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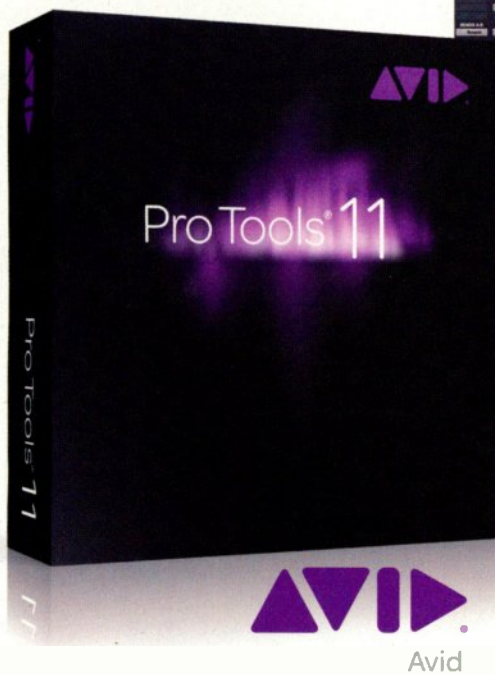
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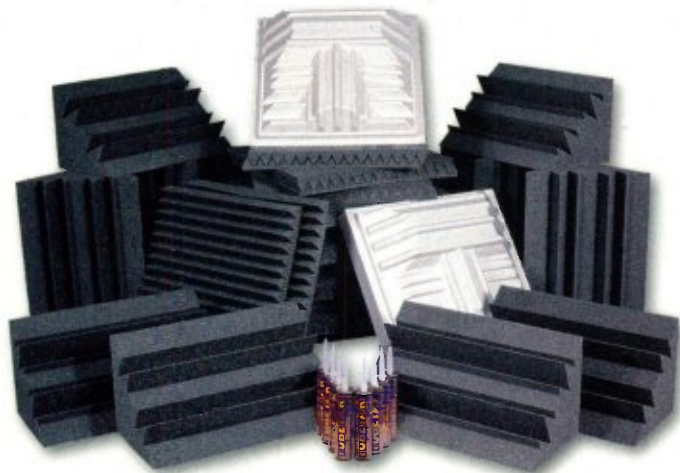
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**On the Cover:** Jason Aldean and band at Sanford Stadium, University of Georgia, in April 2013, for 68,000 fans. **Photo:** Chris/Todd Owyong.

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# From the Editor

# MIX

## CUTTING-EDGE LIVE

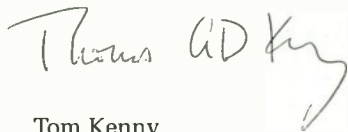
**T**here is a whole lotta action going on in the “live event space,” as marketers are fond of calling it, I presume because in three simple words it covers a wide yet intermingled number of markets. To some it means corporate production, to others it’s houses of worship. There are courtrooms, boardrooms and classrooms, and there are Metreon shopping malls and outdoor plazas. Some work in stadiums and arenas and sheds, while others find their livelihood on a cruise ship or in the hotel and leisure industry. Technology development in the “live event space” is driven by facility designers, contractors, installers and system integrators. Thirty years ago, when the audio contribution consisted of ceiling speakers and automated mixers, it sure didn’t seem very sexy. Today, it’s where some of the most cutting-edge technologies are being created, and it’s where the jobs are.

For many *Mix* readers, live event audio begins and ends with club and tour sound, or any public area where music is playing and you can stop, sit/stand and listen. That’s all part of the live event space, and there have been some amazing technology leaps in concert sound recently. Have you been out to hear music lately? Yes, the amps and speakers have improved dramatically, even in the past five years. And the level of control and processing at FOH seems nearly unlimited. But behind the scenes, the leaps in network control, interoperability and system performance have been equally impressive. And those technologies are going to advance rapidly in the coming years because they are tied into the larger live event space.

That rapid pace of change was in evidence at InfoComm 2013, just a few weeks ago in Orlando. It doesn’t seem that long ago that the aisles at a typical contract/install show were populated by smoke and confetti machines, tabletop displays of test gear and P.A.s in the parking lot. Today there are more aisles, and they’re teeming with 4k displays, streaming images, and compact control packages for audio, video, lighting and any type of graphic or media you could imagine. And on the audio side manufacturers are talking Dante and AVB integration while they show new mics and speakers and consoles.

Why the surge in technology development and subsequent rise in quality? It could be driven by “demand,” meaning people want to get out of their homes, and they want to be wowed when they do. Or it could be driven by “supply,” in that production and audio/visual technologies are finally reaping the benefits of the crazy technological leaps in the computer industry. It doesn’t matter. What matters is that the quality of our live entertainment experience just keeps getting better. The world may indeed be too noisy of a place, and we may be bombarded hourly by way too many images. But you have to admit, the quality has sure improved.

Creation, Connection, Control and Display. These are the fundamental elements of the live event space. The good news for *Mix* readers is that there is audio involved at nearly every point of the process. And that means jobs.



Tom Kenny  
Editor

P.S. If you are within 1,000 miles of a stop on this summer’s Paul McCartney tour, go! Do what you have to, but go! I was one of the lucky 80,000 at Bonnaroo, and it’s as good as anything I’ve seen in my 50 years. I’m not exaggerating. The performance, the pacing, the energy, the songs! And it sounded fantastic, mixed by Paul (Pab) Boothroyd. Go!

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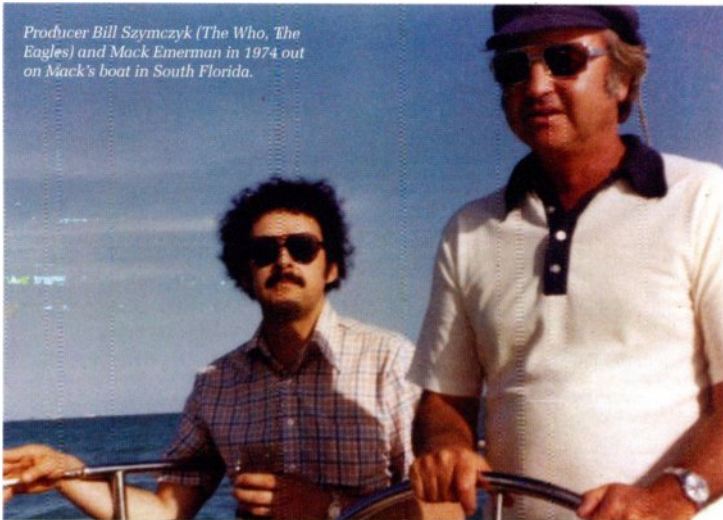
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## Mack Emerman, 1923-2013



Producer Bill Szymczyk (*The Who*, *The Eagles*) and Mack Emerman in 1974 out on Mack's boat in South Florida.

The recording industry lost a true pioneer on May 17 with the passing of Criteria Studios founder Mack Emerman at the age of 89. Emerman not only built a successful studio in a time and place where independent studios did not yet exist, he also continued to expand and improve his facility over decades, creating the launching pad for countless engineering careers and artistic triumphs.

Emerman, a jazz trumpet player, was continually inspired by the energy of live performance. It was his lifelong goal to capture inspired music beautifully and accurately.

Moving to Miami after his college days at Duke, "He put together a hodgepodge of equipment and dragged it around in a VW microbus from venue to venue," says current Criteria manager and longtime employee Trevor Fletcher. "His passion had overtaken his house, where he set up microphones and recorded—trying to do what people are doing now, 60 years later."

Emerman hand-built the first incarnation of Criteria in 1959, when the business of studio design was still in its infancy. "The first studio was a one-room building, and in every direction, you could see nothing but pine trees," says Fletcher.

Criteria received its first Gold record in 1965, for James Brown's iconic "I Got You (I Feel Good)." The studio thrived and grew from Emerman's constant curiosity

and expertise with new techniques and technology. He found a kindred spirit in MCI founder Jeep Harned (1930-2003), who worked closely with Emerman and used Criteria as a proving ground for new equipment.

"The technology then was all about trial and error," Fletcher observes. "Jeep was an electronics genius, and between Mack, Criteria and MCI, they were trying to facilitate everybody's desire to record music better and have it sound better faster."

"Mack was a gear freak. Sometimes we'd change speakers in the control room three or four times in a week," recalls former staff engineer Chuck Kirkpatrick. "We'd get these 200-pound things up in the soffits, and he'd say, 'Put the other ones back.' But it was such a family vibe. I have great memories of late nights with Mack and Jeep in the shop, taking things apart, putting them back together, analyzing, fixing, chasing ground loops and sharing stories."

Kirkpatrick was on staff during Emerman's long, fruitful association with producer/engineer/label executive Tom Dowd and Atlantic Records. Dowd's arrival brought Aretha Franklin, Derek & the Dominos, the Allman Brothers and others to the studio. Other massive hits included the Bee Gees' songs on the *Saturday Night Fever* film soundtrack (1977).

"I started at Criteria as Mack's assistant; we all did," Kirkpatrick says. "But as soon as we were ready to leave the nest and do sessions on our own, he let us. I got a Gold record for Aretha's 'Don't Play That Song,' and one for Brook Benton's 'Rainy Night in Georgia.' But Mack had his favorites. He always did any big band sessions on his own. Those were his babies, and if any of us seniors weren't doing anything, we would still assist him.

"I probably drove him crazy," Kirkpatrick continues. "I was taking off Fridays to play with my band and coming in late on Mondays, but he was so forgiving. And he was so generous with studio down time. We were able to come and experiment with our own music."

"Mack allowed me to work at Criteria freelance, which was very nice of him," says engineer/producer Eric Schilling (David Bowie, Gloria Estefan, Elton John, Shakira, etc.). "I still work there today, and there wouldn't have been a Criteria without Mack. I'm serious when I say that everybody in the South Florida recording industry owes their livelihood to Mack."

"The rocket ship he launched achieved great heights; he just couldn't ride it forever," says Fletcher, "but Mack's passion for music was the driving force. We'll all miss him."

—Barbara Schultz



From left: Mack Emerman, James Brown and Sid Nathan at the presentation of the Gold record award for Criteria's first big record: James Brown's "I Feel Good"



## RSPE Launches Rack Revolution

The recent wave of 500 Series modules is good for music production, but how is a consumer expected to keep up? Researching them—and how each might fit a particular need without breaking the bank—can take days, weeks or months. RSPE Audio, a retailer with 22 years in Hollywood, has launched a platform that will eventually provide key features of every 500 Series module made. With the Rack Revolution system builder,



you can configure, save, and share your 500 Series dream rack in 4-, 6-, 10-, and 11-space setups.

The Revolution part is literal. The 500 Series modules are divided into separate categories (preamp, compressor, EQ, etc.) and hover in a box that rotates the images in a near-spherical manner as you mouse over them. You slow down the carousel by moving your mouse closer to the center, and then single-click on a 500 Series module image. A brief description appears. Double click the image to plug it into the virtual rack below the carousel; drag it away if you change your mind, and the running price of your custom configuration will automatically update. Once you've built your virtual rack, save it, Pin It, share it on Facebook and Twitter.

Visit [www.rsperackrevolution.com](http://www.rsperackrevolution.com).

## SPARS Sound Bite

### Getting Out from Behind the Glass

By Mike Rivera



Every newly trained audio engineer has a vision of what success in the music industry looks like. And while most hope their futures will include multiple Grammys and regular gigs working with high-profile acts, the reality is it is not as easy as it

once was to make it, or to stay on top. So rather than clinging to the notion that studio audio is the only way to go, many, including myself, have gotten out from beyond the glass and pursued opportunities in Live Production.

Whether it's Broadcast, Entertainment, Sports, HOW or, yes, even Corporate Audio Visual, there are many, many entries into live sound. But before you jump, there are a few tools you should have in your kit. First, get familiar with the use of Real Time Analyzers if you aren't already. Aside from a good pair of headphones, it is the one piece of gear I carry with me at all times. Also, get as much time and training as you can on digital consoles. Many manufacturers offer free courses to help you get familiar with their equipment, and conventions such as the recent InfoComm offer training courses and certifications.

Finally, don't forget what you already know, and always leverage your existing knowledge. For example, the basics such as signal flow, mic technique and understanding signal processing will help you tremendously in troubleshooting and operating more complex systems, while the work ethic, attention to detail and social skills gained during long hours in the studio will enable you to work with even the most demanding clients.

There are many opportunities in live production, and even more room to grow than you will find in the studio alone. System tech, FOH engineer, crew chief, tour manager—whatever the gig, every day brings a new challenge in a new environment, and the more you can learn about every aspect of live production, the more valuable you will become. Embrace the change and welcome the new opportunities and experiences.

Mike Rivera is president of Global Media Production Inc.



### Correction: Yamaha HS8

In our June issue roundup of 8-inch to 10-inch studio monitors ("The New 'Big' Near-Fields"), we inadvertently omitted Yamaha's 8-inch HS8 powered studio monitor. *Mix* regrets the error. HS Series monitors come equipped with newly developed transducers featuring an advanced magnetic field design that regulates the flow of magnetic response to provide natural, seamless sonic transitions. Each component's materials have been optimized to significantly improve the accuracy of signal reproduction throughout the audio spectrum. All HS Series full-range models are 2-way bass-reflex bi-amplified and feature a new high-resolution 1-inch dome tweeter designed for extended high-frequency response with very low distortion up to 30 kHz. Also equipped with a newly designed, high

-power woofer, HS Series monitors deliver clearly defined bass even at high output levels. Amplifier units are matched to each model's dedicated transducer, delivering accurate frequency response across a wider range of bandwidth. [www.yamaha.com](http://www.yamaha.com).

## TEC Awards Call for Entries



Entries are now being accepted for the 29th Annual TEC Awards, the music and sound industry's most prestigious event celebrating excellence in technical and creative achievement. Companies wishing to enter products or projects introduced during the eligibility year of September 1, 2012, through August 31, 2013, can find entry forms online at [tecawards.org/CFE2013](http://tecawards.org/CFE2013). Entries will be accepted through July 19, 2013.

The TEC Awards ceremony will be held in January during the 2014 NAMM Show in Anaheim, Calif., and this upcoming ceremony marks the first year in which the NAMM Foundation will present the annual awards. The TEC Awards were founded in 1985, and the ceremony has been held at the NAMM Show since 2011, with NAMM as the hosting sponsor.

The TEC Foundation for Excellence in Audio is now part of the NAMM Foundation, strengthening the important work of both non-profit organizations and the NAMM Show. The NAMM Foundation's global efforts are supported through the industry's participation in the NAMM Show and by NAMM Members around the world.





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# MUSIC



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## DUMPSTAPHUNK

Looking Back, Looking Ahead

By Blair Jackson

**I**t's been 10 years since the New Orleans good-time party band Dumpstaphunk—spearheaded by keyboardist/singer Ivan Neville and his guitar-playing cousin Ian Neville (sons of Aaron and Art Neville)—made their debut at the Crescent City's famed Jazz & Heritage Festival. But in some ways, it feels like they're only hitting their stride now, with the late-July release of just their second full album, *Dirty Word*. With nods to soul/funk pioneers Sly & the Family Stone, and various other '60s and '70s funkateers (including The Meters, headed by Art Neville), *Dirty Word* offers a remarkably

fresh update on a sometimes neglected genre.

