive high-gain preamplifiers aren’t necessary when using ribbon and dynamic mics on quieter sound sources, and the output is low-impedance so long cable runs are no problem.



MEDIUM CHURCH



R-121, AxeMount

The R-121 is Royer's flagship microphone, a first-call microphone for electric guitar and brass instruments. The R-121 is the industry's #1 ribbon mic for studio and live electric guitars. It gives an extremely true representation of what's being generated by a guitar cabinet and is often used as the only electric guitar mic. For greater tonal variety, many engineers blend an SM57 with the R-121; the R-121 gives the full body and midrange response with accurate highs, and the SM57 delivers more aggressive highs and pointed mids. Blending the two mics to taste is an extremely effective way for engineers to craft the guitar tones they want. To help make this method easier,

Royer's AxeMount dual mic clip positions the two mics closely in one clip, on one stand.

The R-121 is equally effective on brass instruments, particularly trumpets. The reproduced sound is warm, bright and full, without the shrill highs trumpets often generate when played through dynamic and condenser microphones.



LARGE CHURCH



SF-2, SF-24V

In large churches, the SF-2 active ribbon microphone is exceptional for miking choirs and string sections. Royer SF-series microphones utilize a shorter, thinner ribbon element than the R-series ribbons, which gives greater high-end extension and dead-flat frequency response. The Mormon Tabernacle Choir uses five SF-2s to capture their choir, and permanently mounted SF-24V tube stereo ribbon microphones capture the pipe organs in their famous Mormon Tabernacle structure and in their nearby 20,000 seat Conference Center in Salt Lake City (<https://youtu.be/zH5ka4RjCIc>).

The SF-2 is our preferred microphone for capturing classically oriented worship piano and the R-121 shines on the electric guitars.

The dBooster in-line signal

booster's increased level and low-impedance output maintains signal integrity on long cable runs and through cable splitters when non-powered ribbon and dynamic microphones are being used, meaning the signal received at even a distant console arrives uncompromised.





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The Local Church Goes Portable

BY BRYAN COLE

So you just found out you are now going to be “Church in a Box” – either due to a facility change, church plant, or other ministry opportunity. Whatever the reason, you are now joining the growing segment of “portable” church. I am here to tell you it can be done, and can be done with excellence, but the areas of focus on the road to excellence will have a lot more to do with people and processes, than with gear. If you have read any of my articles in the past, you will find this article to be similar to other topics I have written on, in that the focus on gear will really be secondary to the people side of the equation.

As with many other disciplines in worship technology, being tech-nerds

we tend to grab for the latest piece of gear that will “revolutionize your {insert system here}.” Going portable turns out to be much less about the gear, and more about starting with some foundational agreements – and once those are in place, the gear often self-selects. There may be expense in the form of gear but, in my experience, it is more about “logistics enhancing” gear (cables, racks, connectors) than “gold-plated” gear.

I have had the honor of helping many churches “go portable” including my own church where I serve, and in addition to helping others to do portable, I also “live” it personally – as a result my recommendations do come with some experience to back it up.

Let me introduce you to a major

component of my portable system design:

“Stability.”

No, not amazing preamps, the latest video switcher, and more lights than Disneyland. Nope, one of my main goals for portable systems is stability. Unlike a church with their own building, your portable church likely meets in a facility that you rent or borrow – it’s a “Load-In/Setup/Teardown/Load Out” arrangement each and every worship day. Raise your hand if you’ve been party to that Sunday when due to technical issues, you just tell the worship team to stay on the stage after warm-up, service starts in one minute – we’re skipping the countdown.

Actually, hang on a sec - let me step back a bit and make sure we’re on the

same page.

Whether we sing, play an instrument, mix audio, operate lights, or run ProPresenter, each one of us does our part to minimize distractions, and create a positive space for worship. I don't know about you, but when I spent my whole morning trying to get something working, I'm not really on my best "game" when service starts. And anyone that depends on the systems I manage (like the worship team) is generally a pile of nerves, as they were hoping to run through the songs BEFORE first service. Ask any worship leader, and they will tell you that

our regularly scheduled discussion about stability.

Stability helps ensure that those "fun" Sundays happen as infrequently as possible. How do you facilitate stability? I'm so glad you asked! You start by calling a meeting with your pastor, worship leader, and any other leader responsible for the Sunday experience, and you have a talk about three things:

Requirements, Requirements, Requirements

This meeting is all about clarifying expectations – collectively discussing what features and capabilities the Sunday technology will provide, whether it's using existing gear, or purchasing

inputs, monitor mixes, and cables, let alone not having the proper mic for a kazoo. But you made it happen, unfortunately while you were doing your magic, the rest of the worship team had to settle for a less-than-stellar monitor mix, since your time was divided. Oh yeah, and you missed a cue. At least for me, I serve the worship team better when I am all-in mentally. And a well-served worship team generally equals a much better worship space.

In the meeting you talk about things like:

- *informing the team what your system can support*
- *how many monitor mixes you have*
- *how many musician positions you can support (or have lights to support)*
- *how many singers you have mics for, etc.*

You can go over video expectations, and this is where you remind the team that you currently have no way to play the BetaCam video tape that your missionary from Outer Mongolia often brings with him on Missions Sunday.

Another way to think about this is to look at it the way the corporate IT world does – you are establishing a "Service Level Agreement" (SLA.) The SLA defines the level of service that you can guarantee each week, and still keep quality up. Whenever these agreements are deviated from, you open up more opportunities for "fun" Sundays (note: Satan loves to participate in "fun" Sundays.)

Here's the cool part about this meeting – you will help provide much-needed clarity. Many times, this will be the first time that your teams discovered that there are

limitations to your systems. It can also create awareness at the amount of effort that deviations from your systems designed capability can cost you (and how it affects stability.) You may find that it's a huge part of your pastor's mission to be able to play the missionaries BetaCam tape – so instead of having to borrow grandma's BetaCam deck and scrambling to figure out how to connect it's composite video output to your fancy Blackmagic switcher, you now work this into the intentional design of your system, going forward with it clarified as a capability that you can support. No stress. In the process, everyone learns that system capability is often tied to dollars and collective compromise, and together you can define this as a team.

Oh sure, there's other things you can do like prewiring racks to minimize connections on Sunday, switching to (reliable) wireless gear where possible (less cables) and a myriad of other techy things, but in my humble experience, dialing in requirements collectively with your team is by far the biggest win – you already know how to do the rest of the tech magic! **T**

Bryan has been involved in church production technology for 20+ years, designing and building A/V/S systems, much of that time spent in his own system integration company. Today Bryan's time is spent mostly as an independent consultant for churches and parachurch ministries.

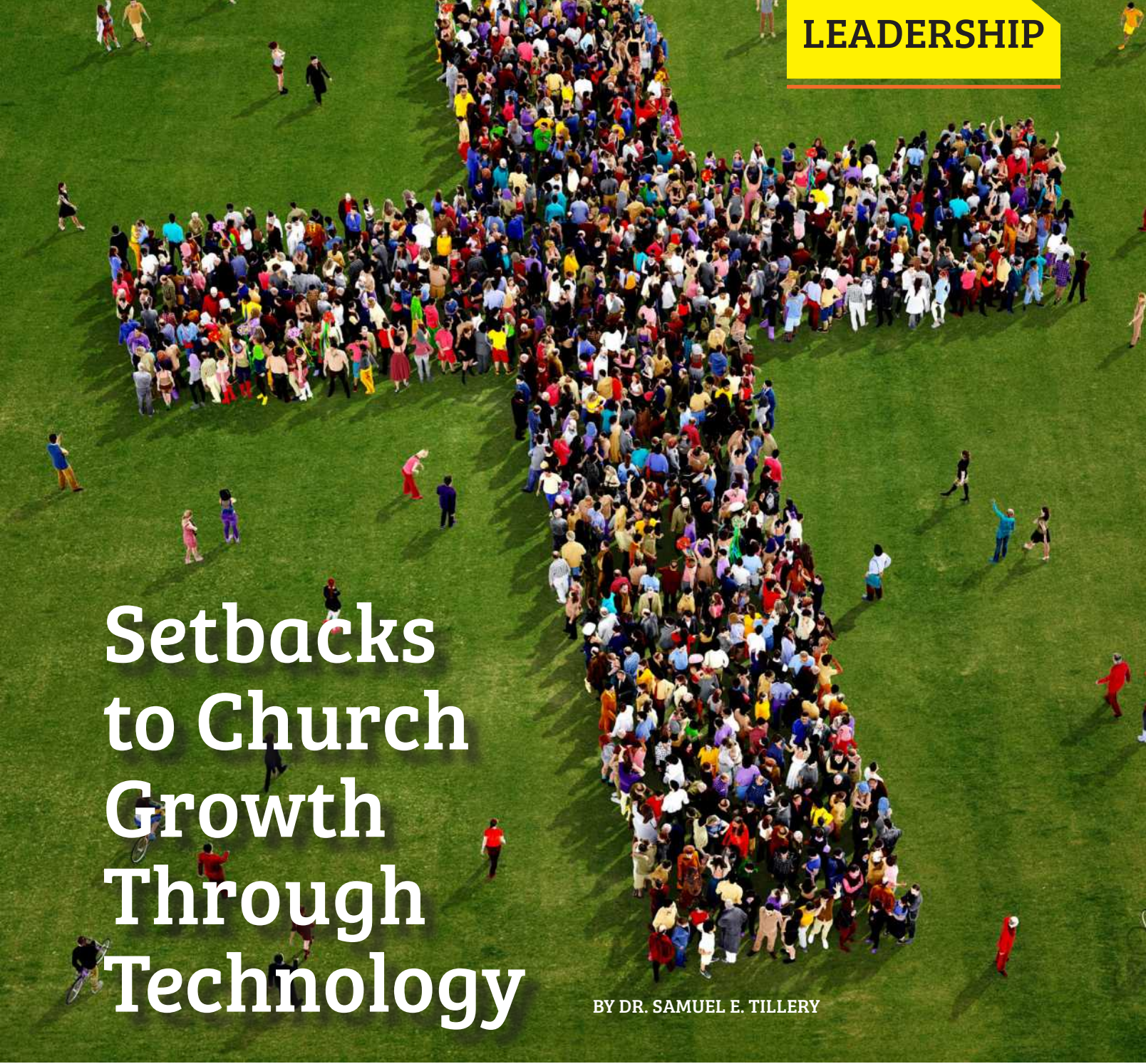
Remember when the worship leader showed up with the 4-piece kazoo band, in addition to your regular team? You had to scramble to try and find inputs, monitor mixes, and cables, let alone not having the proper mic for a kazoo.

those kinds of mornings aren't the best for fostering a worshipful mood. When I mix audio on Sunday, the mixing console is my worship instrument – and I am able to "play" it much better when I'm not a) stressing about the transition I was not able to rehearse, and b) bummed because the worship team's valuable time to get their hearts centered in Him was disturbed by a technical glitch.

OK now back go

shiny new stuff.

The first time that you have this meeting, your eyes may be opened – because you are so good at "making it happen" every Sunday, the rest of the team had NO IDEA that the possibilities aren't endless, and that your systems actually have real limitations. Remember when the worship leader showed up with the 4-piece kazoo band, in addition to your regular team? You had to scramble to try and find



Setbacks to Church Growth Through Technology

BY DR. SAMUEL E. TILLERY

How to grow your service, maximize your manpower and lead your church into a greater, more effective means of communication

The limitations of technology in worship can too often be traced back to one truth. It has been said that everything rises or falls on leadership. If this is true in its various forms, this truth also applies to those that have experienced growth in their churches through their worship. You can have all the latest equipment and technology, but unless the senior leader sees its value, there will be problems.

The worship leader and senior pastor must work together to communicate the gospel, not only through preaching and teaching the Word of God, but also through dynamic music. In the new era the Church has entered,

using technical knowledge and tools is not a luxury, but a necessity, to create a greater impact in ministry to the Body of Christ and in reaching the lost. All too often, individuals that serve in the tech, creative and artistic departments of ministry become frustrated and stifled when trying to work with a narrow minded or uninformed senior leader. It is extremely frustrating for our servants in these areas of the ministry to work with

leaders, keeping them captive to their fears. They remain paralyzed and find it easier to not make any technological changes within their ministries, which continue to have minimal impact.

Leaders can be more successful if they would listen and be more willing to work together with God's servants who are called and gifted in the performing arts, creative communication, lighting, sound, and motion picture.

ones who are called and gifted in the performing arts, creative communication, lighting, sound, and motion picture.

When I work on developing an open mindset to change and adjust what has been "familiar" and within my "comfort zone", I allow the ministry to grow. I succeeded in doing this by surrounding myself with people who are technologically competent, the ones who follow the

need people like John on my team. He helps me stay well-informed to make the changes necessary for growth.

A religious mindset also keeps our modern-day advancements locked down with religious leaders who are stuck in the past, thinking new improved methods for presenting the quality of the presentation of the gospel is somehow compromising the message of God's Word, and their religious ideologies.

Technology and media have to be embraced, channeled, and redeemed to serve the kingdom of God, to reap its benefits. If leaders would embrace the fact that man was inspired and given the ability by God to create continuous evolving technology as a means to open up more effective ways to declare and proclaim the Good News of Jesus Christ - ways that will capture and hold the attention of both the young and the elderly in our congregations and beyond.

If you agree with what I am saying, then we must approach the problem in the right way. As a leader my approach is relational. I am intent on speaking value into the lives of God's servants who are gifted and ordained in these different areas of ministry.