All five members of Dumpstaphunk are monster musicians—besides the Nevilles, the lineup boasts two great bassists (who also play guitar and sing), Tony Hall and Nick Daniels, and the explosive drummer/singer Nikki Glaspie. On the new album, this molten core band is augmented on various tracks by such local friends as the Grooveline Horns, Trombone Shorty, Art Neville, the Rebirth Brass Band and Ani DiFranco, and from L.A., Flea of the Red Hot Chili Peppers, a band that knows a bit about funk. All the songs are credited to

the entire band except two well-chosen '70s covers—"Water," by Graham Central Station and "If I'm in Luck" by Betty Davis.

Most of the tracking for *Dirty Word* took place at Fudge Recording Studio in New Orleans, originally the private domain of the band Better Than Ezra, but more recently a commercial facility owned by Ezra bassist Tom Drummond, engineer/producer Jack Miele and guitarist Shane Theriot. Miele and former Fudge staffer (now independent) Jacques deLatour engineered the sessions, which were produced by Dumpstaphunk.





"We didn't have an allotted time to make the record," Ivan Neville says, "so we went in for a few days here and there when we were off the road for about a year. We had a few ideas ready, some stuff we wrote on the fly in the studio, and there were also songs that needed developing. It's a cool vibe at Fudge. We cut live with the full band, but did overdubs and the vocals later."

According to engineer Miele, Fudge's large, open recording space was originally modeled after Abbey Road's "B" studio, complete with elevated control room. At the time *Dirty Word* was recorded, the studio was equipped with a Gamble console (since replaced by a modded Amek Matchless) and cut to Pro Tools using mostly vintage mics and analog signal processing.

"They were all set up in the main room," Miele says, "but only Nikki's drums were fully miked in that room—we had Royer 121s for room mics, Coles 4038s for overheads, a Pearlman TM 1 as a kit mic maybe three or four feet in front, and then, on the individual drums, a [beyerdynamic] M88 on snare, [Sennheiser] 421s on the toms and a [Audix] D6 on the kick. Ivan's B-3 [and clavinet] was in the main room, but the Leslie was in the kitchen/foyer. We had Ian's amp upstairs in an iso room with a mic [an Echolette ES14], and

Nick's and Tony's bass amps in what we call the bass closet, with an [Electro-Voice] RE20 on one, a [Neumann] TLM 103 on the other] and also DI'd."

Vocal mics for the four singers at Fudge included a Neumann TLM 193, Sony C-37A, Neumann U 87, Shure SM7, RCA BK-5A and "for some of the backups, they'd be in a circle with their own mics and also an RCA 77 in omni in the middle," Miele says. Ivan comments, "We think it's a special thing we've got going with the vocals, and we try to incorporate the different voices as much as we can."

Additional recording and a number of instrumental and vocal overdubs were done at The Music Shed in New Orleans, with Kyle Lamy engineering in Studio A on a Trident 80B board. For the vocals he cut, Lamy used a combination of Neumann 87s and A-T 4050s into Neve 1079 EQ and ADL 1000 compression. "Amazing singers!" Lamy says. "They're all so different and versatile in their timbres." He also gives high marks to Ian Neville, who "on a whim can pull out seven guitar parts from his head and throw 'em down."

Mike Napolitano mixed nine of the 11 tracks on *Dirty Word* at his home studio in New Orleans, in consultation with Ian and Ivan. "I have a [Roll Music Systems] Folcrom external summer, which I use not just for the analog summing," Napolitano says, "but for things that need to be gained back up. By picking which mic pre you use to capture that gain, you can endow it with some personality."

On the challenge of mixing multiple basses, he says, "It's not as hard as you might think. Those guys really know what they're doing. They find ways to make it work between the two of them before it even gets recorded. Their tones and the way they play accommodate each other, so it fits."

As fate would have it, the song "If I'm in Luck" was the last high-profile mix done by the late engineer Andy Johns, along with Bruce Witken, at Witken's L.A. studio. That track, not surprisingly, has a strong rock edge to it. "By choosing Andy to do it, you were going to get that," Witken says. "When the first mixes got sent back, they just had a few tweaks and that was it. Andy was Andy—he liked it loud."

"We were honored to have Andy work on the record," Ivan adds. "He and Bruce did a great job on that track." ■

## MAVIS STAPLES' 'ONE TRUE VINE'

**I**'s been three years since Wilco frontman Jeff Tweedy first produced Mavis Staples (*You Are Not Alone*, Anti), and the artists have forged a close friendship that yields another masterpiece this month: the understated gospel *One True Vine*. Again tracked at Wilco's studio, The Loft, by engineer Tom Schick, Staples' voice stars, of course, in Tweedy's rich guitar and rhythm-based arrangements.



"This record was originally supposed to be just Jeff and Mavis—something simple and stripped down," Schick explains. "But Jeff's son Spencer happened to be around when we started doing demos, and Jeff would say, 'Want to try a percussion idea? Or a drum idea?' It just blossomed. When Mavis heard the chemistry between father and son, she said, 'That's what I want.'"

With few exceptions, the Tweedys played all of the instruments on *Vine*. "They might track guitar and drums live, right next to each other, or in the control room area with Spencer on drums and Jeff on the couch, three feet away, no headphones. They'd build on those tracks, and then Mavis would put down her vocals. It built very organically," Schick says.

Schick recorded to Pro Tools and says he set up several "floater" mics that he could use to capture the Tweedys wherever they landed: "I'd take a Royer from overhead if something needed a ribbon. I was using a 441 on snare, and I would move that mic around or take the 67 we were using as a room mic," he says.

Staples' vocal mic remained the same SM7 that Schick used in 2010. "We had such a good experience last time, and she was happy with the sound of her voice in her headphones. I wanted to keep that the same for her," Schick says. "Most of her vocals were just one take. Every time she sings, it's a keeper."

—Barbara Schultz

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## EMILY'S ARMY IN JINGLETOWN

The young punks in Emily's Army put as much joy as attitude into their fresh, fast original songs, and their sophomore record, *Lost at Seventeen*, is a real pleasure. The quartet—guitarist/singer Cole Becker, bassist/vocals Max Becker, guitarist Travis Neumann and drummer Joey Armstrong—tracked *Seventeen*, in Jingtowntown Studios (Oakland, Calif., [jtreording.com](http://jtreording.com)) with Green Day engineer Chris Dugan and producer (and the drummer's dad) Billie Joe Armstrong.

"We worked in Jingtowntown Studio A, which was refurbished prior to the Green Day records (*Uno*, *Dos* and *Tre*), and I think they were the second band that got to use the studio." Improvements to the A room included installation of a restored Neve 8068 board as well as new acoustical treatments in the live room, where Dugan had the band set up in a similar configuration to the way they perform onstage.

"A good chunk of the basics were done live with the guys all playing," he says. "We used a lot of the room, so we positioned amps in the room along with drums so everything was coming through the room mics."

Dugan placed two Wunder Audio M50s and a Telefunken U47 in a Decca Tree, plus two Neumann TLM 103s as high overheads. "Those gave us our audience perspective, if you will," he says.

Dugan blended an SM57 and AKG 414 on Travis Neumann's amp, and an AEA R92 ribbon on Cole Becker, who plays a Telecaster into a Divided By 13 amp. "When these guys play hard and fast, their guitar tones can be percussive and dynamic. Cole has a cleaner sound, so that big ribbon mic reacted really well."—*Barbara Schultz*

## VOCALS FOR 'FOSSILS'

Tucker Martine produced and engineered Crooked Still member Aoife O'Donovan's first solo album, *Fossils* (Yeproc), in his studio, Flora (Portland, Ore., [florarecording.com](http://florarecording.com)).

aoife o'donovan

fossils

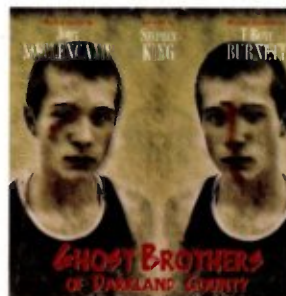


Most of the songs had been performed live onstage with her band, but Aoife was quick to say she wasn't married to anything about the arrangements or presentation," Martine says. "In many cases, we used the band demos as a starting point. In several cases we imploded the demo approach altogether. I'm not the type of producer that will actually feed

the part to somebody, but I usually have a pretty good idea of what's needed where and when to dig deeper."

*Fossils* is an intimate record with delicate washes of guitars and vocal harmonies highlighting O'Donovan's strong, emotional songs. Martine captured band sessions to his 2-inch, 24-track Studer A827 machine, then transferred to Pro Tools for overdubs and editing. "I tried probably seven or eight mics on her voice before I settled on the Shure SM7," he says. I thought for sure the 49, the 67 or the 47 would win out, but they all accentuated some anomaly in her voice I didn't think would sit well in the mix. Aoife's voice seems to have a really unique built-in EQ curve—kind of a smiley-face curve. The SM7 went into a Neve 1084 into an 1176. We kept many live performances for the feeling over the technical perfection of the performance; as a result, there were a number of songs where I used a Pultec EQ for some air around 16 or 12k and used the GML MDW EQ plug in to notch out anything too murky."—*Barbara Schultz*

## VARIOUS, 'GHOST BROTHERS OF DARKLAND COUNTY'



You don't necessarily need any backstory to appreciate the eloquent, powerful soundtrack to John Mellencamp and Stephen King's musical *Ghost Brothers of Darkland County* (Concord Music Group). These are gorgeous, spooky, swampy tracks with deep roots in electric blues, beautifully matched to the stellar cast of singers assembled by producer/musical director T Bone Burnett. Vocalists include

Mellencamp, Kris Kristofferson, Sheryl Crow, Ryan Bingham, Rosanne Cash, Neko Case, Taj Mahal, Elvis Costello (as the devil!), and real-life brothers Phil and Dave Alvin as feuding siblings embroiled in a bitter struggle.

This project came out June 4 in several forms that may include the music-only version; a words-and-music version with segments of dialog performed by actors Will Dailey, Matthew McConaughey, Samantha Mathis and Meg Ryan; a making-of mini documentary DVD; an iBooks digital interactive edition, plus (or minus) the libretto in printed book form. This is an ambitious project that—whatever size package you purchase—reveals new dimensions of Mellencamp's talents as a singer/songwriter. His work has reached new emotional and musical heights since he began collaborating with Burnett. Read the book, watch the DVD, and definitely listen to the music.

Producer: T Bone Burnett. Engineer: Jason Wormer. Additional recording: Mike Piersante, Vanessa Parr, Ed Cherney, Matt Andrews. Dialogue and special effects editing: Paul Mahern, Neil Warner. Mixing: Jason Wormer. Studios: The Village, Electro Magnetic Studios (both in L.A.). "Truth" engineered by Paul Mahern, at Belmont Mall (Nashville) and mixed by Mike Piersante at The Village. Mastering: Gavin Lurssen and Reuben Cohen/Lurssen Mastering (Hollywood).—*Barbara Schultz*



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# Classic Tracks

By Blair Jackson



## "TOMORROW PEOPLE"

### Ziggy Marley & the Melody Makers

**I**n the wake of Bob Marley's death from cancer at age 36 in May 1981, there was no obvious charismatic and unifying figure in the reggae world to build on Marley's momentum, no acts that crossed over onto U.S. rock radio the way he had on occasion. That is, until Ziggy Marley came along.

Talk about big shoes to fill. David "Ziggy" Marley was the second of nine children Bob fathered with seven different women; the middle of three with his wife Rita. Ziggy was only 12 when Bob died, but he'd been around music since birth, so it was no surprise when he showed an interest in following his father's lead. In 1979, he recorded a song with his dad, two older sisters—Cedella and Sharon—and younger brother Stephen (along with some of Bob's musicians), and the four siblings were soon known as the Melody Makers. Ziggy and Stephen played at Bob Marley's state funeral, and then formally launched their sibling group, the Melody Makers, releasing a couple of singles.

Even as a young teenager, Ziggy bore a strong resemblance to his

father, and their vocal similarities became more pronounced as he matured. In the mid-'80s, the group, backed by top Jamaican players, released a couple of albums that were distributed by EMI: The first was a disappointingly lightweight reggae/pop affair, *Play the Game Right*; the second (and first by "Ziggy Marley & the Melody Makers"), *Hey World*, was much better and showed that Ziggy and Stephen were both growing as writers and singers. Neither album did much commercially, but Nancy Jeffries, A&R rep for fledgling Virgin Records, saw something special in the young group and signed them to their first major deal in 1987.

Alex Sadkin, who had engineered a couple of Bob Marley's later albums and was a fixture at Compass Point Studios in the Bahamas (founded in 1977 by Island Records' Chris Blackwell, Marley's producer), was slated to produce the first ZM/MM album at Compass Point, but he was killed in an automobile accident in July '87, and it was Jeffries who suggested that the husband and wife team of Chris Frantz and Tina Weymouth—of Talking Heads and Tom Tom Club fame—take the production reins. They were part-time Compass Point residents, as well, had worked with Sadkin on a couple of Talking Heads projects, and clearly knew a thing or two about reggae and "world music" in general.

"We had never produced a record outside of the Talking Heads/Tom Tom Club axis," Weymouth told *Musician* magazine in 1988, "so it was quite a gamble for us and for Ziggy.

"When we first met Ziggy in New York," she added, "I grilled him a little bit. I wanted to know whether he was the spoiled brat of a famous musician, or whether he had something to say for himself." For his part, Ziggy, then 18, only knew his prospective producers through one song—Talking Heads' "Burning Down the House."

Even though Weymouth and Franz had the strong Compass Point connection, they decided to bring Ziggy and the group to New York to record their first album for Virgin, *Conscious Party*, at Sigma Sound, which had been Talking Heads' studio-of-choice for a while. In *Musician*, Weymouth noted, "Chris [Frantz] pointed out that most reggae albums are recorded in these really deadened Jamaican studio rooms... We had gone down to see them at [Reggae] Sunsplash [Festival], and they were so exciting live, we said, 'Why don't we use the ambient rock 'n' roll recording technique, which [engineer] Glenn Rosenstein is so superb at?"

Rosenstein, whose career up to that point had included engineering and mixing work with the likes of U2, Madonna, Talking Heads, Ramones and Full Force, says, "There was this great collective of musicians, engineers and assistants that revolved around that studio. And Talking Heads kept Sigma booked—they might have two or three rooms going at once with different projects. I worked on some of the Talking Heads records and individually with both Tom Tom Club and David By-



rne. I also worked with Jerry Harrison on his recordings, though not quite as much. But there was this amazingly talented group of people who came in and out of that studio scene, contributing to those recordings in different ways, and I was privileged to be among them.”

Sigma’s NYC operation—owner Joe Tarsia’s original Sigma Sound was still operating in Philadelphia—opened in 1977 on the tenth floor of the building that still houses The Ed Sullivan Theater (current home The Late Show with David Letterman), and a little later put in a mix room on the floor below. Rosenstein recorded the bulk of *Conscious Party* live in Sigma NY’s Studio 5 on an SSL 4000 E Series board and 3M 79 multitrack, then mixed it downstairs in Studio 8 on an SSL 6000 E, to stereo half-inch on an Ampex ATR-100.

“It was in an older building, standard New York City office architecture,” Rosenstein says. “Nothing was done structurally to the space, other than acoustic treatment and studio walls. We were stuck with the regulation New York City office space ceiling height. Initially that would have been thought of as an issue for any record, but we found ways to work around it.

“This was a full band with a lot of musicians and leakage was something we could not even remotely address,” he continues. “We didn’t have much in the way of isolation, but rather than fight it, that actually became an asset for us. We were trying to get some room sound out of the kit, and Sigma had these large stand-alone RPG Diffusor boxes that we floated on the floor. I took those and placed them about 20 to 25 feet

away from the drums and faced a pair of Shure 81s toward the diffusors, to get a little room sound, and it actually worked.

“There was baffling for the guitar amps, and the bass amp—an Ampeg B-15—was baffled, too. Unfortunately, the bassist [Zelee Gessesse] was using a Steinberg, which was notorious for having the least amount of low end—no resonance whatsoever—so in order to get what I thought was some semblance of low end, I had to strap together two Pultec EQP-1As; one was not enough.”

On the album (and live for a few years), Marley was backed primarily by a band called Dallol, comprising young musicians who had emigrated from politically unstable Ethiopia to Chicago during the late ’70s, and subsequently formed a group to play their own distinctive brand of reggae. Their eponymous debut album for the Shanachie label had been released in 1985, and they first toured with Marley in 1987. Augmenting the Dallol players (drums, bass, rhythm guitar, percussion, two keyboardists) were a pair of Jamaican reggae stalwarts: guitarist Earl “Chinna” Smith and keyboardist Franklyn “Bubbler” Wahl. Ziggy also played guitar on several songs (though not on “Tomorrow People”), while his three siblings contributed backing vocals, along with one lead from “Steve,” as he’s called on the record). Guests included guitarist Keith Richards, saxophonist Lenny Pickett and, on two songs, including “Tomorrow People,” Jerry Harrison on B-3.

“If I recall correctly,” Rosenstein says, “Earl ‘Chinna’ Smith was using a custom modified Stratocaster as his main guitar, and for an amp



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he had one of Sigma's—a 1966 blackface Fender Twin. One of the guitarists from Dallol was using a little combo Mesa Boogie amp. My mics of choice for the amps were probably [Shure] 57s and [Neumann] 87s, most likely a combination of both, very tight-miked and blanketed, because we're talking about eight players in the room, one of them a percussionist, so real estate was at a minimum and leakage was at a maximum.

"But the thing that was remarkable about those sessions, what made us feel as though we really had something, was that these guys played together so well and they caught the vibe of every song so quickly. They were not just good musicians, they were phenomenal musicians."

Rosenstein recalls that Ruphael Woldemariam's drums (his name is misspelled in the album credits) were likely captured with a Neumann FET 47 inside the kick and a Beyer M88 outside; for snare, a 57 on top and an AKG 451 underneath; a 451 on the hi-hat; U87s on all three toms; and 87s as overheads, as well. Electronic keys would have been taken direct: "Franklyn Waul was quite expert with a Wave PPG, and I think he might have had a [Yamaha] DX7, too," the engineer says.

All the tracks featured the full band on complete takes, with Ziggy singing scratch vocals in an iso booth. "For a typical song, like 'Tomorrow People,' we might have run it down three or four times and I don't recall that we cut between takes. Most likely that was an early take." Keeper lead vocals were cut later with an AKG C-12 tube. "Over the course of three records I made with Ziggy, comping was kept to a minimum, vibe to a maximum," Rosenstein says. "He really knew his voice and how to use it, and he was very effective at nailing vocals quickly."

Reverbs Rosenstein used in the mix included the then-fashionable Lexicon 224 and 224 XL, EMT 250, "and we had a couple of [Lexicon] Delta Ts, which were the precursor to the Primetime. We

also used analog tape delay—we'd dedicate a 2-track, have the assistant engineer run tape, and we'd varispeed the machine to correctly time the delay. A couple of Publisons, some AMS DMXs, a few EMT plates—these were the tools we had back then; a little different than now."

*Conscious Party* was released in the spring of 1988, and right out of the box, the catchy and melodic "Tomorrow People" was embraced by rock radio and a video for the song made it into MTV's rotation (back in the days when they actually featured music videos). The single of the song made it to Number 39 (higher than any Bob Marley single), while the album peaked at Number 23, eventually selling well over a million copies. A second track from the album, "Tumblin' Down," hit Number 1 on Billboard's R&B and Dance charts and Number 5 on Modern Rock Tracks. It also kicked off a particularly fertile period for Ziggy Marley & the Melody Makers. The following year, they recorded another album, *One Bright Day*, with Weymouth, Franz and Rosenstein (who was listed as co-producer), and then in 1991, Rosenstein and Ziggy produced *Jahmekyas*.

Was Rosenstein surprised by the success of *Conscious Party* and "Tomorrow People"?

"Absolutely. I thought Chris and Tina had done a remarkable job capturing the emotion and spirit of the artist, and it was clear to me that we had done something special. But even in the context of a time when there were huge hits—these days the definition of a huge hit is considerably different—I'm not sure anyone could have had that type of expectation for *Conscious Party's* success. Everyone always hopes for a successful project, but that this album would break out of its genre and become MTV fodder? While I know that was the intention of the label—and Virgin was a very well run label—we didn't really expect it. So it was definitely quite cool when it happened." ■



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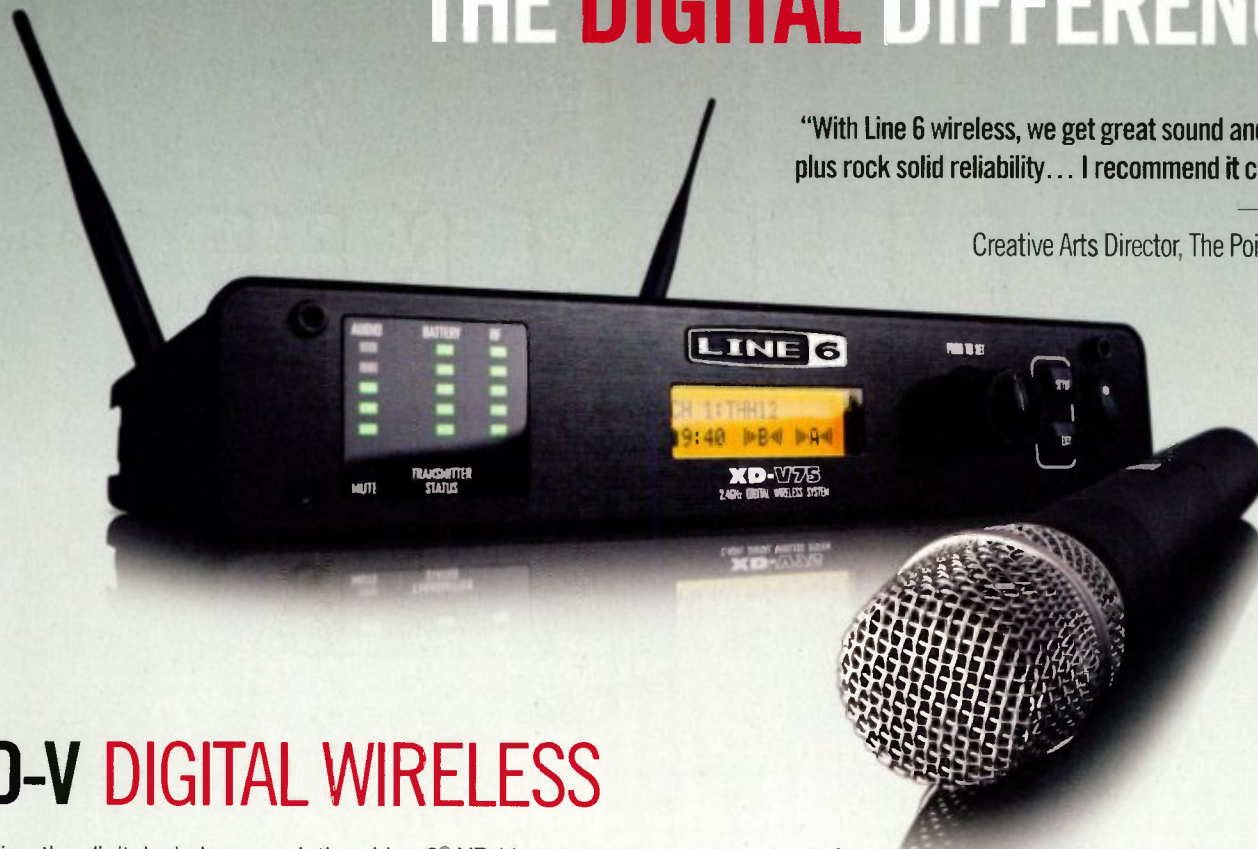


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World Radio History

# 166.XD



# Live



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Juanes (singing lead at front-center) and his 12-piece touring band played to a packed house in mid-May at the Warfield in San Francisco. The band comprises Juanes (vocals, guitar), Waldo Medina (drums), Juan Pablo Daza (guitar), Fernando Tobor (guitar), Emmanuel Briceno (keyboards), Pedro Felipe Navia (bass), Andres Felipe Alzate (percussion), Richard Bravo (percussion), Baquel Borges (backing vocals), Miguel Angel Mejia (backing vocals), Orlando Barreda (trumpet), Jesus Liviano (trombone) and Rafael Sandoval (saxophone).

## JUANES: LIVE AND UNPLUGGED

2013 Tour Features Acoustic Instruments, New Arrangements By Matt Gallagher

**A**fter more than a decade of enjoying both commercial and critical success, Colombian singer/songwriter/musician Juanes continues to enthrall and energize his worldwide fan base while pursuing further evolution as an artist. His 2012 appearance on *MTV Unplugged* in Miami and live album *Tr3s Presents Juanes: MTV Unplugged*, produced by Juan Luis Guerra, took him into new musical territory. As Juanes told the Associated Press, “[*MTV Unplugged*] was a great opportunity to rediscover my songs and also to have all the freedom to do whatever I wanted to do with the songs. Actually, when I write my songs I always use my acoustic guitar. So for me this is kind of going

back to my essence, to my roots, and reconnecting everything.”

The live album won a 2012 Grammy Award as Best Latin Pop Album and a 2012 Latin Grammy Award as Album of the Year. Juanes’ experience with *MTV Unplugged* inspired his 2012-2013 Loud and Unplugged tour of North America and Europe with a 12-piece band featuring a wide variety of instruments. *Mix* attended Juanes’ stop at the Warfield Theater in San Francisco in mid-May.

3G Productions (3glp.com), based in Las Vegas, provided the audio production and equipment rental for the 2013 North American tour. The tour’s veteran audio crew includes monitor tech/crew chief Jonathan Daly, front-of-house tech Manny Perez, system tech Clark Stewart, FOH engineer

Jose Amable Frometa, and monitor engineer Anselmo Rota. “For the U.S. tour we’re carrying full production,” Daly says, which includes DiGiCo SD 10 consoles at both FOH and monitors, a d&b audiotechnik P.A., Dolby Lake Processor, Summit Audio DCL-200 compressor, Radial DI boxes for stringed instruments and keyboards, and mics from Shure, DPA, Sennheiser and Audix.

“Pretty much all of the instrumentation is acoustic,” Daly says, excepting bass and keyboards. “There are no amplifiers onstage, at all. A lot of the songs were retooled to fit the acoustic profile. But it’s still loud! [Laughs.] I mean, not very loud! There are still a lot of dynamics.”

Frometa, whose credits include Marc Anthony, began working with Guerra in the early 1990s, and





Photo: Steve Jennings

Front-of-house engineer José Amable Frometa

it was Guerra's manager who connected Frometa to Juanes as FOH engineer nearly 18 months ago. "I have only toured with this [13-piece band] configuration," Frometa says, "but I can tell you a lot has changed [from Juanes' previous tours]. Before it was all electric guitars; now, it's all acoustics. The drum kit went from nine or 10 pieces to a 3-piece set—a 24-inch kick, snare, and 18-inch floor tom—and horns were added."

Juanes sings into a Shure KSM 9, and Frometa says, "the goal with [Juanes'] vocal is to make it clear but not loud. Juanes himself doesn't like the feeling if his voice is loud in the mix, so I keep it simple. The Summit insert gives me the coloration and compression. I use a short bright reverb and couple of delays with manual tap. Guitars are right behind Juanes' vocal in the mix. They are also slightly panned. I use the thicker preset and a bright room with short decay from the DiGiCo effects library. Each 6-string guitar gets a DiGi-TuBe [circuit that emulates the non-linearities of a tube amplifier] and graphic EQ inserted.

"The preamps on the SD Series are great," Frometa continues. "The boards put out a very clean sound with an outstanding image. I use very little EQ—mostly high- and lowpass filters. DiGiTuBes are a nice feature. I created a fader/mute snapshot for each song. Dynamic EQ and compression are the features that help me the most in keeping up with the coloration changes from the guitars. Macros are another function I use a lot. It's nice to be able to recall



Photo: Steve Jennings

Monitor engineer Anselmo Rota

a window or toggle between settings in one channel with the touch of a button. The 4-page section with 10 assignable LED Macro buttons makes navigating the board a lot faster."

On this tour, Frometa notes, "The mix structure is what's most affected by venue size; some nights the guitars will need an extra push to find the desired balance. In most of these mid-sized to small venues, direct sound becomes a heavy part of the mix, so I use delays on drums and percussion to closely match the P.A. sound. Some nights the stage is just wide enough to accommodate the band, and the P.A. gets stacked right on each side, barely three feet away from [stage-] left and right guitar players, so every acoustic stringed instrument gets a graphic EQ inserted."

For the P.A. system, 3G Productions spec'd a d&b audiotechnik rig comprising 12 V8s and four V12s per side, six J Series subwoofers per side, and eight Q10s for side hangs per side with four Q1s for front fills. "The ease of the rigging and the lightness of the box makes it a super-easy rig to fly," Perez says. "I was blown away by the clarity and volume of the little box. More surprising is that it is a passive box. Whether we have all 16 boxes in an amphitheater or a small arena, or a small theater with just eight or 10 boxes, the SPL and sonic clarity is the same. The rig changes day to day since the venues are all different, but until now the Vs have been nothing but workhorses in terms of adapting to fit each venue."

Rota, who has toured with Juanes previously, also uses the SD 10's onboard feature set exclusively, including multiband compressors and DiGiTuBes, to handle the band's 22 channels of IEMs—16 stereo mixes and eight mono outputs for effects. Daly notes that drummer Waldo Madera and bassist Pedro Felipe Navia use d&b M2 monitor wedges. "We're using eight reverbs," Daly adds. "Everybody has a full-on front-of-house mix, pretty much."