However, if you are on the other side, the answer is to not be so quick to judge or criticize our senior leaders or their board of directors. When they are unreceptive to your ideas, it is best to come alongside them by building better relationships. Begin by praying for your leader and ask God to show you

Technology and media have to be embraced, channeled, and redeemed to serve the kingdom of God, to reap its benefits.

senior leaders who possess a fixed mindset and are unwilling to change and grow with our technological changes. If these leaders would embrace and use the tools available within the amazing advancement of various technologies, their ability to reach their community could be exponentially broadened.

Unfortunately, too often leaders are more concerned with cost than with being more relevant and effective in communicating the Gospel. Technology in worship, as well in other areas of ministry, begins with the senior leader being open minded to not just listen, but they must also be willing to support those ideas through the equipping and funding of the technology needed to grow the ministry. The high cost of technology can also hinder uninformed and money minded Christian

I find that far too many Christian leaders are too quick to speak, slow to listen, and make rash judgements when presented with new and innovative ideas that will enhance their ministries. Pride, fear, and insecurity are usually at the center of these leadership issues that hinder growth.

The challenge is when a senior leader is technologically inept, and their fixed mindset response exercises intimidation because of the fear of losing control. Many leaders do not want to admit this, but I have seen this as a common problem in Christianity while in my 40 some years of ministry. Continuous, evolving technology is not the problem, as some leaders would tout. The problem is their unwillingness to change. Leaders could be more successful if they would be willing to listen and work together with the

modern trends and stay current with the wealth of tools that could allow my different ministries to succeed in communicating the gospel through better sound, lights and video.

For example, in my personal experience, someone who helped me grow in technology, is John Chevalier. John was previously one of my former church staff members, has since become a long-time friend, and is presently a partner in a new ministry called Vision Aloha Ministries. John has stayed current with the latest knowledge and skills that have enhanced and complemented my ministries, past and present. This would not have happened had I not been willing to not only listen to but hear his perspectives. I may not be a technologically savvy leader, but I am savvy enough to realize I

how you can best partner together with them. Let them see that you are not a threat to them or their ministry, but desire to help them be more successful through perhaps a wiser approach. Be an encourager, focus on what they are doing right, and present prayer backed, fitly spoken ideas, as to how technology can enhance what they are doing right. Earn their trust and respect, plant the seed, and let God's Spirit attempt to remove their blinders and fears.

Technical ministry is such a vital part of our churches, from teaching and preaching the Word of God, to the music and everything in between. I say a big "thank you" to

In the new era the Church has entered, using technical knowledge and tools is not a luxury, but a necessity, to create a greater impact in ministry to the Body of Christ and in reaching the lost.

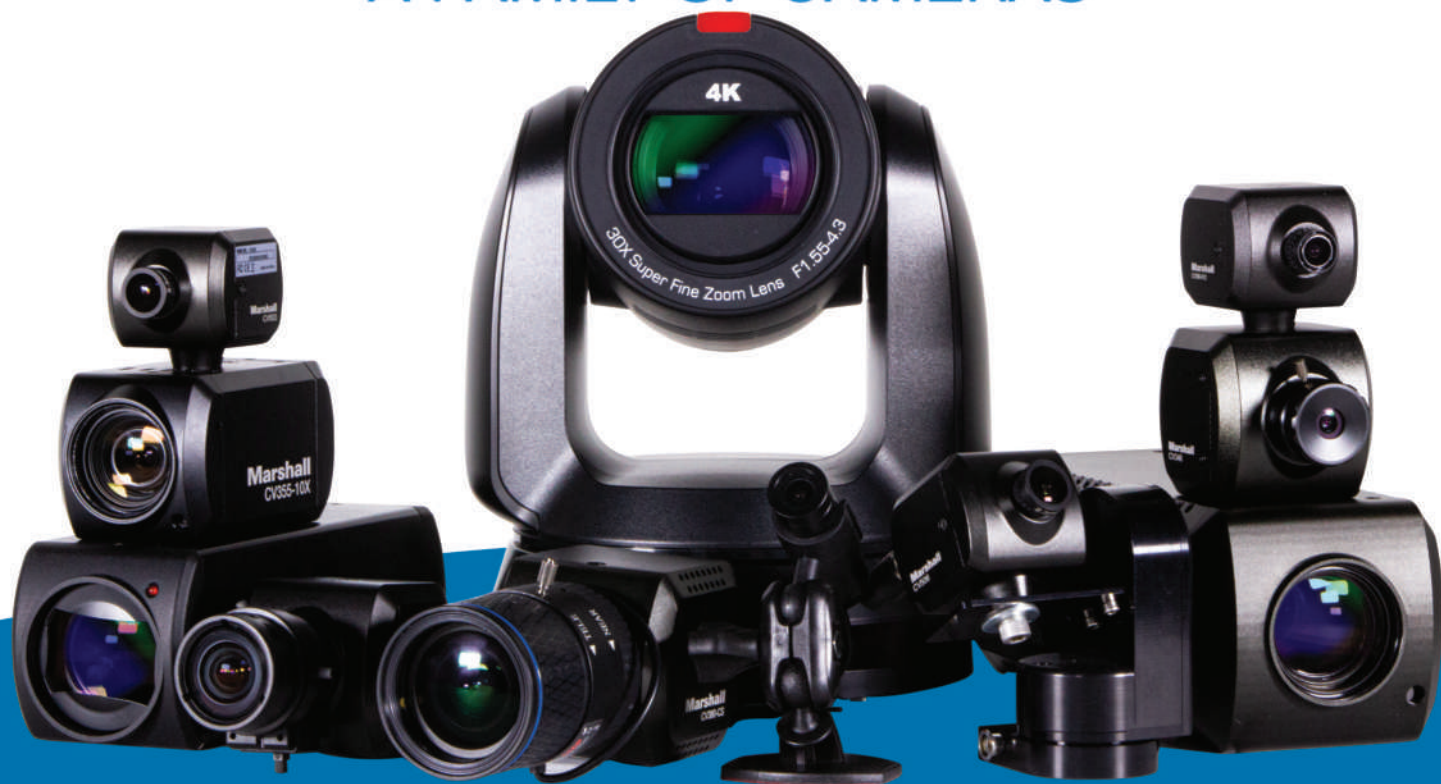
all who serve in this area of ministry. I know for many it has been a huge challenge in getting their leaders to come on board. May I encourage you to build a bridge between you and your leadership, and between you and the people. Learn to listen to all perspectives, and then seek the Lord for wisdom in how you can be a part of the answer for your leadership and the church community. **T**

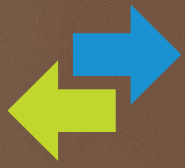


Dr. Samuel E. Tillery has over 40 years ministry experience as a Sr. Pastor, Church Planter, college Dean & Professor, International Leadership & Church Growth Consultant and a Leader in City Reach Movements & United Prayer.
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Marshall

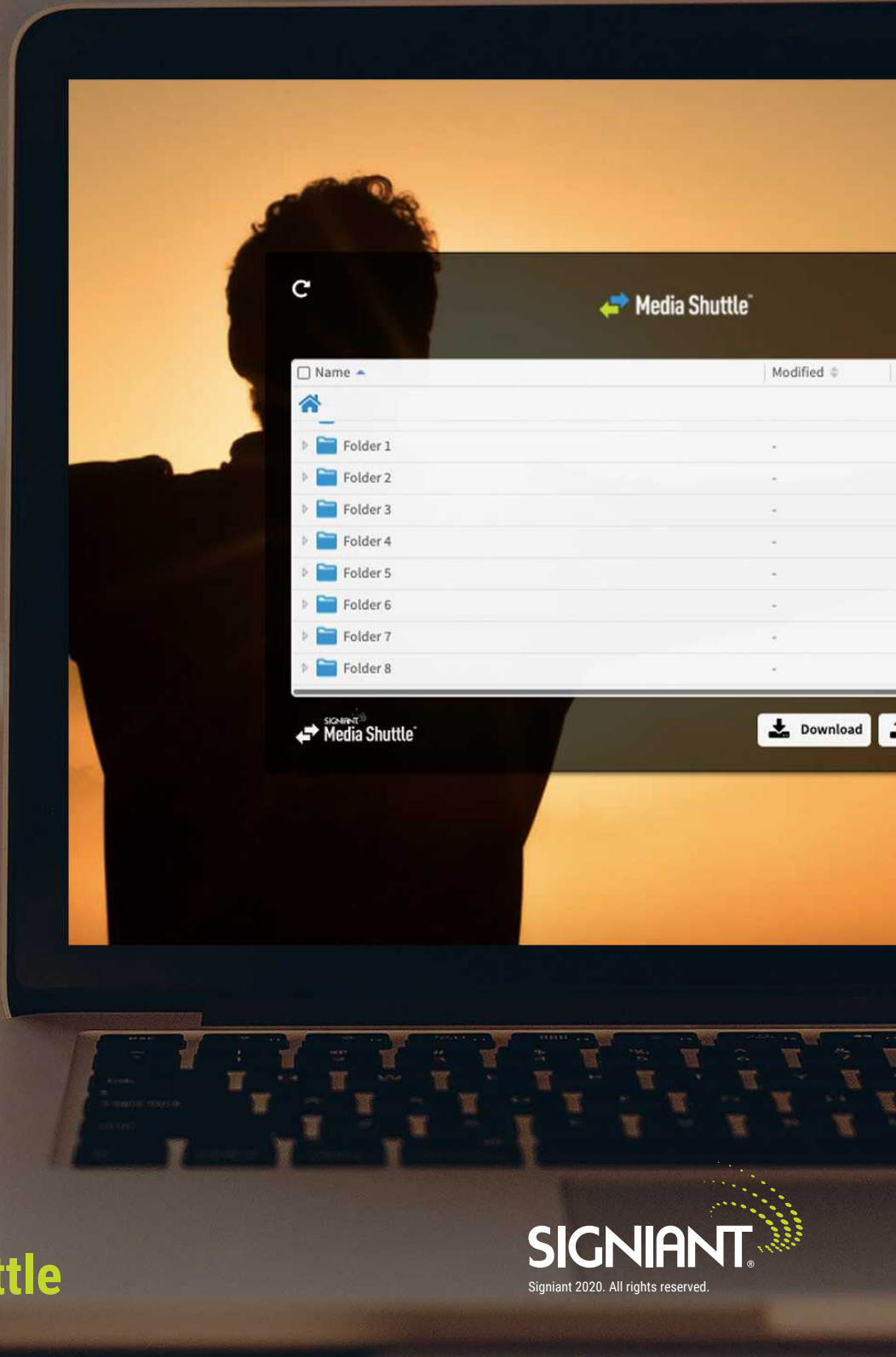
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How To Get Your Pastor On Board with Tech

BY JOHN CHEVALIER

One issue that consistently comes up in Technical Ministries is; How do we get our pastor or church leadership team on board with understanding the technology and equipment needed for our ministry? Whether it's an upgrade or the need to replace a system, rarely do those in church leadership understand the need and what you're working with.

It's important to note that the language we speak as a

technician and that of your leadership is not the same. On top of that many do not understand the technology or even truly understand the need for it. Below I've listed some tips that will help when we communicate with church leadership.

TIP #1: Clearly Communicate the Need

Notice that I didn't say, communicate, "What you need". Always start with the reason why you need equipment. Start with the what and why questions.

"What is it?", "What does it do?", "Why is it broken?", and, most importantly, "Why do we need it now?" Remember to communicate that needing it now, doesn't always mean that it's broken now. If a piece of equipment is on its last legs it's good to get ahead of the problem. This is something that most pastors and leadership teams appreciate, especially if it going to save money in the long run. This is a point you'll want to emphasize.

When you're in a

situation where you're using volunteers, always ask the question; "Am I trying to solve a training or skill level issue with gear?" Because if you are, the purchase rarely helps. There's nothing that works against you over the long haul like buying gear that does not fix a problem or does not improve your sound, lighting, video, etc. Starting off the conversation by explaining to leadership the benefits to the church will go a long way in getting the "yes" answer to a new purchase.

TIP #2: Put the Proposal in Writing

One thing that tends to turn off church leaders is asking for something without a well thought out plan. Taking the time to put your proposal in writing will not only give them something tangible to review, but will subtly communicate that you care about the church and that you want to make wise purchases. Some things to include would be:

Anything that solves

but show how making an investment at this time will yield positive long-term benefits. You'll want to include all options, including higher priced ones. Don't always assume that church leaders will always choose the cheaper option.

Although that does seem to be the trend, when I've done a good job explaining the need and the options there have been a number of times where the higher quality unit was purchased.

Include the benefits of a

There's nothing that works against you over the long haul like buying gear that does not fix a problem or does not improve your sound, lighting, video, etc. Starting off the conversation by explaining to leadership the benefits to the church will go a long way in getting the "yes" answer to a new purchase.

a problem that has been obvious in the worship service. From pop's, buzzes, feedback, etc... to a dim or unclear projection screen. Whatever it might be that's clearly an issue, make sure "the fix" for it is in your request. Generally, people feel good about purchases when the results are obvious.

Give options. Show your pastor that you have done the research. Include pro's and con's of choosing different options. Take the time to list out specific equipment. Make things really clear and explain not only why you need it,

better worship experience. Here are a couple of examples. "If we had a professional sound system we will attract a higher caliber of musicians." Or "By purchasing an in-ear monitor system we will fix the feedback issues we're having and clean up some of the muddy sound."