## MASTERS OF MADNESS

**T**his summer, goth-metal icons Marilyn Manson and Alice Cooper joined forces for a tour called Masters of Madness, which hits U.S. sheds and arenas through the end of June. The JBL VTX P.A. provided by Thunder Audio was selected for the tour after Manson's FOH, George Chapman, had the opportunity to use the speakers at a festival.



From left: James Woods, FOH engineer (Alice Cooper); George Chapman, FOH engineer (Marilyn Manson); Bruce Danz, monitor engineer (Marilyn Manson); Jonathan "Pants" Winkler, systems engineer; Adam Schuler, monitor tech; and Steve Sency, audio tech. Not pictured: Paul Bostic, monitor engineer (Alice Cooper).]

"I mixed a show on their system, and it was such a nice-sounding P.A. Nothing was harsh. It was really smooth sounding, even at an outdoor rock 'n' roll festival," Chapman recalls. "I talked to people I knew at Thunder Audio, Paul Owen and Tony Villareal, and they had a VTX rig that they had gotten for Metallica. It was a perfect fit. Alice Cooper's engineer, James Wood, and his production liked it as well.

The VTX system comprises 14 speakers and 9 subs per side, all driven by Crown 12000 amps and dbx drive rack processing. Chapman says one of the rig's greatest appeals is the ability to get that full sound without running at painful volume levels. "You want a big sound for a heavy metal concert like this. The VTX speakers give the impression of it being loud and right in front of you without harsh frequencies."

"The power is exceptional, and there is headroom to spare," Wood says. "The rig is suitable for any style of music, although it is by far one of the best rock rigs out there."

The JBL rig is the only equipment that the co-headliners share on this tour. Wood uses a Midas Pro 6 while Chapman mixes Manson's set on an Avid D-Show in conjunction with Eventide Harmonizers and Avalon 737 mic pre's. "I'm also using the Waves L2 across left and right," Chapman explains. "It's like a finalizing tool, a mastering tool that helps bring the mix right in front of you. The P.A. is great at doing that, but this gives an added edge."—Barbara Schultz

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See an online photo gallery of Juanes at The Warfield in San Francisco. [mixonline.com/072013/](http://mixonline.com/072013/)



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## MIXING THE 'SOUND OF CHANGE'

The Sound of Change benefit concert at London's Twickenham Stadium featured 11 acts, including Beyonce (joined by surprise guest Jay-Z), Ellie Goulding, Florence + The Machine, Jennifer Lopez, John Legend and more. Audio for the four-hour event—which raised funds and awareness for women's health, rights and education—was handled by UK company Britannia Row Productions ([britanniarow.com](http://britanniarow.com)). Six Avid Venue Profile systems were employed for three performance areas, while two additional systems were needed for Lopez's on-site rehearsal.

"I used a Venue for the first time at a one-off show and was so impressed that I went out and bought one," says Rick Camp, Lopez's long-time FOH engineer.

Legend's FOH, David Haines, says he appreciates the Profile's "speed of operation—I can get around it faster than any other console. I just love



Photo: Anthony Gordon

its layout and the ability to get to the plug-ins easily."

The concert, which was also broadcast live worldwide, was organized by the Gucci-founded charity Chime for Change ([chimeforchange.org](http://chimeforchange.org)) along with actress Salma Hayek Pinault and Beyonce, and the Huffington Post reports that the event raised \$4.3 million for organizations such as UNICEF, the Global Fund for Women and Plan International.—Barbara Schultz

## THE KILLERS TOUR WITH REDNET SYSTEM



Systems engineer Philip Reynolds

For the better part of 2013, The Killers—singer/keyboardist Brandon Flowers, guitarist David Keuning, bassist Mark Stoermer, and drummer Ronnie Vannucci—have been on the road in the U.S. and Europe playing arenas, stadiums and theaters in support of their 2012 release, *Battle Born*. The band's systems engineer, Philip Reynolds, has been carrying his own equipment on this tour and decided to keep the audio within the digital domain—A/D conversion takes place at side-stage as soon as the mics plug into

the stagebox—for as long as possible before conversion to analog.

Reynolds uses audio analysis software coupled with a reference mic to match the sound system's response as closely as possible to the output of the front-of-house console, and his Focusrite RedNet 1 8-channel AD/DA converter and RedNet 4 8-channel mic preamp handle all of his inputs and outputs to facilitate that process. He says the analysis software's accuracy helps him to make fine adjustments to the loudspeakers. RedNet 1 routes audio to and from his test system, as well as to the front-of-house console for house-music playback and drones that are used during the show's encore. This material comes from a pair of Mac Mini computers—one primary and one backup—that all connect to the RedNet network using the Dante Virtual Soundcard (DVS) driver. RedNet also handles the press and video feeds, as well as any venue needs, such as the hearing-assist system for the hard of hearing.

"RedNet units have allowed me to design a system to bring a fully digital system on the front end," Reynolds says. "RedNet does everything I want it to do, and the expandability is endless with this setup. I rely on my system 100-percent. The RedNet 4's preamp is flat, and the phase coherence is perfect."

The tour touches down once again in the U.S. on August 2, in St. Paul, Minnesota.

## THE BLUES BROTHERS RIDE AGAIN



Kieron Lafferty (left) and Wayne Catania as Elwood Blues and Joliet Jake, respectively.

The latest incarnation of the long beloved Blues Brothers act is: The Official Blues Brothers Revue, a concert performed by an 8-piece band fronted by Dan Aykroyd and John Belushi look- and sound-alikes. The Re-

vue is produced by Aykroyd and Judith Belushi, wife of the late great originator of the Joliet Jake character.

Bill Girdwood serves as tour manager, music director, and front-of-house engineer for the Revue on the road. He's mixing the Blues Brothers' soul and blues favorites on a Roland M-480 console. In addition, the tour is carrying Roland M-48 personal mixing systems (controlled from the M-480), allowing each musician to control his or her own monitor mix from 40 channels grouped in 16 stereo pairs. As each M-48 can store up to 16 presets, the musicians can save their favorite mix settings for each song.

The M-48 system allows musicians to control the reverb in their monitor mix, as well as EQ and pan of each stereo group. Plus, they can organize their mixing channels the way they like; for example, a vocalist might want all drum mics to be assigned to one channel except for kick.

"These personal mixers are the whole reason we're going in the Roland direction," Girdwood says. "Everyone in the band has their own personal mixer. Once the console is up and running, you just leave them onstage; [the performers] are pretty much on their own, just picking up from where they left off the night before."—Barbara Schultz



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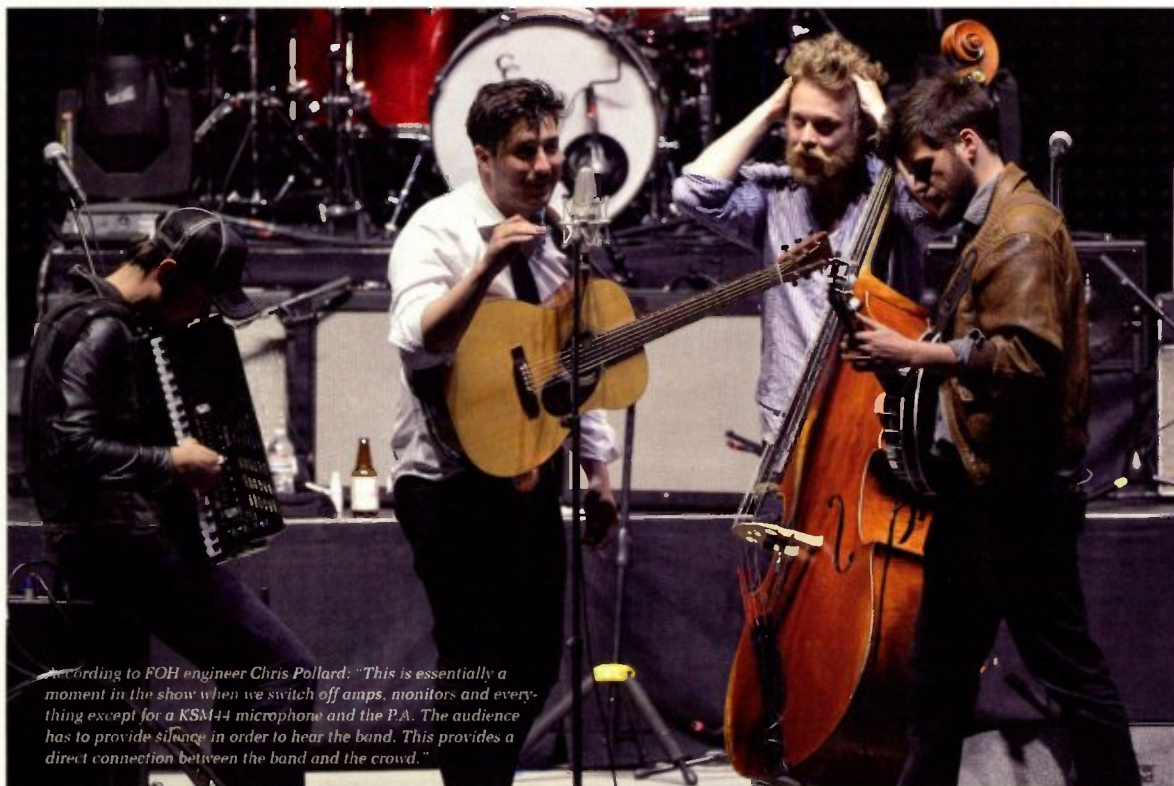
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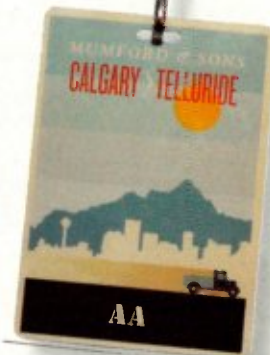
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## MUMFORD & SONS



According to FOH engineer Chris Pollard: "This is essentially a moment in the show when we switch off amps, monitors and everything except for a KSM44 microphone and the PA. The audience has to provide silence in order to hear the band. This provides a direct connection between the band and the crowd."



Mix caught Mumford & Sons during a three-night, sold-out run at the Greek Theatre in Berkeley, Calif., just prior to the announcement of bassist Ted Dwane's surgery and the cancellation of dates on the Stampede Tour. Our thoughts are with him.

**FOH engineer Chris Pollard**, pictured at left, mixes on a Midas XL4, which he chose for its sound—the preamps, EQ and its wide dynamic range. "I used to mix the band on digital consoles," he says, "but when the chance to switch over arose, I thought it could be a better choice for the sound of the band, and also a great chance to really learn the sound of all these compressors and FX that a lot of software is emulating. My setlist is programmed in as scenes, but that only allows for VCA, Aux, Mute and MIDI changes. I like the focus that brings to my mix.

"I use a range of classic live sound compressors—the UA1176 for lead vocal, Summit DCL200s for secondary vocals, Distressors for guitars—but my favorites are the TubeTech multiband compressor and Alan Smart C2 limiter, which are inserted in stereo over the main mix. For lead vocal I use the MMC1A multiband compressor in line with a UA1176N. Toward the end of the show, Ben, Marcus, Ted and Winston gather around a Shure KSM 44 set to figure-8. The horn section is using Shure KSM313s, ribbon microphones, a new addition. Very smooth-sounding microphone, very natural."

"For the Greek shows Solotech provided an L-Acoustics rig with eight K1s per side for main hang, eight SB 2B subwoofers per side stacked, 12 KARA front fills stacked and two ARCs for outfills," adds **system tech Jamie Howieson**, pictured right. "The system is powered by LA 8 Power amps with LA Network Manager control. It changes a bit for shed or arena shows."







"I'm on a DiGiCo SD10, with no external plug-ins, running at 96k," says **monitor engineer Joel Gregg**. "It's pretty full—close to 90 inputs and I'm up in the mid-40s for my outputs. It's such a busy mix I'm reluctant to add more things. I make sure that levels are right and cues are followed. Two DiGiCo SD racks are hooked up to the control surface via optical, and on top of each of those we have two Galileos that are running Meyer MJF212a wedges. We record every show via the DiGiCo UB MADI device. But we have to pick our 48 channels to track."

"My entire setup relies on my monitor tech, Fabrice Quirin," he adds. "He runs RF coordination, patch, and basically runs monitor world through the whole day. We use Ultimate Ears for our IEMs. For wireless, we use Shure PSM1000s and a few PSM900s, with two Shure 8-way combiners that we bump down to one helical antenna so everyone's ears run off the one source. Altogether there are 18 receivers dotted around the place."



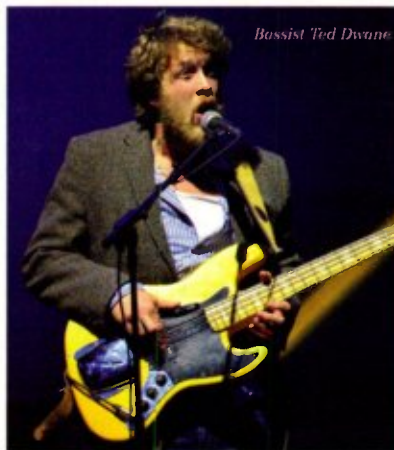
*Marcus Mumford—  
guitar, vocals, drums*



*Multi-instrumentalist and vocalist Ben Lovett*



*Guitar Tech Adam Shook*



*Bassist Ted Dwane*



*Banjo/Bass Tech Adam Cline*



*Winston Marshall—vocals, banjo, guitar*



"On Marcus' full kit we have a Beta 52 in the kick, Beta 57s on snare top and bottom, SM81 on hats, Beta 98s on all the toms and KSM141 overheads," says drum tech Ivan Boneyard. "Marcus' single front kick down front has a Beta 91 inside and 52 in the hole."

**more online**



Check out an exclusive photo gallery of Mumford & Sons at the Greek theatre from photographer Steve Jennings. [mixonline.com/072013](http://mixonline.com/072013)



Jason Aldean and band at Sanford Stadium, University of Georgia



# JASON ALDEAN

## RIDING THE NIGHT TRAIN IN 2013

BY TOM KENNY

Jason Aldean puts on a rock 'n' roll show. The roots are in country, but the approach and delivery is straight-up guitar-bass-drums, with wide dynamics and big sound. It wasn't that long ago that long days in a van were followed by shows for maybe 100 people in a club. But since his rise that began in 2009 and exploded in 2010 with *My Kinda Party*, he's been a sold-out headliner. On this month's cover, taken in late April 2013, he played to 68,000 in the first-ever music event in Sanford Stadium on the University of Georgia campus, not far from his hometown of Macon.

"There's a joke on the tour that the only thing country about this band is Jason's hat," says monitor engineer Evan Richner, a Cleveland native who has been with the crew since a fortuitous call from a former roommate and subsequent move to Nashville in 2005. "We have a bass player with tattoos coming out of his sleeves! It is very high energy."

"This is a real band, playing together, and they have been for a long time," adds FOH engineer Chris Stephens, who joined the team in the summer of 2009, right before going out as an opener for the Brooks & Dunn farewell tour. "Jason is a great singer, but the energy

of the show comes from the whole band and the way they interact. There are no tracks on this tour. Everyone in the band is incredibly talented and that makes my job much easier."

The core of the band—Aldean, guitarist Kurt Allison, bassist Tully Kennedy and drummer Rich Redmond—have been intact for a decade. They play together in the studio and on the road, having developed a rapport that comes across onstage. They are known to make Platinum-selling records with only a few days of tracking and a couple of weeks to mix.

### GETTING BIG

Aldean started his first real headline tour in January 2010, and by the second night, looking at the speed of ticket sales, they knew they had to bring in a larger P.A. immediately. Tour sound provider Spectrum Sound of Nashville was providing a d&b audiotechnik J-Series rig, so they just made it bigger. Today, the arena dates on the tour (way larger for football stadiums, slightly larger for Wrigley Field, Fenway Park) consists of (40) J8s for the main hang, (32) J12s side hang, (16) flown J-Subs, (18) ground J-Subs, (8) Q10 front fills, (74) D12 amplifiers. Control is via Lake LM44 speaker processing and distribution.

According to Stephens, the rapid growth in size of venues didn't lead to much of a change in the style of mixing, mainly because of



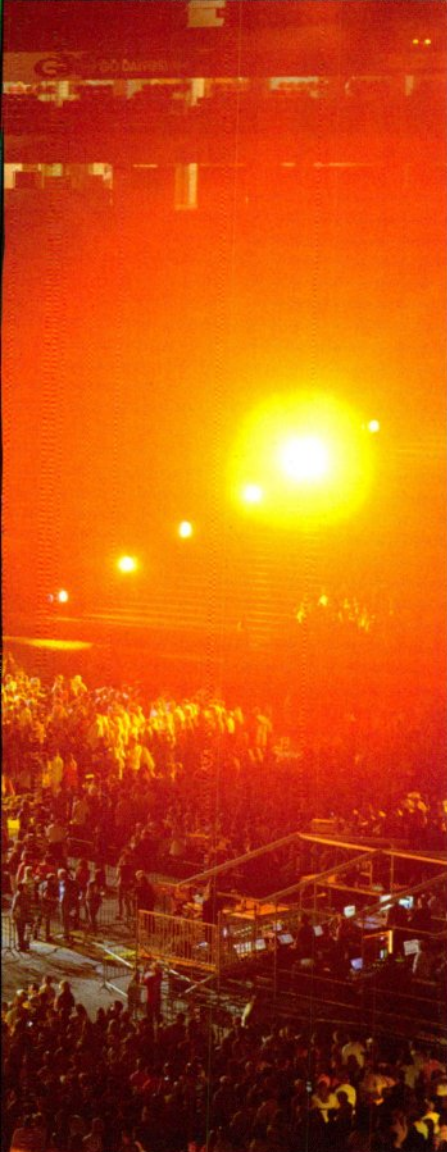


Photo: Chris/Todd Owyong

stack array to a stadium hang and feel comfortable that we are providing a consistent sound. I have been working off the same show file, with a few changes, for the past three years. Honestly a lot of P.A.s are so good now; it's mostly preference, like picking a vocal mic."

Stephens grew up in Knoxville, Tenn., mentored by Mike DeFreece in a megachurch through middle and high school and later attended Belmont University. When he graduated, he began working with Spectrum Sound; very shortly after, he was mixing FOH for Wynonna. Then he spent two years mixing monitors for Michael McDonald. Now he's with Jason, among other artists.

For Aldean, he mixes at an Avid Profile, which he has been familiar with since it came out. About a year-and-a-half ago, they modified the front end. "We're using Midas XL8 preamps, the DL431," he explains. "The splitter outputs AES50 to a format converter, then MADI into the Avid input card. The change to the sound was incredible. And then you also get the Profile processing and mixing power. It really gives us the best features of both systems." The same is done for the monitor mix, with Midas DL451 output converters between the Profile and the in-ears.

Effects and tools are mainly in the box, with Waves V9, SPL Transient Designer, Crane Song Phoenix, Massey De:sser, Rane Serato, Rational Acoustics Smaart v.7 and the like. But this is definitely an act, whether studio or live, that believes it all begins up front, at the mic. The band had



From L to R, of the Avid Profile: Spectrum P.A. tech Bob Campbell, FOH engineer Chris Stephens and cew chief/system engineer Jeremy Seawell

Photo: Kevin Twist

the way the band plays and the choice of d&b rig. "The P.A. provides a level of consistency that doesn't require me to start over or make drastic changes when we move from small clubs and promo shows to stadiums," he says. "The way the P.A. scales, we can go from a small ground-

already been working with Audio-Technica when Stephens came onboard, and after initial skepticism, the team feels confident they have matched the best mics to specific instruments in specific places, over many years, fine-tuning all along. It's essentially a studio philosophy of micro-movement of the mic rather than micro or massive EQ and processing.

"This show is really guitar-heavy," Stephens explains. "I have an A-T 4081 ribbon and Shure SM57 on each guitar cabinet panned slightly to either side, then add slight delay at the console to phase-align the two mics. I EQ guitars barely at all. Highpass filter, that's about it. The right mics in the right place, and we get a nice wide image with plenty of space for the vocal. Jason's vocal mic is an Audio Technica AE6100, which is processed by a Massey De:Esser, Rvox, to CLA-2A, to C6 multiband compressor to Hybrid EQ. I only use the H-EQ if he jumps on the thrust. I try my best to listen first and not make knee-jerk reactions. You can really dig a mix into a hole by relying on EQ. It's best to fix problems at the source."

Stephens explains more about how he achieves the band's mix: "The mix is based very heavily on multi-stage bus compression. Input channels are compressed very lightly and then are bused to stereo and to post-fader groups for drums, guitars, background vocals and so on. Then those groups are compressed very heavily with multiple compressors—the idea being that each compressor is only responsible for a small amount of gain reduction and attack and release times are set so that when the first compressor is releasing, the next in the chain is attacking, and so on. This enables me to apply a large amount of compression without hearing the compressor 'breathe.'

"These compression, or crush groups, are then mixed back into the stereo bus along with the lightly compressed input channels. This allows me to very easily control the dynamics of the show. The groups are post-fader, so as I move the channel VCAs up and down, I am changing the amount of compression on the groups and therefore the dynamic level of the whole show."



Monitor engineer Evan Richner, left, and monitor/RF tech Ryan Stotts



Photo: Kevin Twist

graphics to audio. After a couple of years there, a former RCS colleague and roommate, who had earlier made the move to Nashville to go out with Richard Marx, called and said this new guy Jason Aldean was looking for a monitor engineer. It was a Yamaha M7, not bad at all, though the crowds sometimes dipped below 100. The scale all changed, of course, but not the family-like vibe, according to Richner. From the techs back at Spectrum to the band onstage.

Things have actually gotten easier, Richner only somewhat jokes. Replacing wedges with Ultimate Ears UE115, through a Shure PSM 1000, has led to a more consistent sound and a happier band. He limits himself to a pretty simple and straightforward six main mixes, all stereo, with a couple guest channels ready, and they've had no real issues with wireless, which Richner attributes to the design and coordination of monitor/RF tech Ryan Stots. A little drum reverb. Some compression. The band knows what they like from the studio. He gives them the sound, washing it in analog through the Midas pre's, without re-creating the track.

"We treat it like a rock show, guitar-heavy," Richner says. "Jason likes a lot of guitar, a lot of his vocal, and a snappy kick drum. I might do a little overall mix compression so he doesn't have to reach in spots, but never very much. Sometimes I'll chase Jason a little bit simply because of the range of his songs, from rock to ballad. The rest of the band is pretty straightforward. They're a great band, and they've been playing together for a while." ■

### WHAT THE BAND HEARS

Monitor engineer Richner, along with the band's previous FOH mixer, was instrumental in developing the A-T relationship and long-term strategy starting in 2005. "Jason likes them," he says simply, "and then over the years we've matched them to the instrumentation, one by one. Try this, try that. They've been great to work with, from Roxanne on the artist side to Bob Green with the wireless."

Richner got his start at Bowling Green University, studying visual communication technology. He caught on with Cleveland production house Rock Capital Sound during, then after college, gravitating from

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Photo: Courtesy of Disney

# THE LONE RANGER RIDES AGAIN!

SOUND CHALLENGES OF A FUN-FILLED WESTERN

By Blair Jackson

**M**aking a western in this day and age is a risky proposition. But leave it to Gore Verbinski—director of the mega-popular *Pirates of the Caribbean* films—to come up with a crowd-pleasing summer epic to give the genre a much-needed shot of adrenalin. *The Lone Ranger*, starring Armie Hammer in the title role and Johnny Depp as Tonto (his character elevated from sidekick to second lead) is a western for a new generation of moviegoers, a deft blending of imaginative, cleverly staged action sequences, a compelling classic story and doses of humor, both silly and dark. This just might work.

Many of the major players on *The Lone Ranger* sound team are veterans of multiple past Verbinski films, from production mixer Lee Orloff to supervising sound editors Addison Teague and Shannon Mills and recording mixers Chris Boyes (FX) and Paul Massey (dialog, music). Add in longtime picture editor Craig Wood and composer Hans Zimmer and you've got a core crew that's largely in sync with both the discriminating, hands-on director, and with each other.

"In the 17 or so years Gore has been making features, technology has evolved and opened the door to allow him to fold visual effects, music and sound into one simultaneous creative process," Teague comments. "Gore





Photo: Courtesy of Disney

wanted each of these departments to inform each other, as he put the film together for the first time. Under one picture department roof, he brought together traditional picture editorial with sound design, music and VFX. This core team was at his disposal for months to address any direction he was taking on a given day. It was a really exciting phase. He works on one sequence at a time. Being all together created a conversation about how music and sound could help contribute to what the picture editors were constructing.”

“Gore is very involved in the soundtrack,” Mills adds. “Because of the schedule and demands on Gore’s time, we spent a lot of time early getting a few important scenes worked out and put into the Avid. Gore very much likes to develop sound and picture at the same time, having them both inform each other. On the flip side, when we hit the final mix stage, there are a lot more options and opportunities that arise there, and Gore is not afraid of taking advantage of those. Sometimes a change in the music, or a new line of ADR, can open up opportunities to experiment with sound in ways that weren’t possible previously. So there can also be a fair amount of sound shaping on the final mix.”

Fittingly, most of the film was shot in gorgeous outdoor locales around the West—primarily New Mexico, Utah, Arizona and Colorado. Production recordist Orloff “did an absolutely amazing job under pretty grueling conditions,” says dialog re-recording mixer Massey, “because they were out there in the desert, climbing mountains and all the rest. He went through a lot of gear, he told me; he had a lot of sand and dirt in his

recording equipment. But he always does a fantastic job recording the dialog. It was very rich; sometimes a little noisy because of the environment and because of generators and wind-blowers and all that. Still there was very minimal ADR recorded for technical reasons, which is, of course, a credit to him.” Massey did his dialog premixes at his own studio in Ojai, California.

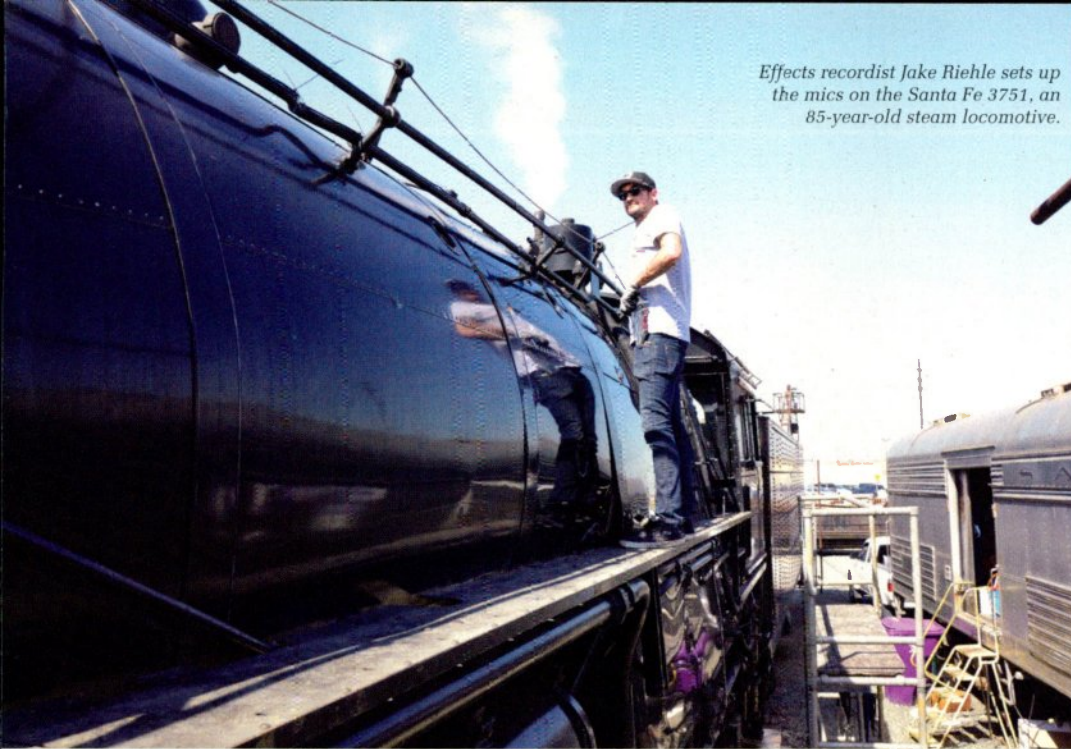
To pull off a big period film like *The Lone Ranger*, which is mainly set during the building of the Transcontinental Railroad during the 1860s, attention to historic detail, both aurally and visually, was a high priority for Verbinski and the crew. From a sonic perspective, this meant going to great lengths to capture the sound of trains of that era—the biggest set piece in the movie is an elaborate locomotive chase and gunfight—as well as various firearms, authentic interiors (jail, saloon, etc.) and, naturally, horses galore.

Teague says, “Effects recordist Jake Riehle and I traveled to New Mexico, where production had constructed a five-mile loop of jointed rail with real trains for the shoot. These were usually pushed or pulled by modern diesel engines, so our goal on that trip was to collect jointed track and car movement sounds. For two days they let us go anywhere we wanted on these trains while they shot, as long as we were out of the camera’s view. And to capture the sound of the period steam engine, Jake and his recording partner Bob Kellough went on an amazing train recording adventure.”

“The Santa Fe 3751 is a Los Angeles-based steam locomotive currently owned by the San Bernardino Railroad Historical Society,” Riehle adds.



Effects recordist Jake Riehle sets up the mics on the Santa Fe 3751, an 85-year-old steam locomotive.