Include personal benefits to the pastor. Faith comes by hearing. You are a good speaker. You should sound good too... but your mic sucks. Maybe not that blunt, but you get the idea. I recently worked with a church whose pastor was a

very good communicator, however he was literally using a \$25.00 headset microphone from Amazon that sounded terrible. Replacing this made an obvious difference.

TIP #3: Speak In A Language Your Pastor Can Understand

Before writing your proposal or speaking with your pastor, spend some time thinking about how to effectively communicate your request. This is really, really important! One main factor here is knowing what your pastor actually knows about technology. It's rare to find a tech savvy pastor, but they do exist, so don't make assumptions.

In most cases though you will have to spend some time educating him/her. However, if this is the case you need to be able to do it without making them feel stupid. This is really important! Us "tech-types" can easily intimidate others with what we know. I have personally found, on a number of occasions, that if I've taken the time to make sure your church leadership understands the need, and if I do it in a way that doesn't come across intimidating, I have rarely been told "no".

In Conclusion

The bottom line is still communication. The worship service is about communication and your leaders care about how that comes across to the congregation. If we want an excellent service we are going to have to have excellent gear. When it comes to production value, the bar has been set pretty high in our culture. Like

it or not, our technical productions are going to be compared to what is being produced in the world.

The long-time church argument has been that we are not to compare ourselves to the world, and I would not disagree with that. However, what I do believe is that we have the most important message on the planet and we should do everything we can to make sure that we eliminate anything that would degrade that message. If you think about it, perhaps the church should be MORE excellent than any concert or presentation that we attend. I have held for years that we should be so good that the world comes to the church looking for technicians and musicians. If you think about it, we really do have the best reason to be excellent.

As you seek to connect with church leadership, regarding technology, put in the effort to learn how to best communicate with your pastor. This will go a long way toward getting you the equipment that you need, and building a solid, trusting relationship as well. **T**

John has been involved in multimedia communication for over 20 years. He is an Apple Certified Trainer and a full time Digital Video Instructor in Sonoma County, California. He also travels extensively presenting at workshops and seminars, focusing on Team Building and Leadership Development to improve organizational performance. www.johnchevalier.com



Intelligent File Transfer Solutions for HoW

BY MICHAEL DARER

For houses of worship, building a connected and engaged community is essential, perhaps the chief goal for each of these institutions. While there are many analogue ways to do this—a great deal of which yield fantastic results—many have frequently sought additional ways to keep in touch with their congregants. As such, over the last decade, these institutions have leveraged digital strategies to substantially grow their reach and stay connected with their congregations.

These tech-savvy organizations are now able to swiftly distribute content both live and on-demand,

connecting satellite campuses, sharing messages among ministries, and bringing their worshippers together. In recent months, these already energizing strategies have proven even more vital, with social distancing regulations making it more difficult for worshippers to meet in person.

But with the potential of this robust digital engagement among modern houses of worship come new challenges and needs, and these must be addressed if a church wishes to take advantage of new technologies. Just like they cannot operate without the Internet, many ministries who are working with more and more video content are realizing

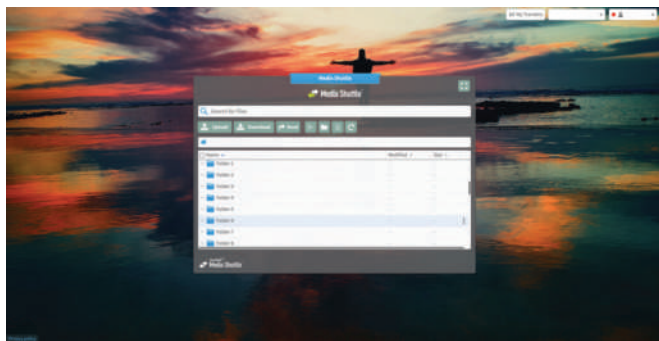
an essential need for large file transfer solutions — advanced technology that makes it easy to transfer any size file with speed and security over standard IP networks, no matter how far they need to go.

With the help of intelligent file transfer solutions, churches have ditched ill-suited means of data transfer like FTP, Dropbox, and hard-drive shipping, and embraced modern SaaS solutions that's fitted to their mission. Creating a dynamic, evolving digital ministry requires dynamic and flexible tools, and the opportunities presented to churches are too good to squander with the wrong solution.

BRINGING MINISTRIES TOGETHER

As many churches wish to extend their reach, it's essential to create a sense of connection between disparate ministries, as well as an ideological unity. In order to do so, houses of worship have produced more and more content that can be distributed to and accessed by worshippers no matter where they are or what ministry they belong to. A sermon delivered in New York City can be experienced all the way in Florida, and no congregant ever has to feel like they're out of sync with their church.

The responsibility that this puts on a house of worship is quite large, however. While it's unlikely that a given ministry is creating content to rival the output of something like the Guardian or a VOD service (though larger churches might ultimately aspire to), coordinating the production, editing, and uploading of the videos and audio files that compose a house of worship's digital resources requires dedicated IT personnel and solutions they can trust.



Recently, this has become increasingly evident with COVID-19 and the rise of more remote services. While CatholicTV has streamed mass services for years, viewership grew rapidly with the announcement of church closures across the country. Early on in the pandemic, Signiant reached out to a number of religious leaders to learn how they were handling streaming of services, and the responses showed just how powerful this digital strategy was. Father Paul Ring of Saint Paul the Evangelist Parish in East Bridgewater, Massachusetts saw this firsthand, when Cardinal Sean P. O'Malley, Archbishop of Boston, authorized a temporary suspension of Mass in March. Father Ring, who has taped Mass for twenty-five years, used CatholicTV as well as Facebook Live to continue to connect with his parishioners. When we conversed back in the spring, Ring explained: "[The services] have gotten a lot of views, a lot of likes, a lot of good comments — so it's something that people are hungry for," he explains.


STRONG DIGITAL STRATEGY RELIES ON EFFECTIVE FILE TRANSFER

While a priest in Father Ring's position might be able to easily upload a sermon of his to CatholicTV or to his own parish's website, houses of worship looking to expand their digital reach beyond individually conducted sermons need tools that will help them organize the production of their

videos, as well as collaborating with other organizations if they hope to include additional graphics or post-production quality. On top of this, being able to easily archive and re-access older content that might be used for promotional purposes requires a file transfer tool that interacts seamlessly with a church's own storage architecture. For all of this content to be leverageable, being able to move masses of files becomes a critical concern.

While protocols like FTP or tools such as Dropbox make sense for limited uploads, these options are--more often than not--feature-poor, and only serve to complicate the process of producing and distributing content to ministries. Not only do these tools struggle with large files and massive file sets, but they lack meaningful visibility features that allow users to track the movement of a vital piece of content or understand what might have gone wrong with a failed transfer. These solutions also frequently force organizations to entrust their content to storage owned by the provider of the tool, making it nearly impossible to make use of a hybrid cloud/multi-cloud storage environment, which is ideally suited to the production and organization of large, valuable files.

This is why churches such as Hillsong and Joyce Meyer Ministries have turned to intelligent file transfer solutions to facilitate the movement of their content. As major religious institutions with massive congregations that put a great deal of trust in their teaching, these churches need to feel confident that they will be able to produce, distribute, and make additional use of all the content they create with no unforeseen failures along their supply chain. While the technical elements that come with the discussion of these solutions may seem out-of-place when discussing church, it's these very technical strengths that empower organizations like Hillsong to build and perpetuate dynamic relationships with their congregants and to effectively spread their message and mission to all those who wish to hear it. Knowing that their bandwidth won't be limited or that a file won't suddenly disappear in transit, gives these houses of worship the confidence and the security that allows them to create the fantastic digital resources that carry their word.

With the chaos of the pandemic, more than ever people are looking for comfort and counsel, and--for many--church has provided this to them. Being able to engage with religious leaders, fellow worshippers, and the inspiration that their ministries have provided them is vital, and religious institutions have found that the digital sphere is one of the best ways to ensure this. With the help of powerful file transfer solutions, churches need never feel distant from their congregants nor the other way around. Keeping content, hope, and conversations flowing is paramount, and effective file transfer makes certain that bond can continue uninterrupted. 



Michael Darer is the Content Marketing Manager for Signiant

PROPER HAND PLACEMENT ON A VOCAL MIC

How your grip colors
the sound of a handheld
microphone

BY EDDY B. BRIKEN



When microphone measurements — such as directional characteristics and frequency response — are carried out in the lab, all potential obstacles in the sound field are removed. In fact, the microphone may even be suspended by thin wires to avoid the influence of a mic stand. This method is relevant when talking about studio microphones because it is close to how they are applied in real life. However, when it comes to handheld microphones, the situation is completely different.

When microphone measurements — such as directional characteristics and frequency response — are carried out in the lab, all potential obstacles in the sound field are removed. In fact, the microphone may even be suspended by thin wires to avoid the influence of a mic stand. This method is relevant when talking about studio microphones because it is close to how they are applied in real life. However, when it comes to handheld microphones, the situation is completely different.

Hands and Heads Affect the Sound Field

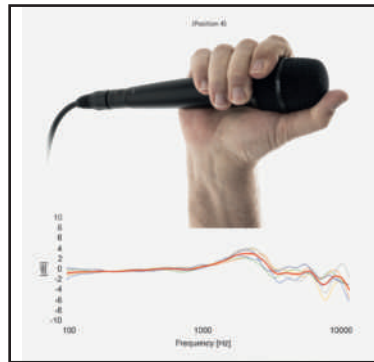
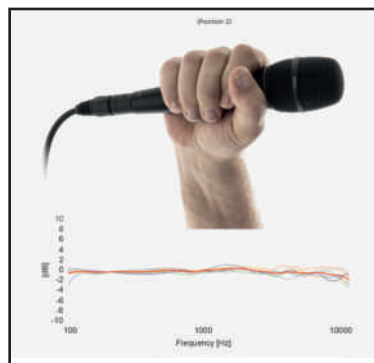
With handheld microphones, external obstacles such as hand and head placement must be considered in the testing process. This is because you can grip a handheld microphone in many ways — around the handle, around the grid, or any position in between — and the singer's head is also typically very close to the microphone. The microphone design, coupled with the way it is used, determines how its sound will be affected.

For instance, if you hold the microphone by the handle, very little coloration or change of acoustic stability should occur. However, if you hold one or both hands around the microphone head (also known as “cupping”), changes happen. When the mic is connected to a PA system, there is an increased risk of acoustic feedback and uncontrolled coloration of the sound.

Testing Examples

Using a microphone on-axis at a distance of 10-12 cm (4-5 in) from a vocalist, we measured the speech spectrum from three subjects, each holding the mic in the left hand and then the right.

Holding the microphone at the end of the handle (position 1) creates only minimal deviations from the nominal response (approximately 3 kHz), which is generally not audible. Holding the microphone at the top of the handle, just beneath the mic head (position 2), gives a somewhat higher amplitude in the same frequency range compared to the low position. It may be audible, however only to a minor degree.



Cupping the mic, with the index finger and thumb flush with the front/top (position 3), creates resonances. The main resonance is, in one case, in the range of +9 dB @ 1.8-2.2 kHz, with another found around 10 kHz. This resonance is audible (coloring the audio) and is a source of acoustic feedback in the PA system as it also changes the directivity of the microphone.

A typical position is one in which the hand covers half the grid and the thumb is laid over the top (position 4). In this case, the major resonance is found at around 2 kHz (low Q) and again above 6 kHz. For instances when the hand surrounds the microphone head (position 5), the resonances are more distinct. The major resonance is found at around 2 kHz; with around 3-4 kHz resonances also created due to the cavity in front of the microphone.

[Click here to download a PDF, full-sized Mic Grip poster](#)

Other Resonances

When the microphone is held correctly (position 1 and 2), reflections from the hand only generate minor ripples in the frequency response; but other holding positions can result in changes to the sound. The size of a person's hand will also have an impact — larger hands generally cause sharper resonances. Additionally, large open space or cavities near the microphone can alter the audio. A wide-open mouth in front of the microphone is a huge cavity, which can influence the performance of that microphone. The primary way to avoid problems is to hold the microphone on the handle not around the microphone grid.

It is also important to consider that the membrane of most directional microphones is exposed to sound from both the front and the rear. There is a delicate balance between the two parts of sound, which can easily be tilted and may change the directivity of the microphone.