"Its crew of volunteers maintain the 85-year-old steam engine and take it out at least once a year on a passenger-funded exhibition. Last May, we were fortunate enough to have our mics ride along with the locomotive on its trip from L.A. to the Grand Canyon and back. During its six-day trip, we had a Sound Devices 744T strapped to the train's tender [coal car] with a Sennheiser 8050 on top of the locomotive about 10 feet behind the stack, a Sennheiser 8040 down by the 80-inch drive wheels, and a Schoeps MS rig above the engineer's cab pointed at the nose of the train.

"Since we knew the train's route, we decided to map out spots each day that could be good for pass-by recordings. Obviously we would have to get ahead of the locomotive, set up our mics quickly, wait for it to pass, and hop back in our car to get in front of it again. So we fitted our on-board recording rig with a Spot personal locator, which leaves Google Maps-based digital bread crumbs in real time that we could follow on our iPhones. We were updated every 10 minutes of how close the train was to our recording location, so even if we couldn't see the train, we knew about where it was."

When it came to weapons, such as that rare rapid-fire 19th-century marvel known as a Gatling gun, Riehle once again hit the road: "We found an 1874 Colt Gatling gun replica out in East Texas to record. It took the gun owner two days to hand load the 400 .45 caliber black powder rounds we fired on his private shooting range. We surrounded the gun with a Schoeps MS rig, two Sennheiser 8040s feeding into a 744T, and a Sennheiser 8020 recording into a Sound Devices 722. We also put a Sony PCM-D50 downrange to capture a more distant report from the gun."

Riehle and Mills also made other gun recordings in the hills and canyons at Skywalker Ranch, in Northern California, "to emulate the echo and slapback in many of the locations in the film," Mills says. Mills even borrowed several historic guns from his father, a huge fan of westerns and a gun collector. Most of the sound design—which early on also included contributions from Gary Rydstrom, who left to work on another film—was done at Skywalker Sound, where the majority of the crew members have been regulars for years and have amassed significant sound libraries covering thousands upon thousands of FX and atmospheres.

The all-important horses were a combination of library recordings and Foley. "In the end, it was probably about 50-50," says FX mixer Boyes.

"The Foley works really well when the horse comes in and stops and moves around. Addison and Shannon made a really wise choice to make sure that the editors who cut the Foley horses also cut the FX horses; that was key. So what that meant is, often times, unless you were actually looking at the horses' feet, I could use both, because the FX will give you the body and the size and that wide stereo field you want that tells you this horse is riding through the desert, and the Foley will give you the specificity, but also the power and the deep resonant quality that [Foley artist] Dan O'Connell gets on the Foley stage. He's amazing." Nia Hansen was the Foley supervisor for what was a very Foley-intensive film from beginning to end.

Another aspect of the film that required unique expertise and an unusual recording session was the loop group recording for the film's Comanches—Tonto is a Comanche in this Lone Ranger, and the railroad is being built in part through Indian Territories. "We arranged a loop group recording session near Lawton, Oklahoma, in the home of the Comanche Nation," dialog supervisor Murray explains. "Since there are no recording studios within range of their rural homeland, we decided to record outdoors. I was lucky to have Lee Orloff, the production sound mixer, and Joe Magee, who had supervised the music playback, on set. We staged our recording session in a dry irrigation pond bed in a field away from the highway. The walls of the pond sheltered us from any road noise and also gave a nice little bounce to the sound. We spent Saturday morning recording women and children for the Comanche river camp scene, and the afternoon with men singing and drumming for the death dance scene. On Sunday we recorded men doing conversation and call-outs, as well as full Comanche war whoops and traditional songs."

The final mix for the film, which took place during May and June at Sony's Cary Grant Theatre in L.A., using that room's Harrison MPC4-D console, was as long and intense as you might expect for a two-and-a-half-hour music- and FX-heavy summer extravaganza overseen by a perfectionist director. Long hours notwithstanding, Boyes says, "This film exemplifies what you want to obtain in a mix in terms of the balance between sound effects and music. The rhythmic element is a big reason why. The rhythmic elements for Gore go beyond just train clacks in rhythm with a cue. In Gore's mind, everything—footsteps, impacts, horses—should be in beat with something, and even if it's not in beat with music, it should be in a rhythmic way in beat with itself. For an effects mixer, that's a tall order because you have to support the sync and also find the elements within your tracks that will give you a rhythm."

The lengthy climactic train chase, in particular, required a herculean effort from everyone. Teague reveals that initial sound work on that scene actually began before it was even shot: "We were sent a 17-minute pre-visualization of the finale train chase and asked to do a sound-effects pass against the music. We saw this footage before we even read the script, but it gave us a good idea what the third act set piece was all about—trains, and [Rossini's iconic] 'William Tell Overture' [which for decades has been known colloqui-



ally known as the "Lone Ranger theme" because of its use on the popular '50s TV series]. We had not yet ventured out to collect train sounds, so we worked with existing library material for this quick task, and immediately realized the challenge on our hands was how to put the sound of something as rhythmic as a train under driving music and not have them clash. The trains never stop and the music never stops and the trains are constantly changing perspectives, and that needs to be in sync with itself as well."

Months later, all the elements for the scene came together in the final mix. "You have the clickity-clack of trains on jointed rail creating one constant rhythm" Teague says. "The chuffing stack of the steam engine creates another rhythm. The music will create the dominant rhythm. All the while, you can't ignore what speed the train is actually moving on screen. Track and chuff rhythms are defined by speed, but other elements, like the wood creaks of the cars, or the metal shings of the wheels on the rails, could be recorded in isolation and placed in or out of rhythm as desired. With wind and steady movement sounds added, you suddenly have a train come to life, with the ability to simplify as needed. These balances didn't happen until the final mix, when the final music was in and we could find the moments that felt right to take away the repetitive track clack and play up tonal winds for tension. At other times, we relied on the track clack as if it were a ticking clock, adding to the tension and anticipation."

Of course, *The Lone Ranger* isn't wall-to-wall action. There are also, as Boyes puts it, "a number of quiet moments that have a lot of texture, in terms of the ambiances. Early in the film, there's a scene in the desert at night where [Tonto and the Lone Ranger] are for the first time really talking to each other, and there's a snapping and crackling fire and all these distant creatures that are going in and out, and wind that comes and goes. There's a tremendous amount of that sort of interplay—where we're supporting the world with various different desert winds and cicadas and crickets, and every once in while, a bird or insect to spice through. It's a very full and robust ambient track, when it gets its chance."

There is also a mystical element to this version of Tonto, which also gave the sound team a chance to be creative in spots. In one scene cited by Mills, for example, "Tonto starts doing a chant, and out of this chant we go into a sonic dream state of spiritual reverence of sorts, as he conjures help from the spirits. By slowly pulling away the sounds of reality—ambience, voices, wind—and slowly sinking into a dream tone, we were then able to set the stage with sonic characters from the spirit world, like crows, elk, and deer."

Hans Zimmer's score "was huge, as you'd expect," Paul Massey says, "and it was very much an evolving score throughout the final mix here. We actually did almost a final mix for a preview in the early stages of the mix—Gore wanted a final-grade audio track for a

preview, and at that point a lot of the music was temp mockups and works-in-progress. It was still multiple stems out from Hans, but a lot of it was synthetic and was going to be replaced later. Gore was working very closely with Hans and his crews in the evenings, while he was on the stage with us during the days."

Typical of the always-versatile Zimmer, the score runs the gamut from grand orchestral themes to moodier, more intimate passages that have a Native American or Old West feel. Still, good and memorable as the score may be, chances are that audiences are going to come out of theaters humming the "William Tell Overture." "For many, many weeks we've had that running around our heads; can't get it out!" Massey says with a laugh. "But that's good! People are going to really remember that scene." ■



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# MANY FORMS OF WIRELESS

BY TOM KENNY

It's almost cruel. At the same time that the wireless spectrum is shrinking worldwide, the complexity, scale and popularity of live events—whether in houses of worship, broadcast/entertainment or massive music festivals—keeps growing. Over the past few years, manufacturers have been scrambling to stay ahead of the bandwidth crunch, moving to the 500-698 UHF range, 900 MHz, 2.4 GHz and available UHF adjacent to local TV channel 37. I simplify, of course, but the point is that wireless frequency coordination and wireless development is a moving target. Just one example: James Stoffo, a longtime authority in complex wireless and the founder of Professional Wireless Systems, the guy who led many away from the increasingly crowded VHF band long ago, is now headed back to the empty space with his new wireless comm system.

The following is an overview of where and how the primary wireless system manufacturers in professional audio are approaching the ever-changing nature of spectrum allocation. The presumption is that most, if not all, systems, include a mic, handheld/bodypack transmitter, and receiver, with various accessories, from antennas and combiners and boosters to alternate mic capsules and DSP emulation.

## SHURE ULX-D SERIES

There's a long, long history of wireless system development at the now 75-plus-year-old family-owned, Chicago-based Shure Inc. The company has also taken the lead, with acknowledged support of other manufacturers, in the ongoing lobbying efforts with the FCC over white space

and frequency allocation issues. Shure made a huge splash in 2011 with the TEC Award-winning Axient Wireless Management System, which introduced a revolutionary frequency diversity and spectrum management scheme operating within a 6MHz band (a single TV channel). The company also has been active in the 2.3 GHz range, aimed at musicians, with recent introductions in the BLX and GLX-D lines. At Infocomm last month, it was all about the Microflex Series for the installation market.

But the most recent big news in the pro audio and touring market was the mid-2012 introduction of dual and quad receivers in the ULX-D Series, adding Dante network capability and a High Density mode that allows up to 47 systems to operate in a 6MHz band, in the 470-932MHz range, some specified for outside the U.S. They employ multiple sets of group frequencies, either preset or custom, for bouncing around undetected and uninterrupted. Networking capabilities allow for chaining multiple units. Encryption is AES-256, and control is through Shure's Wireless Workbench software. The Dante networking license led to the April 2013 announcement of integration with Yamaha's series of Dante-enabled digital consoles.



## SENNHEISER DIGITAL 9000 SERIES

Sennheiser has long been associated with high-end wireless, owning a dominant share of Broadway, a huge presence in broadcast, a long-standing loyalty in touring, and a reputation

for reliability, sound quality and bulletproof operation. The company's newest entrée, the Digital 9000 Series, has created quite the buzz since its introduction at IBC 2012. But its legacy includes ten years of development, when the digital option first became evident.

The Digital 9000 system—which includes the EM 9046 Receiver, SKM 9000 handheld transmitter and SK 9000 bodypack—was designed for high channel counts, with 24-bit audio clarity at 44.1/48/88.2/96 kHz sampling rates. The EM 9046 housing can hold up to eight receivers and operates in the UHF range from 470 to 798 MHz (328 MHz of switching bandwidth). The SKM 9000 handheld transmitter can be fitted with four dedicated capsules, as well as all Sennheiser evolution G3 and 2000 Series wireless heads, with a couple of Neumann options, too. It includes a unique automatic compensation of RF cable loss. But it's the sound quality, uncompressed (!), that users keep talking about. <http://en-us.sennheiser.com/>



## LECTROSONICS DIGITAL HYBRID WIRELESS

Lectrosonics is something of an anachronism in today's corporate-driven, cost-cutting, outsourcing world. Every-

thing, from R&D to design to machining to marketing, is done from a home base in Albuquerque. A home-grown company with its roots in portable P.A. and a reputation in uncompromised quality. They own a huge chunk the film and TV wireless market, but their systems are found in theaters, HOW, corporate and, increasingly, a huge number of courtrooms, boardrooms and educational facilities. The Venue receiver, employing Digital Hybrid Wireless, is now a few years old, but with up to six (!) receivers in a single-rackspace housing, it still feels new.

Lectrosonics Digital Hybrid Wireless employs a proprietary algorithm to encode digital audio information into an analog format, which is then transmitted over an analog FM wireless link. A 24-bit A/D converter digitizes the audio, and then filters above 21 kHz. The resulting signal is encoded to produce an analog data signal for RF transmission. At the receiver, the encoded signal is captured and decoded. The digital portion eliminates a compander and its artifacts, and provides audio frequency response flat to 20 kHz.

The HH Digital Hybrid Transmitter, meanwhile, allows for capsule interchange for mics with the same thread diameter and pitch, including lines from Shure, Blue, Earthworks, Heil and Telefunken, along with a few others—such as Neumann and Sennheiser—with adapters.



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## AUDIO-TECHNICA AE 5000 SERIES, SYSTEM 10 DIGITAL

The Artist Elite Series 5000 represents Audio-Technica's top of the line for touring and large events. It has dual-independent RF sections, with automatic scanning and switching through the company's Intelliscan feature.



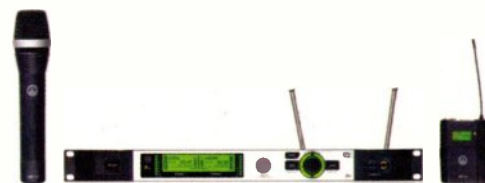
But the big news from Audio-Technica over the past year has been the introduction of the System 10 Digital line into the music-

ian, HOW, corporate and event markets. It operates at 24-bit/48kHz in the 2.4GHz range, and employs Frequency Diversity (two dynamically allocated frequencies), Time Diversity (sending same signal at multiple times to avoid interference) and Space Diversity (two antennas on each transmitter). Very easy to set up, with a durable transmitter and solid bodypack. It is half-rack in size, but built for use anywhere with feet on the bottom and recessed indents on top. As one A-T rep said recently, "It's not rack-mountable, it's 'stack-mountable.'" Meaning? Very portable. [www.audio-technica.com](http://www.audio-technica.com)

## AKG WMS4500, DMS700

AKG is part of the Harman family of companies, so microphones and wireless are in the DNA. The high-end of the company's analog line, the WMS 4500, was introduced in 2008 but remains a rock-solid performer for touring, events and multipurpose-venue applications. It introduced AutoSetup for intermodulation-free channel selection, EnvironmentScan settings for RF range scanning, and a RehearsalMode selection, for saving system data during rehearsal/setup.

In spring 2011, AKG introduced the DMS 700 V2, the first digital wireless system to conform to both FCC and European specs; it has been the company's flagship of late, since its introduction in April 2011. Available in two new frequency bands—Band 7 (500-530 MHz) and Band 8 (570-600 MHz)—it offers 40 channels for simultaneous use, 155 MHz frequency bandwidth, 512-bit encryption and HiQ network control and monitoring from a PC via Harman System Architect software, Apple iPhone/iPad/iPod or Soundcraft Vi consoles. [www.akg.com](http://www.akg.com).



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## SONY PRO AUDIO DWZ SERIES

Sony Pro Audio has made a concentrated and increasingly comprehensive effort in the 2.4GHz space. The introduction of the DWZ Series a couple of years back is being followed up regularly, the most recent being the DWZ-B501 instrument set and the DWZ-B50GB guitar set.



Each new set offers 24-bit linear PCM digital audio transmission, two selectable RF modes and Sony's reliable RF transmission, a 5-band equalizer and robust metal body transmitter. The DWZ-B501 instrument set includes a cardioid condenser microphone with flexible gooseneck and two-way clip; the DWZ-B50GB guitar set also includes a cable tone generator for matching the sound from wired and wireless systems. [www.pro.sony.com](http://www.pro.sony.com).