For more information, check out DPA's complete guide to proper hand placement on a vocal mic: <https://www.dpamicrophones.com/mic-university/proper-hand-placement-on-a-vocal-mic>. **T**



MAXIMIZING Your Lighting Grid

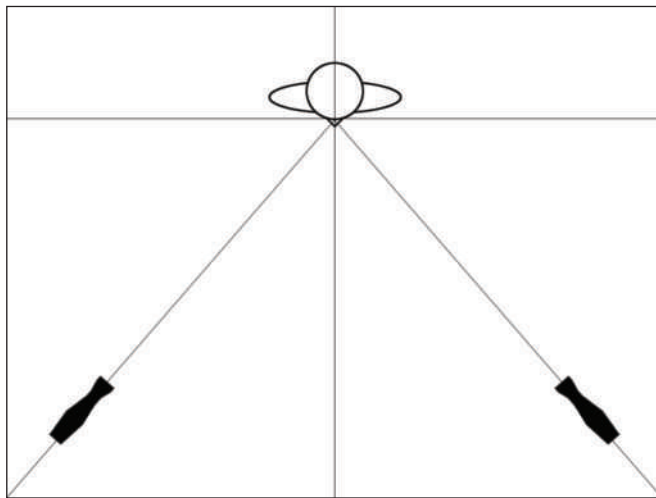
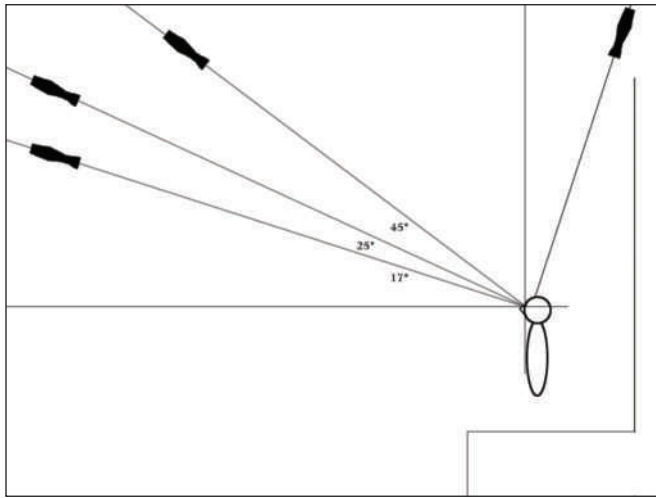
BY TIM ADAMS

I remember walking into a church a few years ago and seeing an inordinate amount of lighting fixtures for the size stage they had. Then I noticed the extension cords snaking up the beams to power some of these lights; this is the point at which I became concerned.

Lighting seems like a black art to many people because they think the answer to their lighting woes is to keep adding lighting fixtures. However, the problem is that while light IS additive (the more you add, the more you get), there are issues with this approach: think power draw, color mismatch and safety.

Being able to maximize your lighting grid means that you don't have more fixtures than you require and that you do have quality fixtures that are appropriate for your needs. People that have done a little research, or perhaps sought out advice from those more experienced might tend towards using par cans or fresnels in their lighting grid, but these have limitations in utility and effectiveness if you are needing to light an area from

PHOTO ABOVE: PROPERLY LIGHTING YOUR PASTOR MEANS ELIMINATING UNWANTED SHADOWS, WHILE PROVIDING A SMOOTH EVEN LIGHT THAT HIGHLIGHTS YOUR TALENT.
PHOTO COURTESY OF TIM ADAMS



THE ELEVATION (TOP) GRAPHIC: LIGHTING FROM 45° ABOVE HORIZONTAL ALLOWS LIGHT TO ILLUMINATE THE SUBJECT'S EYES WITHOUT CASTING SHADOW FROM THE EYEBROWS AND ALLOWING THE SUBJECT TO SEE THEIR AUDIENCE. THE OVERHEAD (BOTTOM) GRAPHIC: LIGHTING FROM 45° OFF CENTER PROVIDES EVEN LIGHTING WITH LITTLE TO NO SHADOWS, ESPECIALLY WHEN USING SOFT OR DIFFUSED LIGHT SOURCES

more than 15-20 feet away.

The most common situation I find when I consult with churches is that they have not taken the financial plunge into purchasing quality fixtures. Price becomes the ultimate deciding factor rather than utility and what is right for the space. Too often I find track lighting and/or light bulbs and fixtures that are designed for home use scattered across the ceiling or beams. Just as often, I also tend to find that the lights are in the wrong places, leading to “raccoon eyes” from too steep of an angle, or a blinding light in the eyes of those on the stage from too low of an angle.

We cannot get anywhere close to maximizing our lighting grids if we do not first understand how to use our lights. Assuming you have the correct fixtures, we can now determine how to maximize what you have. First, you must ensure that you have adequate “front” light; in the industry, this is called key lighting. This the main illumination

of people’s faces and what provides the ability for the congregation to clearly see what is happening up front; and in today’s COVID world, it also ensures the live streaming cameras can also see what is happening clearly. Often, a church could vastly improve their live streaming picture if they simply upgraded their lighting – cameras don’t lie, but our eyes do.

Front lighting should be coming in from 45° above horizontal and around 45° off-center-this ensures even lighting across your platform. My personal fixture of choice is an ellipsoidal with diffusion, which creates the nice, even and flat lighting we like to see while also spreading the light across your stage area to light up everything that needs to be lit. These are not inexpensive fixtures but in my opinion are the best for this function. If you have a short “throw distance” (the distance between the subject and fixture) you can use fresnels; however LED fresnels are so expensive the benefit of a native “soft” light might not be worth the extra money, frankly.

Once you have good front light levels, we can then turn attention to back lighting, which is extremely helpful in providing depth and separation between subject and background; this is for both the in-person and live streaming audiences. I always tell my clients, “If you light for the camera, it will look good for everyone.”

With these two areas covered, we can then start talking about the effect lighting, or “eye candy” as I call it. We’ve seen a huge increase in lighting used to create a more immersive worship environment and it can have a profound impact on keeping people in the moment and even amplifying the energy in the room.

Technology is dynamic, and lighting is no different. Being able to manipulate how lighting works for your needs in your church is going to be unique. Learning how to program your lighting controller to have different “looks” or scenes will further your ability to support the worship service and other events that happen throughout the year. Just as importantly, you need to understand the limits of your system so if someone asks you to do something the system simply cannot do, you don’t say yes! For example, an LED par cannot provide the same functionality as a moving head light. Know your limits, but don’t be afraid to push into reaching the limits of your system because lighting is arguably the most useful way we interact with the world around us. Let’s learn how to use it to worship and glorify our God! **T**

Tim Adams spent over 20 years volunteering in church technical ministry and now focuses on helping small churches achieve technical excellence through equipment upgrades, training, sharing best practices and teaching leadership how to cast God-sized vision.



Using Teleprompters

BY HOLLAND DAVIS

Teleprompters are usually used for televised speeches and news broadcasts. But can they be useful for churches? I've been recently playing with this concept and I've discovered that Teleprompters can be a great addition to your growing media strategy motivated by the global pandemic.

What is a teleprompter?

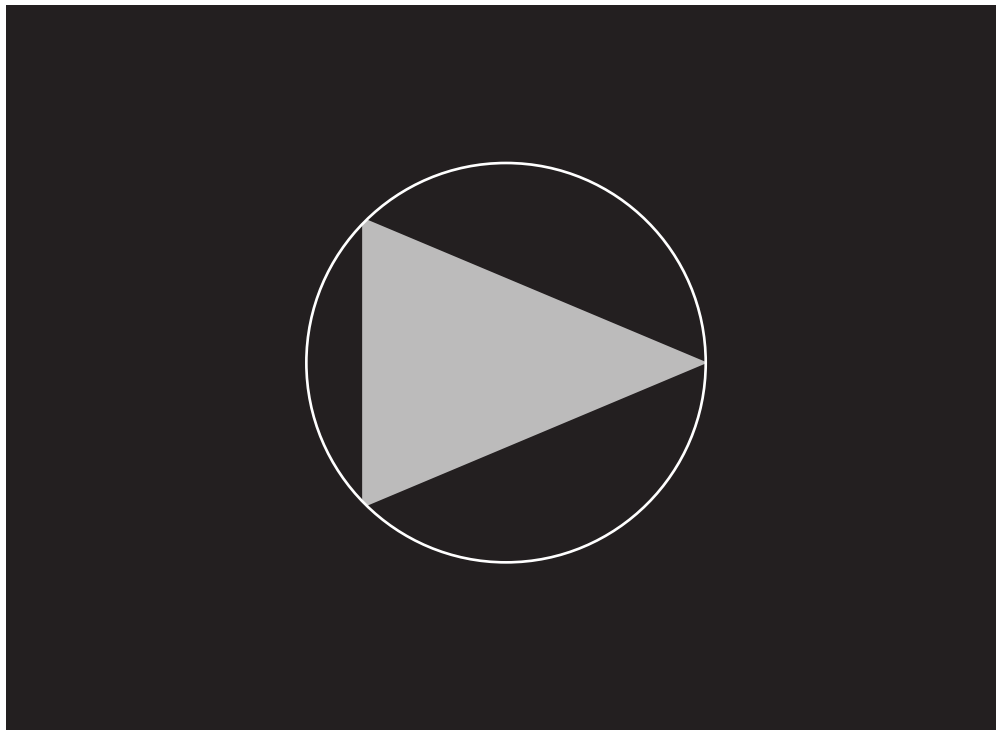
A teleprompter is a device that is used to project your notes or transcript onto a transparent screen in front of a camera lens in such a way that the text is hidden from the camera. It allows you to read from the screen and look directly at the camera at the same time.

What do I use a teleprompter for?

This is where it gets exciting. Most people have become conditioned to watching church services online. Studies have shown that internet use is up 70% and the average American is streaming 8 hours of content a day. 56% of Americans are re-watching programs instead of starting new programs which means they will be watching their favorite church services over and over again – so let's focus on getting them good content to watch.

One way to use a teleprompter is to create a new series of short commentaries on current events from a Biblical perspective. Calvary Chapel Chino Valley has done an excellent job of doing this. Pastor David Rosales writes a short five-minute commentary and then records it using a teleprompter making it appear he is speaking from memory when in fact he is reading a script. He does one per week and broadcasts it to all his social media platforms at the same day and time. The result is a growing following of viewers from his church and an expanding following of new viewers from outside his church. It's been a very effective strategy.

Another way to use a teleprompter is to re-record your sermon and posting just your message. As much as people love to worship, most churches are not able to capture a good worship experience online. Everyone wants to be like Bethel Church in



Reading from a teleprompter will lift your head from your notes, allowing you to look into the camera lens and present a more personal and powerful connection with your viewers.

Redding, but they don't realize that Bethel Redding has spent a lot of money in personnel and equipment to get there. In reality, most sound like Grandma Jones at the out-of-tune piano plunking away. (Sorry Grandma Jones... no offense). Truthfully, most viewers will tune out viewing worship and tune back in during the message, so why not do a cleaned up, well presented version of the message to post online. Reading from a teleprompter will lift your head from your notes, allowing you to look into the camera lens and present a more personal and powerful connection with your viewers.

A third way to use a teleprompter is to create news stories, also known as announcement videos. Again, it keeps the ad-lib text expansion down and keeps the personal connection high by looking into the camera lens in a way that appears natural and warm.

What are some keys to writing a good script?

First of all, you need to write like you speak. Everything needs to be written down. You can put notes up and speak off the top of your head if that's your style, but it's hard to time the message when you do so. One of the benefits of a teleprompter is you can actually time how long your message will be. If you allow yourself 25 minutes, then you can set your script to roll through in 25 minutes and it will be exact. The more you put into the script, the more accurate it will be.


Second, your message will be shorter without an audience. I usually do six pages of notes and speak for 40 minutes. However, reading six pages of notes straight through comes to around 20 minutes. That means I am engaging the audience and speaking "inspirationally" for 20 minutes of my message. That is what makes my style what it

is. Unfortunately, that is one of the downfalls of not having a live audience to speak to. However, shorter packed content on the internet has greater impact and a longer shelf life.

Third, your message will need to be timeless. Often in a live audience you are playing to the relationships you have with people in the room. However, with a teleprompter, personal references don't make sense so it will force you to write material that is more timeless in nature. That is a great benefit in that it will help you create content that is enduring.

What do you need?

You can purchase a teleprompter on Amazon for around \$ 150.00. It will hold an iPad (which is a good size for reading text). There are models that are less costly that fit an iPhone, but I've found the text to be too small to read from a distance. You will also need a camera. iPhones work great. We use a DSLR Camera and record to a SD Card. I would also suggest a wireless lav mic to capture the audio.

That is the basics for using a teleprompter. I would love to hear how you're implementing it as part of an overall media strategy. If you have new and exciting ideas please email me at hollanddavismail@gmail.com. 

Holland Davis is a teaching pastor, veteran worship leader, composer of the award-winning song *Let It Rise*, and the author of a book entitled "*Let It Rise: A Manual For Worship*." He is the Senior Pastor of *Calvary Chapel San Clemente* and CEO of *worshipsong.com*. You can follow him on twitter or Instagram @ [hollanddavis](#)



VIDEO EDITING for Pre-Recorded Virtual Services in the Small Church

BY JOHN CHEVALIER

I don't have to tell you that over the last several months there has been a serious shift in the way we conduct our worship services. Many churches had already been using Facebook Live or streaming to YouTube as a secondary connection point, however, I don't think any of us were prepared for the cultural shift that has taken place. Streaming a service with no congregation present is a much different experience than prerecording your services. Prerecorded services and events offer some advantages in communication as you have the opportunity to review and create a service/show before going "live". This is a turnkey procedure if you already have the equipment and a video production team, however, if you're livestream ministry has been an iPhone on a tripod, that you hope to remember to turn on, this brings in a whole new dynamic.

In the culture that has been created by the recent worldwide pandemic there are two basic models for prerecorded worship services. First is the Live Production Model, where you still have all the participants in one room and second is the Shelter-In-Place model where different aspects of the service are recorded from different locations. There are pros and cons to both. Let's take a look at those and then dive into some tips for both.

THE LIVE PRODUCTION MODEL

The obvious advantage here is that your pastor and worship team have much less of an adjustment as things are fairly normal. The different aspects of the service flow together as a typical service would. The downside is that, even though you may be broadcasting to people who normally attend your service, you have to realize that the experience of watching a production on online is much different than being there in person. When watching a screen people are used to seeing the speaker up close verses from one wide-angle shot from the back of the room. Things such as announcement slides and words for worship, sermon notes are not going to look good at all if you just have a camera pointed at the screen. Here are some tips for Live Production Recording.

—**Use Multiple Cameras/Phones:** Having different camera angles does make the editing process a little more time intensive, however, the effort is worth the quality you will get. One great training tool is to watch any show on TV, including larger church services and seeing how many times the camera cuts from one angle to another. You will be surprised. Using multiple angles of a speaker combined with cuts to the teaching slides will keep people engaged and less

likely to become bored. Not to mention it gives you the ability to edit out mistakes by masking it with a camera cut.

—**Keep the Projection**

Screen in Frame: In a live service people are used to seeing both the speaker/

being made and keep the audience engaged.

—**Screen In Screen Tips for**

Music: I suggest having a screen in screen the entire time during the music portion of your service.

Keep the worship leader in a small screen in the frame

editing process. Although you may not have multiple camera angles to deal with, you will have different videos in possible different formats to get into your timeline. Here are some tips for making the shelter-in-place experience work.

—**Keep the Camera Work**

Simple: It's easier here to use one camera as this is what is expected by the audience. Using multiple cameras can seem overproduced and creates more work for your video editing team.

—**Cut to Your Presentation**

Software Often: Use full screen images of the slides at the beginning of each point and every time a new line comes up on the slide. If you have the technology in your home have a TV with the slides in the frame much like mentioned in the above section.

—**Capture Worship**

“Unplugged”: Leading from home is much more like small group worship leading than corporate worship leading. Have video full screen during prayer and times of speaking and use screen in screen during all songs. Words on the screen will keep people engaged.

—**Be Creative:** As a worship leader there are many times when I've had a pastor come up on the platform spontaneously during a worship set. This aspect is missing in the at home videos I've seen. Here is a case for “planned spontaneity”. You can easily have your pastor to pray or insert encouragement in the middle of worship, you just have to plan for it. Record the pastors spot before you record your music and split the screen in half with the pastor and worship leader up there together. Not

only a cool effect but a great way to communicate unity. This way you can see how long he/she is going to speak and plan to underscore this with your guitar or keyboard as you would in a normal service. If you've already recorded the worship section you can always just cut to the pastor's video and the musician can underscore the speaking with guitar or keyboards, again using split screen, just make sure you're dressed the same.

The entire church community has had to adapt to new ways of doing things. I think we have tended to focus on getting through this pandemic and just doing our best until things “return to normal”. I wonder what impact the church could have on the world if we looked at our virtual/streaming services as our new main mode of communication. Perhaps when the day comes, where we can worship together again, our time together becomes a local celebration of the larger church body that we have reached through the broadcast medium. **T**

John has been involved in multimedia communication for over 20 years. He is an Apple Certified Trainer and a full time Digital Video Instructor in Sonoma County, California. He also travels extensively presenting at workshops and seminars, focusing on Team Building and Leadership Development to improve organizational performance. www.johnchevalier.com

There are two basic models for prerecorded worship services. First is the Live Production Model, where you still have all the participants in one room and second is the Shelter-In-Place model where different aspects of the service are recorded from different locations.

worship leader and the screen. Use screen in screen for worship and a TV Monitor behind the speaker for teaching. Many speakers have started to use a TV screen of to the side and slightly behind them when they teach live. This not only looks professional but keeps the screen in the video which keeps the content interesting.

—**Frequently Cut to the**

Projection Screen: Even when you have a TV screen behind the speaker cutting to the projection screen help to emphasize points that are

all the time. The same goes for cutting to the worship leader or band. Keeping the projection screen in the frame creates continuity.

THE SHELTER-IN-PLACE MODEL

This offers some advantages both in both production and creativity. There's something to be said about having your pastor teach from his couch at home and your worship leader leading songs in a more intimate setting. However, this does require a different type of effort in the

Worship Pastor to Video Producer Overnight

Lessons from Producing Worship Services During a Pandemic

BY ANDY CATER



Like many worship leaders across the world, in March of this year we were abruptly thrown into the video production realm. With Covid-19 rudely invading the nation, we were forced to close our churches to the congregation and left with no choice but to figure out how to stream some sort of content to our faithful flock. It was daunting and exciting and required us to jump boldly into an area of ministry we had only thought

about doing.

There have been many articles on the “how-to’s” of live streaming, and I have personally benefitted from that timely information. This article will not be that – mainly because we are still learning, and I doubt I could bring any expertise to the table in that regard.

I did want to share what we have learned and some of the decision-making we had to go through to arrive where we are today.

Let me first say that, personally, I

had been hesitant to jump into live streaming in the past. Since we had a small congregation (under 150), I didn’t see a large benefit to cost and time necessary to do it well. Churches our size started live streaming, but their audience was usually less than 10 people; that didn’t seem worth the effort to me. Also, I am sort of a quality nut, so I really didn’t want to put out a product that was sub-standard for all the world to see. But with Covid-19, that all changed. We now had an



audience; the question was – what were we going to deliver.

One of the early decisions we faced was whether to record the service during the week (with no congregation in the room), do some post-production work, and then post the content at our service time on Sunday. The benefits of this would be that we could “perfect” the service, editing out any mistakes and making sure all was good. It seemed like a great way to ensure the product was good. But, to us, something about that seemed different and unusual.

We have always been a church that encouraged feedback from the congregation. Our pastor, Mike Baker, would often ask questions of the group and use those responses as he delivered the message. It was important to him that we somehow continue that “live” feel. Also, we wanted to encourage folks to share prayer requests and concerns with others and to even pray for those while we were streaming. During the singing time, we could encourage responses to promptings like, “How has Jesus impacted your life this week?” and allow people to share. This would allow praise and worship to be more than just singing.

The decision was to continue to be live at our normal service time and not pre-package a service. Facebook Live offered a great way to live-stream

while also encouraging comments from watchers. We also were able to stream directly to our webpage, for those that didn’t have Facebook. In addition to Facebook, we set up a text line that allowed those watching on the webpage to comment directly to the pastor via text. It turns out that Pastor Mike is an incredible multi-tasker, able to keep his train of thought while also fielding comments and questions on the fly from Facebook and the text line.

The upside was that it would remain live and could also continue very easily if we did get the ok to have folks back in the room (which we are still waiting for, by the way). We would be creating something that could be reproduced in a live service. We use live music and live preaching.

The downside is that it does come with the flaws of a normal live service and, when the internet decides to stop working in the middle of the service, there is nothing we can do (except panic and pray). There have been many imperfections in the past 4 months, and there have been glitches in hardware, internet, etc. Thank the Lord, we have never had such a problem that we were not able to finish a service and all the glitches have been minor.

Believe me, it has been a bit of a rough ride, with dead microphones, the mixing console crashing, the internet freezing; I could go on and on. But

in the end, we love the natural feel of a service that is inclusive of those watching and is dynamic.

If you watch our first broadcasts (cringe), versus the later ones, I think you will notice significant improvements along the way. We went from a one-camera shoot, to two (and soon three) cameras. Audio has improved as we have learned to mix well for the internet and utilized an audio interface to bring audio to the computer. We now use V-Mix software to bring it all together which offers tremendous flexibility and creativity. Recently, we added the capability to have the lyrics as overlays; previously we just had the projector screen in the shot so that those watching can see the lyrics.

The one question we continually ask is, can we reproduce this service in front of a live church audience? This has helped us stay on track. And thankfully, our internet audience has remained consistent and not declined over the months. We look forward to meeting together soon, but we also live by the motto: “what you see is what you get”!

What we learned:

- Even if you only have one camera, make that shot as close as possible. Don’t count on a wide-angle shot to convey any emotion or inspiration from your pastor.
- The cheaper the camera, the closer it needs to be to the subject.
- Lighting is king. Spend time and money on getting that right.
- Don’t be afraid to try new things.
- Practice, practice. For 10 weeks in a row, we had the whole team at the church on Saturdays for run-throughs, going through camera shots, transitions, etc.
- Music: less is more – only using a few high-quality musicians is better than a large group of less-accomplished ones. **T**

Andy Cater is the Worship Pastor at Crosspoint Community Church, www.crosspointsr.org or visit us on Facebook at [CrosspointCommunityChurchSR](https://www.facebook.com/CrosspointCommunityChurchSR)



Making the Switch:

Mixing for Streaming Audio, PART 2

BY JEFF HAWLEY

ALL PHOTOS AND GRAPHS COURTESY OF ALLEN & HEATH

It doesn't take fancy market research to uncover the trend these days to streaming and online gatherings vs. in-person events. We've all likely noticed our favorite social happenings shift their approach and attempt to

reformat into a virtual experience instead. Most worship services have gone from room to Zoom — and with varying technical results. My 16-year old son started 11th grade today from his bedroom. His first comment about this formative and exciting

time in a young man's life? "Man, the teacher's microphone sounds like he is under water."

As we navigate this new streaming-centric land, how can we best ensure the carefully crafted sermon and sparkly new guitar strings translate through

the interwebs to listeners with devices of all shapes and sizes? First off, check out part one of this series—available at <https://bit.ly/audioforvideo>. Once you've reviewed, head back here as we continue to dive deeper into this important and timely topic.

UNIQUE, JUST LIKE EVERYBODY ELSE

While most live sound gigs will utilize a separate mix of some sort (reference recording send, split out to monitors, etc.), it is very rare that we'd be handling more than one 'main' front of house mix. We might optimize the mains to account for different areas

FOH mode.

In a typical Sunday streaming service for 50 church members, we are dealing with at least 50 different FOH equivalents beyond the usual mix to the PA in the room. For Sally on her Apple HomePod, what she is hearing in her living room is the mix. Bobby is also hearing the mix on his 2011 MacBook. The

Apple HomePod lives in the same mid-tier smart assistant speaker land as the Google Home Max and Amazon Echo and the Sonos One. According to the crack marketing team at Apple, "HomePod is a breakthrough speaker that adapts to its location and delivers high-fidelity audio wherever it's playing." I actually own one and

a reference to mix to since we can't know where each HomePod will be placed and what the active EQ, etc. will be doing to the frequency response.

Bobby isn't in much better shape. While the HomePod introduced the issue of a highly variable frequency response, it did at least have a decent average low-end response—there was something there down to 40-60Hz or so to work with. Unfortunately Bobby's older MacBook gives up at around 400-500Hz. My newer MacBook Pro seems to be able to reach down to the 100Hz or so range, but just barely. You'll find that the vast majority of laptops just can't reproduce anything below 250Hz or so reliably.

The Jones Family did their research and grabbed the 'best' soundbar they could for their \$500 budget. In that price zone, they have much better low-end response than most tv speakers and certainly better than a laptop as far as frequency and dynamic range. Unfortunately almost all soundbars utilize similar HomePod-style audio tricks to widen the stereo field and/or give the impression of hyped and powerful low-end. Explosions and jet plane fly-bys may be much more impressive, but at the expense of frequency response flatness. Check out the charts on the next page which show this hyped 140Hz-200Hz in both the Bose Solo and the AmazonBasics soundbars. This is not too far out of the norm, with JBL, LG, Samsung and Yamaha soundbar models all employing similar tactics to



A 'FOH' SOUND SYSTEM YOU CAN HOLD IN ONE HAND

of the sanctuary or have a dedicated subwoofer or front fill control, but I can count the times I've simultaneously mixed 100% separate physical spaces at the same time on one hand. Perhaps in a conference scenario or a super simple 'set it and forget it' sort of gig this approach might be workable, but it is certainly out of the norm for most of us to mix beyond the main system PA when we're in

Jones Family is a bit more advanced in their audio and is listening in on a soundbar in their den. Timmy is a dedicated parishioner and is streaming to the back seat on his family's car via an iPad and listening on AirPods. Let's take a quick look at the different frequency responses we would have in play with just this small hypothetical sample size.

Released in early 2018,

can attest to it being a reasonably good option for a simple home audio setup. The issue for us as streaming mix engineers comes in with the 'adapts to its location' part of the description. Internal DSP in the HomePod combines with on-board microphones to model and 'enhance' the audio for the physical space it resides within. Great for Sally, but not something that we can always count on as

get 'big sound' from a small package.

Timmy's dedication pays off as he probably has the best chances of an un-hyped wide frequency range listening experience. Many headphones are designed for critical listening and many prosumer options are quite good at delivering a workable sonic mix without breaking the bank. Our challenge here with Timmy's in-ear listening device is two-fold, though—compress and clamp down the dynamic range too much and Timmy will quickly experience listening fatigue, leave the mix uncompressed and without adequate limiting and risk a sudden level spike which Timmy definitely won't appreciate.

Long story short, there are quite a few considerations to keep in mind when crafting a broadcast mix that will work for the multitudes of "FOH" systems that your audience will be utilizing. Mixing for a 2" laptop speaker is going to require a different approach than mixing for your usual line array and row of touring-grade subwoofers.