## LINE 6 XD-V, RELAY

There is some energy coming out of Line 6 these days. Still a relatively young company, led by co-founders Michael Diodic and Marcus Ryle of Oberheim and ADAT fame, with new marketing executive muscle from Paul Foeckler of Digidesign fame, Line 6 began with guitar amps and pedals, DSP modeling and audio interfaces, and now has control surfaces, microphones, speakers, and vocal and instrument wireless. Complete systems for the stage.



The company's wireless platform comes from the 2008 acquisition of X2 Digital Wireless and is now in its fourth generation, represented by the XD-V and Relay digital wireless systems, the most recent being the V75-SC Super-Cardioid mic/transmitter, offering four mic models within the system: Shure Beta 58A, AKG D5, Electro-Voice N/D767 and a Line 6 original super-cardioid. [www.line6.com](http://www.line6.com).

## ZAXCOM DIGITAL WIRELESS



You don't often hear about Zaxcom in the touring and event markets, and that's too bad. Glenn Sanders has built a solid company out of New Jersey and made massive inroads into the film, video and ENG communities. The company

is said to have engineered the first wireless system to use digital modulation, with the goal of avoiding distortion due to companders, antenna diversity and RF interference. Zaxcom jumped on 2.4GHz early, as its primary market didn't demand a high channel count.

The foundation of the system is the TRX-900LTS transmitter, which sends a stereo image from a single bodypack and records a time code-stamped, 2-channel, backup directly within the bodypack to eliminate the risk of audio loss due to interference or signal dropout. [www.zaxcom.com](http://www.zaxcom.com).

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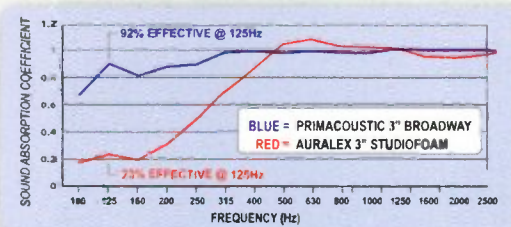
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## PEAVEY PRO COMM PCX U-1002

With a variety of affordable systems in the 900MHz band, Peavey, as one would expect, has its sights firmly on the musician and the stage. The 100-channel, true diversity Pro Comm PCX U-1002 wireless systems



for live voice and guitar, represents the latest introduction. It employs AutoScan technology and CCS (Channel Control System), which sets the channel of the transmitter rapidly and precisely. The compact PCX U-1002

receiver occupies a half-rack space, includes XLR and ¼-inch outputs and features a color LCD panel displaying function status. [www.peavey.com](http://www.peavey.com).

## CLEAR-COM TEMPEST



In the world of IFB and comm systems, Clear-Com is practically a Kleenex or Xerox—one name for an entire market at InfoComm last

month, the company showed the latest enhancements to its Tempest Digital Wireless Intercoms, the most notable being the new Tempest 900 BeltStation.

The Tempest line comprises the 2.4 GHz Tempest 2400 and 900MHz Tempest 900 in either a 2- or 4-channel option, offering a Seamless Roaming feature for coverage across expanded spaces. BeltStation users can migrate between as many as 16 different Tempest BaseStations without having to change the settings. Backward-compatible with Tempest 900 firmware version 3.0, the new BeltStations are fully compatible with both two- and four-channel versions of the Tempest900 BaseStations and BeltStations. [www.clearcom.com](http://www.clearcom.com).

## PROFESSIONAL WIRELESS SYSTEMS

PWS, a division of Masque Sound, was started awhile back by James Stoffo, who then sold the company a few years ago, then partnered with the new owners to launch Radio Active Designs, a new company in wireless comm occupying the now-lonely VHF space. The company is developing Enhanced Narrowband Distribution, with audio all-digital and RF all-analog. Each channel has a bandwidth of a mere 25kHz, and a user can operate 30 base stations with up to 180 belt packs in the same UHF footprint as a single base station/four-belt-pack system that uses traditional FM technology. Look for more exploration in VHF in the coming years. [www.radioactiverf.com](http://www.radioactiverf.com).





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# 7 HANDHELD VOCAL MICROPHONES

BY THE MIX EDITORS

It's summertime, and there are thousands of microphones out there on thousands of stages across the country. But as nearly every FOH engineer emphasizes, it all starts with the singer. Here are a few that have caught the ears of the *Mix* editors over the past couple of years.

## AKG D7



The D7 reference dynamic vocal microphone is said to create the subtle and open sound of a condenser capsule with the powerful resonance of a dynamic microphone. The patented dual-layer Varimotion diaphragm can vibrate unhindered, promising crisp and clean sound. The laminated material damps high resonance peaks in the frequency response, which in combination with the tight, supercardioid polar pattern enables the D7's outstanding high gain before feedback. Its mechano-pneumatic capsule suspension and an integrated high-pass filter effectively eliminate handling noise. A precision metal dust filter provides consistent protection for the diaphragm, ensuring an extra-long life. [www.akk.com](http://www.akk.com).

## AUDIO-TECHNICA AE5400



The Artist Elite AE5400 cardioid condenser handheld microphone offers a robust design for enduring dependability on the road, and includes anti-shock engineering for low handling noise and quiet performance. Featuring the same element as the company's AT4050 studio mic, its large-diaphragm capsule promises an accurate, natural response. It has an integral 80Hz HPF switch and 10dB pad. The AE5400's double-sided printed circuit board uses surface-mount components, while an extensive grounding plane and Audio-Technica's attention to best-practice grounding methods aim to minimize electrical noise. The AE5400's multi-stage grille design promises excellent protection against plosives and sibilance without compromising high-frequency performance and clarity. A custom transformer helps isolate the mic from unwanted noise and RF interference, and provides excellent saturation characteristics that contribute to smooth linear sound quality. [www.audio-technica.com](http://www.audio-technica.com).

## AUDIX VX5



Now coming into its own, the VX5 is a multipurpose, professional vocal condenser microphone designed for live, studio and broadcast applications. The VX5 is said to have a smooth and accurate frequency response, resistance to feedback, and can handle very high SPLs without distortion. Designed with a tight and uniformly controlled supercardioid polar pattern, the VX5 helps isolate vocals from the rest of the stage. Other features are a 14mm gold vapor diaphragm, an acoustically ported steel mesh grille with a multistage pop filter, and a -10 dB pad and bass roll-off filter. The VX5 will handle SPLs in excess of 140 dB (with pad and roll-off engaged) and promises more than 20 dB of ambient noise rejection on live stages. The VX5 requires 18 to 52 volts of phantom power. [www.audixusa.com](http://www.audixusa.com).



## EARTHWORKS SR40V

According to the company, the SR40V, which debuted in 2011, is the first and only High Definition Vocal Microphone. Engineered to deliver a crisp, clear and natural vocal sound, with subtle detail, the mic boasts an all-new circuitry that combines flat, extended frequency response with lightning fast impulse response. Frequency range spans 30 Hz to 40kHz, with low handling noise, a self-noise rating of just 22dB SPL (A weighted), sensitivity rating of 10 mV/Pa (-40 dBV/Pa), and peak acoustic output rating of 145 dB SPL. [www.earthworksaudio.com](http://www.earthworksaudio.com).



## LINE 6 RELAY V75-SC

The new Relay V75-SC 14-channel digital wireless handheld transmitter with super-cardioid dynamic capsule, introduced at InfoComm 2013, is designed for use with the Line 6 XD-V75 digital wireless system. Relay V75-SC isolates vocals while rejecting stage noise to achieve supreme vocal clarity and articulation. It features 24-bit audio quality, a stated frequency response of 10 to 20k Hz and a dynamic range of up to 118dB (A weighted), and uses compander-free Line 6 technology. Relay V75-SC also offers four microphone models. [www.line6.com](http://www.line6.com).



## PEAVEY PVM 44 AND PVM 50

New this year for Peavey, which has a broad range of mic options for instrument recording, is the PVM 44 cardioid and PVM 50 supercardioid, the only measurable difference between the two being their polar pattern. Each is said to offer a wide frequency response and high clarity, with Neodymium magnet capsule and transformer output. Frequency response is measured at 50 Hz to 16 kHz, with a sensitivity rating of -54±2 dBV/pa, 250-ohm impedance and a max SPL of 150 dB. [www.peavey.com](http://www.peavey.com).



## SHURE KSM9HS

Shure Incorporated has introduced a new variant of its premium KSM9 vocal condenser microphone, with switchable hypercardioid and subcardioid polar patterns. The new KSM9HS model joins the KSM9, which offers switchable cardioid and supercardioid patterns. Subcardioid? It's a pattern engineered for a wide pickup angle, making it well-suited to quieter stages. Overall, the KSM9 has a reputation for consistency across all frequencies, and providing more gain before feedback while decreasing proximity effect. Featuring a dual gold layered, low-mass Mylar diaphragm design, Class A transformerless preamp circuitry, with gold-plated connectors inside and out, the KSM9HS has a frequency response of 50 Hz to 20 kHz. It is available in wired and wireless versions, and it can be paired with Shure's Axient and UHF-R wireless handheld transmitter SKUs. [www.shure.com](http://www.shure.com).





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## MIX REGIONAL: TRIBUTE TO NEW ORLEANS

### CRAWFORD'S 'GIFT' TO FANS



Davell Crawford's *My Gift to You* is a beautiful new album of NOLA music that stems from the singer/composer/pianist's roots in soul, jazz, funk and blues. *Gift* features appearances by Dr. John, Crawford's regular rhythm players—bassist Mark Brooks and drummer Joe Dyson Jr.—and a host of musicians that Crawford hand-picked to complement each tune.

Tracks were captured to Pro Tools, mostly in The Music Shed (New Orleans), by veteran engineer/mixer David Farrell, who—before Katrina washed it away—was co-owner of the famed Ultrasonic Studios. Farrell continues to have a very busy career, recording in other local rooms and mixing 30-plus albums a year in his personal studio.

"We like Music Shed because they have a nice big room, and I think they have the best piano in town; it's a Yamaha C7 with a big, rich sound," Farrell says. Farrell mics the C7 with a pair of AKG 414s in an X-Y stereo configuration. "The mics are placed probably about 12 inches above the hammers," he says. "As long as you place them right in the structure, a little favoring the low end over the high end, you get a beautiful, sweet sound."

Those piano mics, and the U 87 on Crawford's vocal, went to the studio's API mic pre's; other instruments were miked with models from the Music Shed's cabinet. "Everything went down live for the most part," Farrell says, "including some of the vocals. All of the arrangements flowed from Davell, and the foundations of the songs always went down as a group. We augmented with other things on top of that, but Davell is always very conscious of capturing the spirit of the songs, and that spirit happens when everyone plays together."—*Barbara Schultz*

### The Nauts, Kenny Wayne Shepherd at Shreveport's Blade Studios



What started out as a fun project for Brady Blade to get some musicians together and jam—such as Dave Matthews, Jakob Dylan, Charlie Sexton and Will Sexton—has turned into a full-fledged band called The Nauts, and this newly formed group has been working on a forthcoming record. Blade, a rock/pop/country drummer, record producer, composer, and Blade Studios partner—along with Scott Crompton (executive producer and CEO) and mix

engineer Chris Bell—is also a part of The Nauts, who recorded the new material in the Russ Berger-designed Studio A on a 48-channel SSL Duality SE. Other equipment of note includes Neve 1081 and API 512mic preamps; Universal Audio LA-2A compressors; and Telefunken 251, Mojave 300 and Royer R-122 mics. The Nauts produced the tracks, with Bell serving as engineer.

Meanwhile, blues/roots-rock guitarist/singer/songwriter Kenny Wayne Shepherd came back to his hometown of Shreveport to do some recording at the studio. Shepherd brought along Chris Layton (drummer, founding member of Double Trouble), Tony Franklin (bassist, worked with Roy Harper, The Firm, Jimmy Page, Paul Rodgers, Whitesnake), Noah Hunt (vocalist, rhythm guitarist for the Kenny Wayne Shepherd Band) and Riley Osborne (pianist, worked with Willie Nelson) to work on this new project, which also features Robert Randolph, Joe Walsh, Warren Haynes and Ringo Starr, as well as many other guests.

The group recorded in Studio A on the SSL Duality. Other equipment of notes includes CLASP and Studer 827 recorders; Neve 1081 and API 512 mic preamps; Universal Audio LA-2A compressors; and Telefunken 251, Mojave 300, Royer R-122, Royer R-121, and Coles 4038 mics.

The upcoming release is being produced by Brady Blade and Bill Pfordresher, with Chris Bell serving as engineer.

### Better Than Ezra's 'Garden' Grows in 5.1



Don't tell Richard LaBonté that selling 5.1 surround audio albums is an experiment that already failed. The successful advertising/marketing executive, who has worked in and around the fringes of the music business for many years, has launched a company called Music Valet ([musicvalet.com](http://musicvalet.com)) to put out 5.1 audio releases designed, in part, to cater to the expanding market

of people with surround audio systems in their cars. LaBonté has two Acura TLs equipped with Elliot Sheiner ELS 5.1 systems and was frustrated by the lack of suitable titles, so he decided to start making his own.

His first choice is *How Does Your Garden Grow?*, an ambitious, highly textural 1998 release by the New Orleans band Better Than Ezra, produced by Malcolm Burn at the group's Fudge Studios. "I did not make this record with

some huge sales goal," he says. "I thought, 'I want to do it my way and I'm going to launch this with an esoteric record I love that people will either know or they won't, and this will really show what we can do.'"

After getting the group's approval and licensing the title from Rhino, LaBonté had the original analog multitrack masters transferred to digital by Lowell Reynolds at Blackbird Studio in Nashville, then brought in engineer Jay Rustin (Metallica, Brian Wilson, Leonard Cohen) to do the surround mix at TRS West in Sherman Oaks, Calif. The already sonically interesting album "was perfect for 5.1," LaBonté says. "Besides putting some of the electronic blips and bleeps, drum loops and a lot of the ear candy in the back [speakers], it has these string parts by Karl Berger that sound gorgeous in surround." And with songs that range from driving pop to lush ballads to punky alt-rock, the album has plenty of variety.—*Blair Jackson*



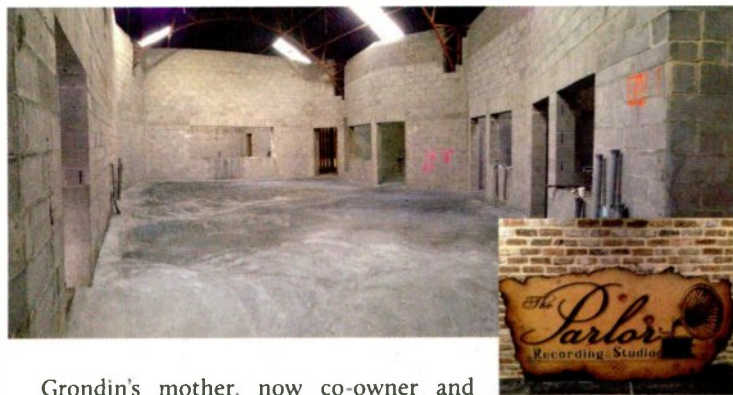
# BIG NEW STUDIOS IN THE BIG EASY

By Lori Kennedy

## THE PARLOR: SWEET HOME NEW ORLEANS

After cutting a record at Dockside Studio in Lafayette, La., engineer/producer/musician Matt Grondin—son of Jack Grondin, one of the original drummers for .38 Special—got the idea to build an analog, vintage, Neve-based studio closer to home in New Orleans. It didn't take him long to act; he's now co-owner of The Parlor in the Irish Channel section of town.