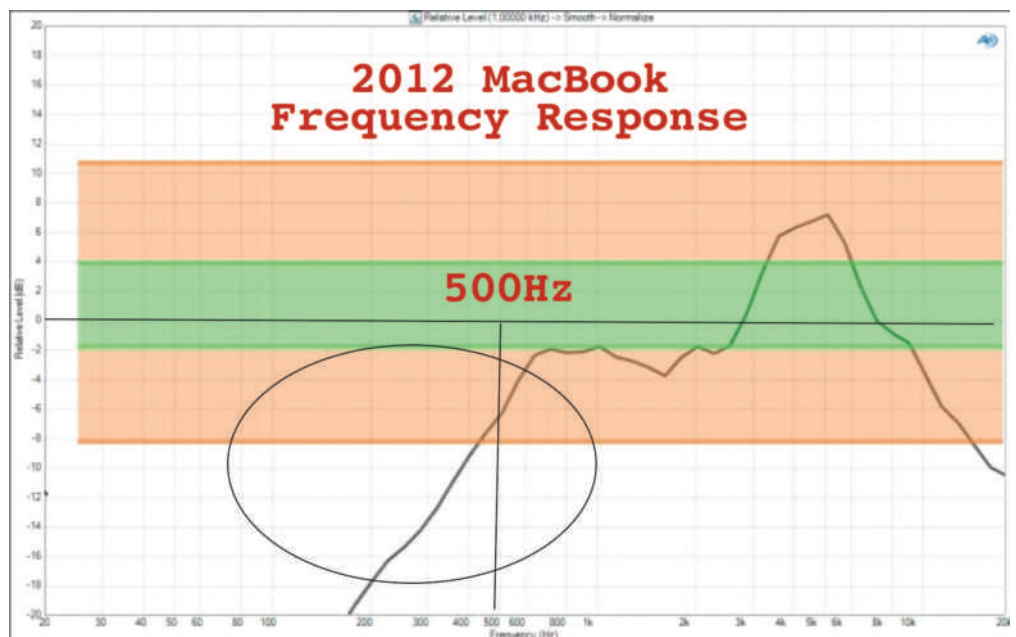
USE YOUR EARS

A quick acronym that I use when thinking about crafting the most effective broadcast mix is EAR. Emulate, Accentuate and Restrict.

As noted in the first part of this series, 'Emulate' is probably the most important step. Do your best to emulate what the audience will be listening on. Keep a pair of AirPods and a bookshelf speaker or smart speaker and an iPad near the



APPLE'S HOMEPOD TRAILS OFF IN AROUND 45HZ IN THIS EXAMPLE, BUT EACH PLACEMENT CAN VARY



WHAT DID YOU EXPECT FROM A TINY LAPTOP SPEAKER? HIGH PASS FILTERS ARE YOUR FRIEND



Soundbar examples from Amazon and Bose show 'mid-bass' bump; common in this audio speaker form factor

desk to be able to reference as you go along.

Why are folks tuning in to watch and listen to the stream? Make sure that you 'Accentuate' these sources and prioritize accordingly. I'd bet dollars to donuts that the pastor's mic is the make or break in almost every worship stream service. If her mic sounds good, you're good. If you've crafted a Grammy-winning worship band mix but her mic during the sermon is muffled, you're in trouble. This same idea applies to frequency ranges—don't spend tons of time honing in a rockin' 40Hz sub-bass thump when most of your listener's systems can't even reproduce that frequency. I try to pinpoint the average fundamental of the pastor's speaking voice and carve out just about everything else that might compete in that space. Accentuate key elements and frequencies by chopping out (or using a high / low pass filter) those elements and frequencies which aren't primary and cannot be reasonably reproduced on consumer sound devices.

LASTLY, 'RESTRICT'

Remember poor Timmy in the back seat? Without proper attention paid to compression and limiting of the mix, folks listening on headphones may be one errant fader move or guitar boost pedal click away from disaster. I usually set a layered limiter sort of approach on my mixes, subtly limiting peaks at the source channel, adding a bit more of a dynamic clamp on subgroups, and deploying a 'brick wall' limiter on the master output. Safety first. Make sure that you don't go overboard with compressing the dynamic too much, though.

Variety is the spice of life and a slammed and over-compressed mix is also a real headache (literally!) for folks listening on headphones for the entire 90-minute service.

Thanks for tuning in for this article and I look forward to listening to your latest mix soon! Just as the best audience listening spot in most live scenarios is right next to the FOH position, the best stream experience is going to come to those who are listening at home on a system most like what the broadcast engineer is utilizing for mixing and monitoring. Now how do I get my dLive setup in the back seat of the car? **T**

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Jeff Hawley

currently heads up the marketing for Allen & Heath USA. Jeff has a diverse background as a musician, engineer and trendsetting industry executive. In addition to performing and producing, Jeff has designed award-winning music industry products and accessories and directed the branding and marketing functions for a number of top musical instrument and pro audio brands. Recently relocated to the Pacific Northwest, he enjoys roadside wild blackberries and playing in the garage.



Small Streaming Solution Adds Up to Big Boost For Texas Church

BY ANDRES CAAMANO



When seeking to make big improvements to its streaming capabilities, a church too often concludes a big and complicated investment is required as a solution.

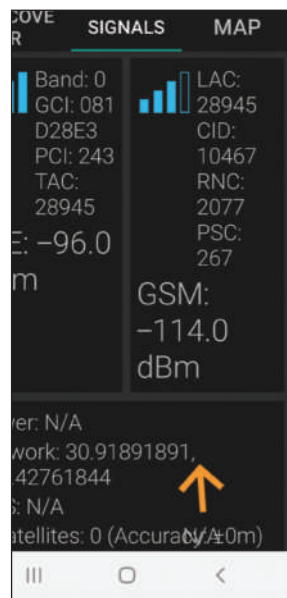
For Agape Church in eastern Texas, about 120 miles northeast of Houston, streaming began a few months ago. With a congregation of about 50 in a town of around 600, streaming started once the first shutdown began (in response to COVID-19). “We missed the first Sunday (at the beginning of the shutdown). After that, we then started streaming with my cellphone,” said Agape’s associate pastor, Thom Shields.

Streaming Using Cell Signal Required Solution

From there, the church quickly shifted from recording with the pastor’s cellphone, to capturing the services with a JVC camera. New problems swiftly arose, though, beginning with buffering issues.

At the 31-year-old rural church, the pastor had originally looked to run its streaming through DSL. “That was pretty slow, and we had buffering issues,” explained Shields. To try to limit buffering, the pastor began using his own cellphone’s personal hotspot as a solution. “It allows for a faster speed,” but without a booster, it still was not enough to avoid buffering.

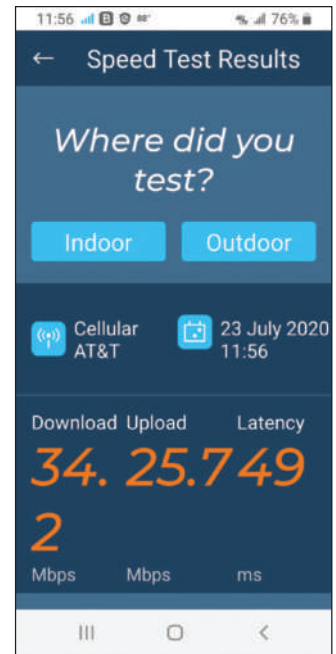
Plus, there were other issues using the cellphone’s personal hotspot. “When I’d get a call, it would cut off the livestream,” noted Shields.



Testing Shows Signal Strength Weak Inside Church

Seeking an ideal solution, Shields reached out to eight companies. “SureCall was the only one who reached back to me,” noted Shields. After running the SpeedTest app and the Android LTE Discovery app from his phone to measure the dB signal strength, along with download and upload speeds, he passed that information to SureCall.

With that information, the SureCall Fusion5s cell signal booster was deemed an ideal match for Agape’s needs. Prior to using the signal booster, the church “did not have a very strong signal inside. We walked them through to recommend the right booster,” said Frankie Smith, vice president of sales of SureCall. From that conversation, “We could ensure that (Agape) had the right gear for the area they wanted to cover. Then it became a more intuitive and easier process.”



IMAGE, FIRST COLUMN: SCREENSHOT DISPLAYING THE DBM MEASUREMENT FROM OUTSIDE THE CHURCH. IMAGE, SECOND COLUMN: SCREENSHOT OF THE SPEED TEST RESULTS FROM INSIDE, 34.2 MBPS DOWNLOAD AND 25.7 MBPS

Suited for large home or office spaces, up to 6,000 square feet, the Fusion5s solution boosts 3G and 4G LTE signals. With its addition, it quickly resolved Agape's issues of buffering for those watching a service from home.

With the Fusion5s, "it takes the signal outside from the carriers, and captures the signal. It takes that signal from outside, brings it inside the walls, and boosts the signal throughout the church," said Smith.

"(Shields) was able to upload and stream without it buffering and glitching. The goal was to have it not break up while streaming," he said. "When you are on YouTube and all it does is spin, it can be frustrating."



In-Person Services Return, Streaming to Continue

Even though the church recently returned to hosting in-person services, Shields recognizes the need to continue streaming its services. "Our YouTube (views) are picking up," as are the church's views on Facebook, he added. These recent gains were realized even though the small church has yet to create its own website.

By Agape recently installing the Fusion5s, the change has been an immediate benefit to Shields' congregation. Since the move, "I haven't had any complaints about buffering, which I had in the past," he noted.

Courtesy of the booster, the structure did not negatively impact the signal. It allowed a signal that before the booster had run in the church at less than one megabit per second, and increased it to almost 26 Mbps.

"When you have a building that has a metal roof, in a rural community, and you are using a cellular connection for the internet, the booster is the best solution for us," explained Shields.

Boosted Signal Opens Doors to Potential Upgrades

The improvement of the Agape's capabilities with its streaming have been so significant, that the associate pastor is considering upgrading its video capabilities in the near future.

"I'm looking at where we will (eventually) have two or more cameras with a switcher," said Shields. With the Fusion5s, it can work with additional pieces of equipment, while keeping "a stable signal. And I will still plan on using the SureCall with my cellphone."

Upon deciding that the Fusion5s will serve as the best investment to improve Agape's streaming capabilities, the

installation proved to be incredibly simple and short.

According to Smith, "As a rule of thumb, it can take up to an hour, with running the cable outside."

Once Shields figured out the right connections for the Fusion5s, "It only took five minutes. We did a 'soft' install, ran sound, but didn't check the cables." Upon figuring out the inputs to the booster, "Then we were fine. In all, it took about 25 minutes to get it right in."

Other items included in the install at the Texas church included an antenna on the roof, and cabling between the booster and antenna, noted Smith.

As a result of such a minimally invasive install, the church did not have any delayed or cancelled services.

Booster As Solution Scalable to Churches of All Sizes

While the Fusion5s was an ideal match for Agape, Smith cited the SureCall line offers solutions benefitting any church.

"Houses of worship come in all shapes and sizes. We can help megachurches, who work with a professional installer or have an IT team," noted Smith. "Boosters like the Fusion5s are a scalable solution, beginning with the smaller churches, from DIY up to a professional installation, and everything in between."

Upon getting up and running, Shields appreciated the assistance SureCall provided throughout the process. "We had a conference call with an install engineer. I was told that if you still have any difficulties, to give them a call. I was appreciative to have that sort of backing, for

them ready to help me, if needed," he said.

From the initial phone call, Smith indicated SureCall outlined best practices as well as things to look out for, and a user manual detailing directions on setup. "He didn't need any troubleshooting help, and we didn't hear from him until he was done installing it."

Shields explained being extremely satisfied with the results. Among the goals of the install, he said, "was to have a strong signal. And to have an upload speed that is fast enough to not have it stumble." Even better, Shields added, was "having (the speed increase so dramatically). That was the goal and it was accomplished 100 percent. I was excited about it." ■



TOP: SURECALL FUSION5S

BOTTOM: A WORSHIP BAND SINGS DURING A RECENT SERVICE AT AGAPE CHURCH.



The New Age of Virtual Events: Lights, Camera and Stream

BY VINCE BECQUIOT

At the time of this writing, we are in the middle of a pandemic with no relief in sight. Corporations and nonprofit organizations alike are still scrambling to find a way to reach their customers through virtual events and Zoom meetings. Many of these webcasts will likely continue to take place long after this health crisis has subsided, in the form of hybrid events or additional sessions.

By 2021, video traffic will comprise 80% of all consumer internet traffic, according to Cisco. Consumers now spend an average of 90 minutes a day consuming digital video; The world will reach three trillion Internet video minutes per month by 2021. So, what does that mean for you?

Your audience expectations are very high and their attention span shorter than ever. Your

production values will need to be on par or better than everyone else in order to compete with every other video opportunity out there. Your lighting, sound and video quality will immediately cue the audience as to whether they should move on or stick around, but even more importantly, your content will need to be interesting, attention grabbing and rewarding to the viewer.

Live streaming really

hasn't changed drastically over the last few years. The software and hardware options are very similar to what they were back when we started streaming in 2010, but higher bandwidth has made it possible to push audio and video quality to a level you would expect from cable or satellite TV.

Below, we'll look at equipment we've successfully used to stream to thousands of people on a weekly basis, and we'll start with perhaps

the most important, yet most overlooked part of a quality video production, lighting.

LIGHTING

Before we go any further, I highly recommend that you hire a qualified lighting designer who can suggest the correct fixtures and design. You should also leave the installation to a qualified rigger, even if you have existing truss and pipes. I have seen my share of lighting installations I would never be caught walking and even sitting under.

Most of the lights you'll find these days are LED fixtures both as static and moving lights. Quality lighting will provide a good contrast between your stage and backdrop. An even, soft lighting on stage and colors who work well together. Your lighting company should also be able to provide programming and presets for different shows and should be available to provide your staff with basic training. Lighting consoles can be very intimidating at first, and some will require weeks of training to get a basic show programmed. And while your budget will likely drive this purchase, understand that a lighting console crash means that your entire room is in the dark until a solution is found. Backups will go a long, especially with a computer driven control surface.

VIDEO

On the video side, DIY is much more approachable if you are willing to do a bit of research.

I will only be mentioning the products we're using

on a daily basis, but there are truly too many good products out there to list. For cameras, you'll mostly find two options, robocams, and traditional camcorders. At the time of this writing, robocams tend to be on short supply. There are a few brands we like, including the ubiquitous Panasonic HEW130. This is a workhorse of the industry

unlimited, so will prices. Sony and Panasonic will usually be favorites here, and while I will not mention particular models, you should be looking for cameras that provide a clean output via HDMI or SDI. It's also worth mentioning Blackmagic in this section as they have disrupted the video industry in the last few years. We do however find

favor VMix for its stability and wealth of features, Wirecast earns first place for ease of use. They can both handle simple camera switching, as well as complex split screens, titling and overlays. VMix updates do tend to be low priced or free, so it will be cheaper in the long run. VMix requires a PC, while Wirecast will run on both Windows and OSX.

Both of these options will require an input device that converts your camera signal to USB or Thunderbolt. If you have just one camera, a single input converter will be sufficient. These include Blackmagic's mini recorder, Aja's UTap and Magewell USB capture. If you have a desktop PC, capture cards from Blackmagic and AJA are also a great option. Blackmagic and AJA also have solutions that will handle multiple inputs and output with both SDI and HDMI for more complex setups. Both Wirecast and VMix have built in streaming and recording, but do check requirements as these are very processor intensive.

You should also consider free options such as OBS Studio and XSplit which are great alternatives, although lighter on the feature side.

Now, let's look at hardware switchers. From an operator's point of view, they are usually more reliable and easier to learn, but also more limited when it comes to customizing the overall look of your stream. Blackmagic is the low-cost leader in that area. From ATEM Mini switchers to their bigger live production switchers, you'll be able to find something that suits your needs. Roland also has some good options, from its simple VH1HD to

Live streaming really hasn't changed drastically over the last few years...but higher bandwidth has made it possible to push audio and video quality to a level you would expect from cable or satellite TV.

and you can't really go wrong with these units. For the budget minded, PTZ Optics and BirdDog are quickly rising in the video industry and are worthy contenders. My only advice would be to stay away from the base models as they tend to suffer from softness and excessive noise. Here again, good lighting will go a long way to getting most cameras to look great on screen. Don't skimp on the controller. Here again, I highly recommend Panasonic's lineup as they truly are a joy to operate, especially as a one man/woman crew.

On to camcorders, the options will seem nearly

their cameras often require a higher amount of light to provide a quality image.

If someone is operating the camera, a good tripod will be an important accessory. A professional fluid head will cost a pretty penny, but it will allow your operator to follow on tight shots without jerky motions.

Switchers and Encoders

Switching and encoding are next, and boy do you have choices. These choices will mainly come down to what you'd like to see on screen and how complex of a system you are willing to train on. We'll start with software options, the two big players are Wirecast and VMix, and while we now

the more advanced V-8HD and VR-50 HD. On the higher end, you'll find Sony, Panasonic and Ross offerings worthy of a look if you have a larger budget.

Last, but not least...

Let's not forget the audio. If you chose the software route with VMix/Wirecast, you will need a USB interface such as the Scarlett Focusrite 2i2 or the Behringer UMC404HD. These will take the XLR output of your mixer and convert it into USB signal.

The last piece of equipment on our stream chain is the encoder. It will take your program video and convert, then stream to a format that your CDN, such as Youtube and Facebook will understand. Some switchers from Blackmagic do provide that functionality, but the best option will almost always be a standalone encoder. We really like the Vidu Go from Teradek. It really shines in its versatility, from bonding (The combination of multiple connections such as Wifi, ethernet and cell signal to provide a redundant connection), to its simple smartphone app that will have you streaming in minutes.

Now that we talked about the hardware, we should mention connecting it all together. You have basically 3 options, HDMI (up to about 50' run), SDI (Up to 400' with the right cable) and NDI, the newest kid on the block which carries audio and video over ethernet cabling at similar length to SDI. If you decide to go with NDI, do your research as it requires its own robust network to operate seamlessly.

STREAMING

Now that we have our equipment figured out, where do we stream? Youtube really is the best option at this time. It's free, reliable, easy to setup and has all the features you will need, from user chat, to recording and a DVR for people showing late to your stream and want to start from the beginning. It's easy to embed on any website and allows recurring events so that you don't have to set it up every time. Other options include Facebook, Twitch, Vimeo, Wowza and Boxcast, to name a few.

Before we close, we should talk about a few very important points that can make or break your live stream. The first is backups. If you choose to stream via VMix or Wirecast, have a spare computer with the same project ready to go. Computers crash and with that so does your event.

Second is copyrights, while YouTube is a fantastic streaming platform, they will not be forgiving when it comes to copyrighted content. That will mean sending special royalty free audio content to your stream to avoid being shut down.

Finally, test, and test again. Leave your equipment run overnight, put it through the paces. Always monitor with headphones and have a backup recorder.

So why wait, the streaming world is waiting for you, go engage your audience and please, have fun doing it. 📺

Vince Becquiot is a producer at Indigo Live in Santa Rosa, California | Vince@indigolive.com

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The Chosen



PHOTOS COURTESY OF THE CHOSEN AND VIDANGEL

*In our magazine, our focus is always on the gear ministries can use to propel worship forward, to grow communities and to welcome the unreached. When we were offered the opportunity to talk to Justen Overlander, Associate Producer of *The Chosen* – a scripted multi-season television series about Jesus – we jumped at the chance. “Wouldn’t it be cool,” we thought, “to find out all the different tech they are using to bring this story to life?” We envisioned a breakdown of the number of cameras, the types of mics, the lighting...everything we would normally discuss in a Tech Spotlight.*

*Let me tell you, this article is not what we originally planned. The story of *The Chosen* is too unique for that, offering viewers a way to Christ through the secondary characters we’ve all read about in the Bible, but never really got to know. However, let’s begin (as all good stories must), at the beginning. Justen Overlander lays it all out for us...*



In 2017, director/writer Dallas Jenkins created a short video for his church called *The Shepherd*, about an outcast shepherd who was witness to the birth of Christ. You can watch it along with the entire series on the free Chosen app. This short 19-minute film went viral (over 15 million views) and caught the attention of faith-based filtering service

VidAngel.

They had been looking for original scripted content and approached Dallas to see what he might have to offer. At the time, Dallas and his writing partner Tyler Thompson had been bouncing around the idea of telling the story of Jesus through the ancillary characters, bringing a humanity to them in the retelling of the story of Jesus' life.

VidAngel was instantly intrigued by the concept. However, scripted series are expensive to produce. There are a lot of costs involved, from paying the actors and extras, to production, location and sound stage shooting, makeup and costuming, cinematography, post-production and more. The first season's eight-episode arc was estimated to come in at around



ten million dollars, which isn't a lot of money for big studio productions, but seemed almost impossible for a small, independent, company like VidAngel.

And that's when the idea of crowd-funding the series was floated.

Prior to *The Chosen*, the highest-earning crowdfunded production had been *Mystery Science Theatre 3000* (roughly five million dollars

raised). However, Dallas believed it wasn't his job to feed the five thousand, but to provide the loaves and fishes; crowdfunding provided the opportunity to do just that. We started production on the first four episodes after our initial crowdfund raised enough to cover costs and trusted that God would see us through during our second crowdfund to raise enough

money for the final four episodes of the first season. In total, *The Chosen* was able to raise just over \$11 million, from 19,000 investors.

Everything just seemed to fall into place after that. Ryan Swanson was added as the head writer, joining Dallas and Tyler, and they work really well together. We have a video that will be available soon on *The Chosen* app of them soon discussing their writing process for the series.

We found the perfect location to shoot, an existing recreation of a Capernaum Village near Weatherford, TX, and supplemented location filming with some special effects and sound stage work. For example, the Sea of Galilee is a lake and we used digital effects in some areas to add first-century scenery and appropriate landscapes. Many of our viewers are surprised when they find out we didn't actually film in Israel.

Casting has also played a huge role in the success of the first season. Dallas had always planned to bring a visceral humanity to the characters, making them fully fleshed out people with struggles and dreams, living lives both extraordinary and mundane, to give the audience a way into the story. How did the people that knew Jesus best see Him? How did they relate to Him? Finding actors that could carry these stories forward was of utmost importance.

Dallas had worked in the past with Jonathan Roumie, our Jesus, and knew from the get-go that he was our man. Jonathan can convey a wealth of emotion without even saying a word and provides the perfect anchor for the rest of our cast to revolve around. Elizabeth Tabish, who plays Mary Magdalene, is from Texas and is absolutely the perfect person for the role. Dallas' son recommended Erick Avari to play Nicodemus, who is probably the most recognized actor on the show and has an IMDb credits list as long as my arm.

Dallas is also committed to retelling these familiar stories in a more modern way. Even though the events in *The Chosen* take place 2000 years ago, there is an immediacy in their retelling here.



Every aspect of production is focused on making Jesus and his contemporaries live; we want viewers to fall in love with them, to empathize with their struggles and to find the hope and the joy they found in Christ. Each episode is approached with the idea of sharing the story in the most authentic way possible, while also providing a more modern aesthetic.

An important part of that aesthetic is the cinematography. Akis Konstantakopoulos, our cinematographer, works seamlessly with Dallas, and has been able to capture some really amazing looks despite our limited budget. For example, 2000 years ago the primary sources of light were the sun, the moon and fire. Akis uses these light sources as often as possible to provide that sense of authenticity, right down to the flickering of candles.

The Chosen is shot on a pair of Arri Alexa Mini cameras with Cook panchro iclassic lenses. Most setups utilize both cameras and a blend of handheld, steadicam, and smooth jib shots.



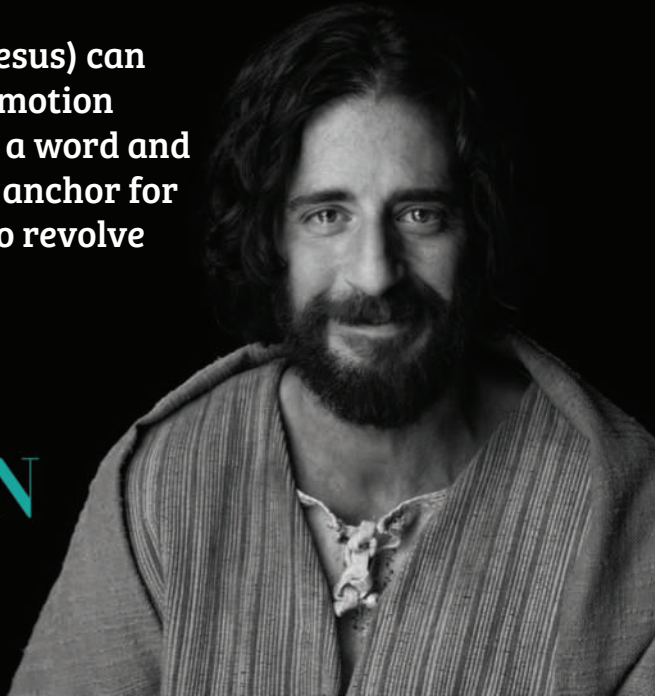
Audio is captured through lavalier microphones and a shotgun mic on a boom pole just off camera. The real challenge in audio has been traffic noise from nearby highways and summer Texas cicadas, but our post-production audio mixing at Kappa Studios in Los Angeles has been wonderful.

Another aspect of what we are doing which is completely unique to *The Chosen* is that we are releasing our content on our own app. All the episodes are available to watch for free and we have a plethora of behind-the-scenes videos, giving viewers insight into the history of the show, conversations with our biblical consultants, and plenty of making-of vignettes.

The app tracks the amount of people who have watched an episode (ed note: as of this writing, it was almost at 60 million viewers, and the goal is to reach 1 billion streams). It also tracks where we are at with our fundraising for Season Two which, incidentally, starts filming in early

Jonathan Roumie (Jesus) can convey a wealth of emotion without even saying a word and provides the perfect anchor for the rest of our cast to revolve around

The CHOSEN




October. People can contribute to future seasons of The Chosen right from the app by tapping “Pay it Forward.” This system also helps others around the world view The Chosen for free in multiple languages. We even have a gift shop with shirts, hats, posters, and a devotional that takes viewers even deeper into the ministry of Jesus.

Our app has been developed from the ground floor and really is a technological breakthrough. Sure, you can watch all the episodes on your iPhone, iPad, or Android device, but you can also cast them to your Smart TV with Roku, Firestick, Chromecast, Apple TV, and more. And of

course, the gift factory has DVDs and Blu-rays (even a special edition coming this fall) for those who still like hard copies like I do!

We are excited by the response to The Chosen, not only from people who already know Jesus but from viewers who are finding Him for the first time. We have over a million followers on Facebook, half a million on YouTube, and our Twitter, Instagram, and TikTok numbers are growing. We are committed to continuing to tell these stories through the unique perspectives of the people Jesus interacted with on a daily basis, and we believe season two is going to be just as impactful as season one was.

“Oh child, Come on in, jump in the water, Got no trouble with the mess you’ve been, walk on the water...”opening theme, The Chosen 

Justen Overlander is an associate producer for *The Chosen*. He’s been in the film industry for 25 years, but he says *The Chosen* is the biggest and far and away most important project in which he’s ever been involved. A Minnesota native, he spends most of his time near the water with his wife and three kids. Follow him on Instagram @justenoverlander



DOWNLOAD THE APP



THE CHOSEN ON SOCIAL MEDIA





Hitachi Kokusai's SK-HD1800 Broadcast and Production Cameras

BY PHILLIP ASHWORTH

When Immanuel Baptist Church of Little Rock, Arkansas designed our new on-campus City Center for ministering to the community and hosting local corporate activities, we purchased three SK-HD1800 cameras from Hitachi Kokusai to enable premium-caliber, in-house video production capabilities. The visual quality of the Hitachi cameras has shone even brighter during the COVID-19 pandemic,

elevating our live streaming and IMAG as we moved our worship services from our primary church building to the new City Center auditorium.

Founded in 1892, Immanuel Baptist's vision is to be a gospel advancing church for the gospel, for the city and for the world. Developed in a massively renovated former Kroger grocery supermarket on the same campus as our main church building, we created the City Center for use by

community organizations and companies for conferences, training seminars, and special events.

Our church has placed a high priority on video ever since we became one of the first to broadcast our worship services live on television in the mid-1970's, and we considered it similarly important for the new venue. We wanted to have a high-quality production entity in the City Center so that anyone using the facility would feel

comfortable that they're getting top-notch IMAG and live streaming capabilities.

The cameras we choose play a key role in making sure we achieve the level of quality we want, so even though we had a different vendor's cameras already in our main worship center, we wanted to see if we could do even better in the new building.

We evaluated cameras from multiple manufacturers at the NAB Show and decided the SK-HD1800 was



video walls and looking at different vendors' cameras shooting with them in the frame, and we saw artifact issues such as flickering. We then put the Hitachi camera on the video walls, and it eliminated that problem for us.

We purchased the Hitachi cameras from systems integrator Edgemont AVL and deployed them in fixed positions – and on a recently-added tracking dolly – in the City Center's auditorium, which had seating for around 850 people prior to COVID. The auditorium is also equipped with a FOR-A switcher and router; Allen & Heath audio mixing console; and Danley Sound Labs sound reinforcement system. In addition to driving IMAG on the room's 32-foot by 10-foot Primeview video wall and live streaming through a Teradek Trax encoder, the camera feeds can be called up in multiple rooms in the City Center and main buildings through our campus fiber network.

We saw a noticeable difference in the image fidelity produced by the SK-HD1800s compared to the camera-and-lens combinations used in our church's main sanctuary. The thing that jumped out to me right off the bat was the clarity of the image – it was a sharper, better-looking picture overall. The colors are also truer, flesh tones look a lot more realistic to me, and it's much easier to match the cameras.

The SK-HD1800's handling of low lighting is also a big difference from what we are used to; we

can run them in low light without having to bump the gain, yet the noise is basically non-existent. And our volunteers love working with the SK-HD1800s, as they find them smoother to operate and like the viewfinders better than our other cameras.

We opened the City Center in February 2020, but the quality improvement enabled by the SK-HD1800s came even further to the forefront when the pandemic led us to relocate our worship services from our main sanctuary to the City Center for easier social distancing and disinfection. Now that we were using the Hitachi cameras for our worship services, we had immediate feedback from people watching our screens and streams that they were noticing the quality gain.

That was a particularly huge deal for us when we needed to jump to 100% online for several weeks. People were always thankful for our online stream, but we never had comments about the quality before. Now, right out of the chute, people were commenting that 'I don't know

what you did, but it sure looks better.'

That improvement has led our team to discuss raising the quality of video productions our main worship center once it reopens, and when budget permits, I would love to replace its existing cameras with SK-HD1800s.

I feel like having a strong video production element says a lot about the fact that we care about what we're doing, and that we want it to be well-received. The new SK-HD1800 cameras in our City Center have shown our membership and community that we are being good stewards of the money that we spend on production, and that we want to do it with excellence. The Hitachi cameras enabled us to up our game, and people noticed. ■

Phillip Ashworth
is Director of Communications at Immanuel Baptist Church in Little Rock, Arkansas, and has worked for the church since 2002.

our best option. It had better overall image quality, and I was pleasantly surprised by its affordability. We have always loved Hitachi cameras, but when we did our main worship center years ago, our tight budget didn't allow that class of camera. I was thrilled to find out the SK-HD1800 fit our budget for the City Center.

The SK-HD1800's advanced global shutter technology was also a key factor in our selection. We were evaluating various LED

PHILLIPS' REPORT

FUNCTIONALITY



QUALITY



EASE OF USE



RELIABILITY



OVERALL VALUE





It's rare that I do a product review that's relevant to culture, circumstances, or a worldwide crisis, yet here we are. Over the last six months the church has been thrown into a new world. Some churches had already been live streaming their services while others were forced into this new reality. Some broadcast from their churches and others have been leading worship from home. That's where this product review comes in. I want to introduce you to Yamaha's TransAcoustic Series Guitars.

As a guitarist myself I tend to shy away from what looks like fad-type gear. So, my first reaction to a guitar that produced chorus and reverb without being plugged in wasn't good. However, with the current pandemic and the many worship leaders who are leading worship on livestream from their living rooms, I took a closer look. I went to Yamaha's website and listened to some audio samples and thought, if it

sounds this good in person it could be really useful right now. Yamaha graciously honored my request and sent me an LL-TA as I believe this model would be the preferred choice for most worship leaders.

The guitar came in a Hard Gig Bag with backpack like shoulder straps. This model, with the solid Engelmann spruce top, has the mother of pearl rosette and fret dots. Picking it up it has the feel of a quality instrument. The body seemed a litter heavier than I expected until I remembered the additional weight of the electronics inside.

FEATURES

With this guitar it would be easy to focus on the technology and forget about

the instrument itself. The

TransAcoustic series has a solid Engelmann spruce top that has been artificially aged with Yamaha's A.R.E (Acoustic Resonance Enhancement) Technology, which gives the guitar a tone that is normally only achieved after years of use. The back and sides are solid rosewood with a 5-ply mahogany/rosewood neck and an ebony fretboard.

For those of you who like to geek out on this stuff, A.R.E. Technology is achieved through precise control of temperature, humidity, and atmospheric pressure, which allows the molecular properties of the wood to be manipulated.

For those of you who may be shopping different models I should note that not all have the A.R.E. Technology,

so you'll want to try these out and compare the sounds.

Sourcing the sound from an under-bridge pickup, the TA Series incorporates a very unique little actuator that lives inside the body and is attached to the back of the guitar between the bracing, using TransAcoustic Technology. When you play the actuator vibrates, which not only gives you the reverb and or chorus effect from the sound hole, but from the entire body of the guitar. Remember at this point the guitar is not plugged in and the chorus and reverb sound great.

There are three easy-to-access controls that let you adjust the amount of each effect. The Reverb Control (Room/Hall), the Chorus Control, and the third knob is the TA Switch and Line Out Volume Control. Pressing the TA Switch

Yamaha's TransAcoustic Series

BY JOHN CHEVALIER



for more than 0.3 seconds activates the TA function and also functions as the volume control when the guitar is plugged in.

Yes, the TransAcoustic Technology is cool, but the guitar is very comfortable to play and has a very warm and rich sound even without the effects engaged.

THE ACTUAL TEST DRIVE

I played this guitar a lot, but for the review I used four different areas; My Studio, both plugged in and not, my living room, my back deck and, since I was in search of zero acoustics, I drove out in the middle of a 35 acre field

which is behind my house.

I started on my back deck and living room. I'm pretty critical of acoustic guitars and often find myself disappointed when playing one for the first time. This was not the case as I just couldn't put this guitar down. I was every enamored with the sound both raw and with the effects on. The effects sound very natural and even better in person than the samples on Yamaha's website.

One thing I noticed was that I could control the intensity of the effects with the knobs, but also by holding the guitar against my body. Hold the guitar away from your body gives

you the full effect from the sound hole and the resonating back of the guitar. Hold it against your body and the sound just resonated from the sound hole and top of the guitar, which deadens the effect a bit. Playing around with both the knobs and body pressure gave me an interesting array of sounds.

Plugged in, the guitar sounds great and works just as you would expect. Both the guitar and the effects are very natural. I would say that, unless you are traveling with no pedal board for your acoustic, I find using pedals for effects when you are plugged in much easier to use. But don't misunderstand that statement. Although it sounds great both ways, the unique strength of this guitar is definitely in its ability to add effects not plugged in.

Finally, out to the field. Why? Because I could. And it was great fun being out in the middle of nature hearing the guitar (reverb and chorus) with zero acoustics. It was a great experience and capped off the review with proof that the TransAcoustic is very unique.

WRAP UP

We are in a strange place right now. Many worship leaders are leading from home, streaming, or recording the music portion of their services, with limited technology, and in this set-up the Yamaha TransAcoustic Guitar Series can definitely add to the worship and music experience. Of course, if you're in a large church with all the tech you need, that's great, but if not, I'd really suggest taking a look at this instrument. 🎸

John has been involved in multimedia communication for over 20 years. He is an Apple Certified Trainer and a full time Digital Video Instructor in Sonoma County, California. He also travels extensively presenting at workshops and seminars, focusing on Team Building and Leadership Development to improve organizational performance.
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JOHN'S REPORT

FLEXIBILITY



STABILITY



EASE OF USE



RELIABILITY



OVERALL VALUE



PRODUCT SHOWCASE



1/ Elation Lighting

PROTEUS LUCIUS

<http://elationlighting.com>

2/ Lectrosonics

DCR 822 Dual Channel Portable

Digital Receiver

www.lectrosonics.com

3/ LAWO

theWALL ver. 4.4

<http://lawa.com>

4/ A.C. Lighting Inc.

Follow-Me TWO and SIX

www.aclighting.com

5/ Rupert Neve Designs

MBC Dual Path A-D Converter
and Limiter.

<https://rupertneve.com>

6/ Optoma

QUADZilla FHDQ163 Direct View
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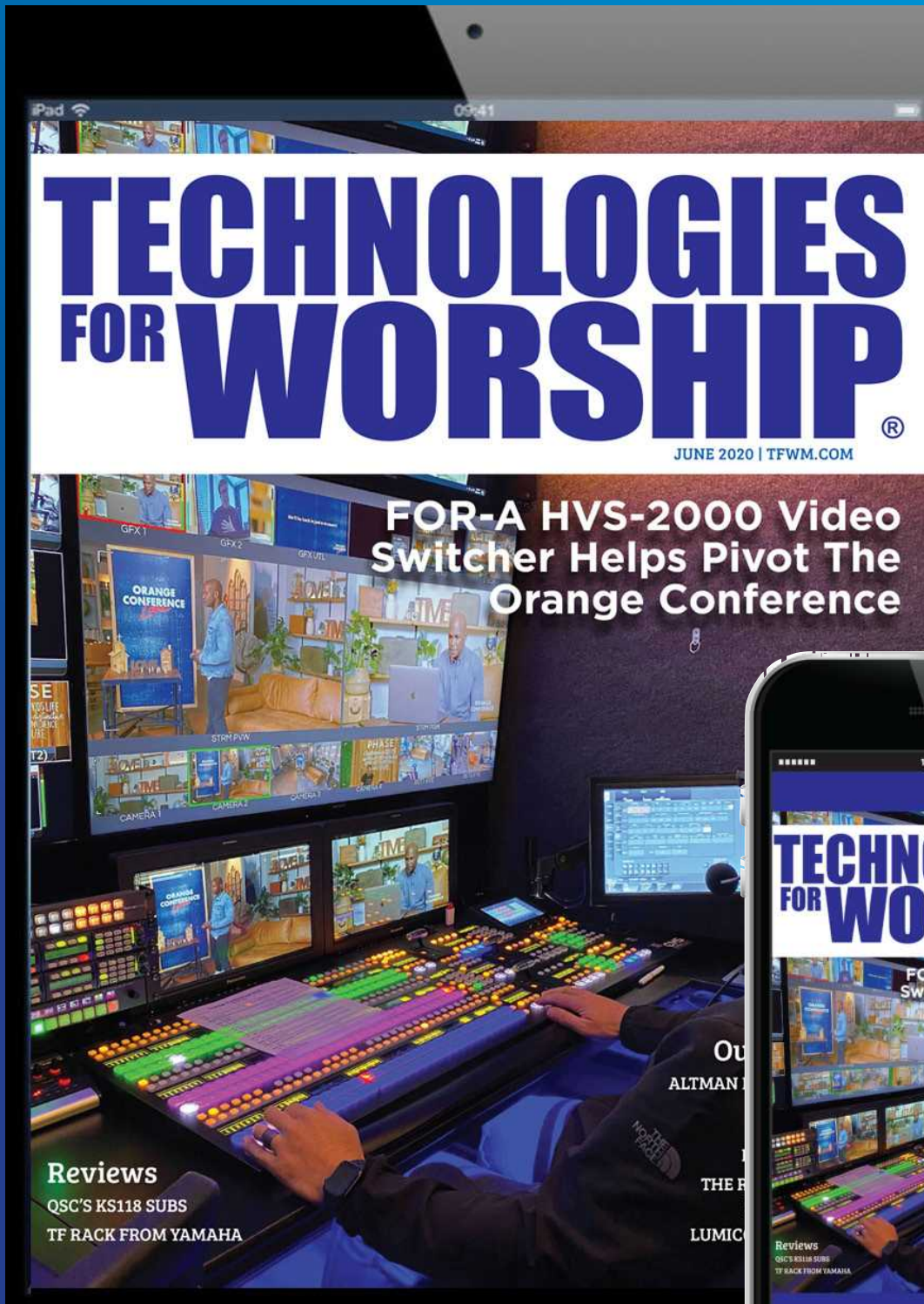
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