"Dockside has the best vibe and is beautiful and remote, but unfortunately, it's a three-hour drive from New Orleans," Grondin says. "It's one of the few Neve rooms in this area, and I thought, 'We could do a true large-format Neve room in New Orleans.' There are none. So I approached my mom about being a partner and co-financier on this project, and after much reluctance and hesitation, she jumped onboard."



Grondin's mother, now co-owner and CEO of The Parlor, is no stranger to the music biz; she's Judy Van Zant, wife of the late Lynyrd Skynyrd legend Ronnie Van Zant. "She's an entrepreneur in several areas of the music business, from festival promoting to owning a live music venue," Grondin says. "Royalties from Ronnie's songs have greatly supported making The Parlor a reality, and in some ways is our continuation of what he started, albeit in some drastically different genres. Between her resources and connections with talent booking, and my gear and affiliations with a large number of bands, the new studio actually seemed like something that could be a success."

Design is being done by Dave Mattingly, who was the construction foreman for the Blackbird Studios build in Nashville. Local builder David Devillier is the general contractor and has helped steer the ship back on course after a couple of delays.

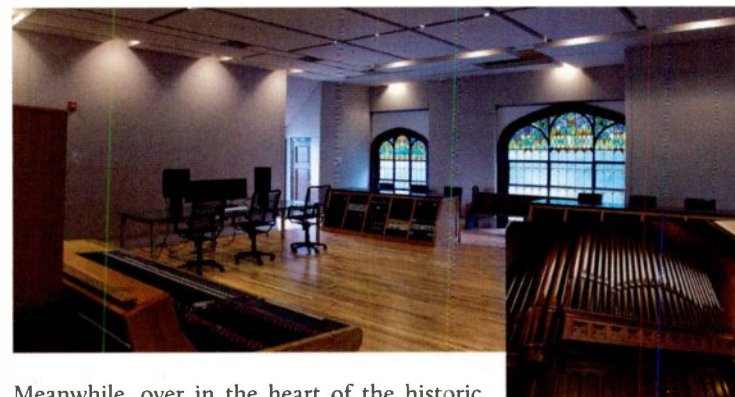
Grondin and chief engineer Eric Heigle have pressed forward with recording and mixing, setting up a makeshift studio in the completed lounge and offices of The Parlor. "When I moved out of my house, all my gear got put in storage while the studio was under construction," Grondin says. "We hit a really long lag at one point of six months waiting for the city to issue permits—don't get me started on that one. One day Ian Neville and I decided to throw together a temporary rig in the office space to do some editing and mixing for the group he plays with, Dumpstaphunk. It actually worked out pretty well in the space, and not too much longer, Eric was bringing bands in there to cut

live-band studio albums. Our clients have been willing to accommodate the shortcomings, mostly because playback sounds great, and also we both look at it as building future relationships for the big space once it's done."

When finished, The Parlor will be a 3,000-square-foot facility, stocked with a ton of vintage gear. "I love old equipment," Grondin says. "Our console will be a vintage Neve 8078, fully restored by Vintage King Audio. We are cutting everything through our Studer A800, completely rebuilt by Steve Smith in Nashville, using CLASP to interface with Pro Tools HDX."

Grondin already has plans for expansion. "We definitely plan on expanding into other areas of the warehouse if things go really well," Grondin says. "I'd love to do a B room with an API console."

## ESPLANADE STUDIOS: HOLY CONVERSION, BATMAN!



Meanwhile, over in the heart of the historic neighborhood Tremé, Esplanade Studios recently opened its doors as the largest recording studio in Louisiana, with a focus on sound scoring. The 14,000-square-foot structure—formally a 1920s church, in Gothic revival style—has been completely restored and renovated, with high-end recording in mind.

The highlight of the church is its large pipe organ, donated by billionaire philanthropist, Andrew Carnegie as a gesture to the community in support of the arts. According to studio owner and lead engineer Misha Kachkachishvili, plans are under way to restore the organ to full working status through the use of Federal grants in 2014.

"I fell in love with this special building and knew it was where I needed to relocate my studio," Kachkachishvili says. "The original 'welcome' sign that greeted the congregation in the past is lit once again today."

Designed in-house, the building consists of three studios: Studio A has a 3,400-square-foot live room with 30-foot ceilings, able to accommodate up to a 70-piece orchestra; four isolated rooms; and two amp rooms in full view. This space features a Steinway B piano. The control room—once an upstairs choir loft—has been converted into a 1,500-square-foot chamber, featuring a fifth iso room and is home to the 1970s Trident TSM console that once resided in A&M Studios in Los Angeles. The studio also features a large collection of vintage and modern microphones, outboard gear and instruments.

Studio B, to be completed by end of year, is targeted at mixing, mastering and overdubbing, and has an iso booth for voice-overs. Studio C is a private studio for composer Jay Weigel, who is currently working on film scores. There is an additional 3,000-square-foot space downstairs allowing for special recording projects, including live or private concerts, with an anticipated opening date in 2014.

Kachkachishvili sums up the philosophy behind Esplanade Studios: "Our goal is simple," he says. "To make the best-sounding music possible. We are focused on the success of New Orleans as a major destination for sound scoring for years to come."





# PHIL TAN

## Atlanta-Based, Worldwide Reach

**D**on't be fooled by the quiet, near-studio demeanor. Beneath the surface, hit-making mix engineer Phil Tan has an assassin's knack for timing, a humorist's sense of wit and a ninja's ear for subtle power. He has worked on records that have sold more than 250 million units worldwide, and he has three big-time Grammy Awards: Best Contemporary R&B Album, 2005, Mariah Carey's *The Emancipation of Mimi*; Best Rap Album,

2006, Ludacris' *Release Therapy*; and Best Dance Recording, 2010, Rihanna's *Only Girl (In the World)*.

A 1990 graduate of Full Sail, he moved to Atlanta and interned at Jon Marett's Soundscape Studios, where he met many of the people who helped drive his career and remain collaborators today, the most notable being Jermaine Dupri, right at the start of his explosion. Also, LA Reid, Outkast, Rico Wade and Organized Noize, Dallas Austin, and .38 Special's Jeff Carlisi, with whom he recently started Hightone Talent, an incubator for artistic talent. Their first is a musician: 17-year-old Hallie Jackson.

He works mainly alone, with tracks delivered to his private studio in all types of formats. He works in Pro Tools, both TDM and HDX, with Avid D-Control, monitoring through Dynaudio M-1s and JBL LSR6332s (both powered by Brystons), and RCF Mytho 8s. Mic pre's: John Hardy M-1, Millennia HV-3B, Universal Audio LA-610. Compressors: Tube-Tech CL-1B, Manley Variable-MU. Stereo bus EQ: Inward Connections DEQ-1. Most-worked plug-ins: UAD-2, SoundToys, Softube, McDSP, Waves.

### **So, Usher and Ludacris? Both amazing, very different.**

Very rarely can you treat vocals the same exact way on every song, even for the same artist. You have to make decisions based on the key of the song, the tempo, the arrangement and probably most importantly, the emotional tone.

Usher's more of a crooner, so I tend to think smooth—or smooove as they say here in da South—but he's very dynamic, so I'd use a bit more compression so the quieter parts don't get lost. Luda has one of the biggest voices ever—he has no problem filling up a track. Sometimes, if there are other artists featured on a track with him, one of the more difficult tasks is to make sure he doesn't overpower them. He wants the listener to feel like he's right in front of their face, spit and all, so I wouldn't compress him as much. A lot of automation on both of these guys, both from a level/volume stand-

point, as well as plug-in parameters, like threshold and release, depending how hard/soft they're delivering the lines and what needs emphasizing.

### **Mariah and Rihanna?**

Much of the credit for the mixes I've done for these two incredibly accomplished artists must go to them, who deliver outstanding performances time and again, and their recording engineers—Dana Jon Chappelle in the earlier Mariah albums and Brian Garten today, and Marcos Tovar for Rihanna. My job is simply to make them shine. Brightly. And not get in the way.

My thought process—or lack thereof, because I try to focus more on how things feel, not necessarily on technical correctness—is really the same as I would approach any other vocal performance, male or female. What is the song trying to communicate? That message has to come across. If it's fun and playful, let's make sure that comes across, and the supporting parts in track that contribute to that enervation are properly featured. If it's quiet and personal, let's try to make the listener feel like the artist is singing/speaking directly to them—usually less processing in this case. If it's grand and glorious, let's make it sound massive, like you're listening to a performance in a concert hall.

### **Beefing up drums. Do you commonly use real and sampled instruments? A hybrid?**

Depending on what the drum sound needs to do in the track, I may use EQ, compression, distortion or combinations of the three to beef things up. SoundToys' Decapitator, Crane Song's Phoenix, Slate Digital's Virtual Tape Machine are some of the distortion plug-ins I use regularly. Just depends on what flavor is called for.

The main difference for me with real vs. sampled instruments is editing and automation. With live instruments, if they're a bit loose, pocketing them may be necessary, so they feel tighter. If it's played live, then chances are the hits aren't all the same levels, so some automation might be necessary. Sometimes you gotta be careful not to overdo all that, though, so it doesn't sound too perfect and stiff.

### **Compression. When, where and why?**

The first reason to compress is for level control purposes. Second is for added tone or character—the Empirical Labs Fatso is one example for this purpose; I use the UAD-2 version. Third is for effect, like side-chaining. Fourth is for gluing, like on instrument subgroups or the mix bus—here I typically use the SSL bus compressor and Shadow Hills Mastering Compressor, again the UAD-2 versions. Parallel compression can be helpful, too, especially if you need something to stick out just a bit more.

### **Any thoughts on quality? Either in recording or in consumer delivery?**

I get asked all the time, "What can I do to get good mixes?" My answer is usually, "Get good recordings of your parts." If you're mainly working on programmed beats, take the time to pick good sounds that complement each other, both musically and sonically. If you play an instrument, take the time to learn mic techniques—choices and placement—and experiment until you get the right sound.



# "Once you try the Audix i5, there's no turning back."

*Richard 'Dickie' Chappell, Music Engineer - Peter Gabriel*

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*Paul Hager - Front of House Engineer - Miley Cyrus*

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*Howard Burke - Front of House Engineer - Little Feat*

"When JD Blair (Shania Twain) is out with us, I use only Audix mics on his kit. I have also used them for Derico Watson (Victor Wooten Band) for years. For full clarity, body, and accurate snare reproduction, I trust only the i5. Audix has never let me down!"

*Jack Trifiro - Front of House Engineer - Shania Twain, Victor Wooten Band*

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*Anthony Roberts - Monitor Engineer - Tower of Power*

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*Joe Amato - Front of House Engineer - The Gaslight Anthem*

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*Charles A Martinez - Front of House Engineer - Steely Dan*

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*Jason Decter - Front of House Engineer - Blink 182*

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World Radio History



# SESSIONS: SOUTHEAST U.S.



## BLUE ROOM STUDIOS, ATLANTA

Blue Room Studios is in the process of building a new world-class live room designed by Eber Designs. The 500-square-foot room is scheduled to open in August...Meanwhile, Atlanta rapper Young Jeezy has been working on his fifth album under Island Def Jam with producer/recording engineer Tony Rey. Rey recently recorded and mixed a track featuring Usher; other producers include Drumma Boy, Major, Shawty Redd and Justice League.



Doppler Studio E

## DOPPLER STUDIOS, ATLANTA

Grammy Award-winning hip-hop artist Nelly has been busy at Doppler Studios producing and performing on an upcoming release, with engineer Max Unruh in Doppler Studio A...Bluegrass/Southern rock artist Barry Waldrep was in Studio E with producer Brian Brinkerhoff and engineer Paul Lanny laying tracks for his upcoming fall release, on the SSL 4000E with Hammond B-3.



## PARHELION, ATLANTA

R&B/soul group MPrynt have been tracking vocals for an upcoming Motown release with producers Oak and Pop Wansel, studio owner/chief engineer Ralph Cacciurri, and assistant Andrew Rosen...Boy-band/Nickelodeon stars Big Time Rush, with engineer Miles Walker (assisted by Rosen), mixed their recent release, *24/Seven*.

Pictured L to R: Huel (MPrynt), Fah (MPrynt), Buddha (MPrynt), Ralph Cacciurri (engineer), Ty'e (MPrynt), Oak (producer), Juan (videographer)



Pharrell Williams and Miley Cyrus

## CIRCLE HOUSE STUDIOS, MIAMI

Singer/songwriter/producer/rapper Pharrell Williams has been producing the *Descipable Me 2* soundtrack in Studio C, with Andrew Coleman engineering. Williams has also been producing Miley Cyrus in Studio C, again with Coleman engineering.



Luciano "Looch" Delgado (MBRS president) in the control room.

## MIAMI BEACH RECORDING STUDIO

Cuban salsa band Conjunto Impacto (featured in the upcoming documentary *Sweet and Sour Salsa*) was in the studio with producers Gus Cuervo-Rubio and Mario Perez, as well as engineer Luciano "Looch" Delgado, assisted by Evangelos Koutsouradis.



PJ McGinnis and Cris Cab working on the *Red Road* EP.

## STUDIO 26, MIAMI

Island/Def Jam artist Cris Cab's latest free EP and upcoming album were recorded in Studio A, with producers PJ McGinnis, Wyclef Jean and Mike Posner; McGinnis also served as recording/mixing engineer. Equipment included an API 1608 console, a Manley Variable Mu stereo limiter/compressor, a Neve 1073 DPA mic preamp, a Universal Audio LA-3A audio leveler and a Lawson 251 mic.

## PIETY STREET STUDIOS, NEW ORLEANS

Jazz pianist Monique DiMattina worked on her latest, *Nola's Ark*, with producer Mark Bingham, tracking engineer Wesley Fontenot and mastering engineer John Fischbach (Bingham also served as mix engineer...Indie rockers the Yeah Yeah Yeahs did some writing sessions for *Mosquito*. The band produced the album, with Fontenot on engineering duties.

## Needlz Builds Home Studio With the Help of GIK Acoustics



Multi-Platinum, Grammy Award-winning producer/engineer/composer Needlz recently enlisted GIK Acoustics to help with the design and acoustic treatments for the final space in his new home studio.

Atlanta-based Needlz's list of production credits includes a slew of industry heavyweights such as 50 Cent, Jermaine Dupri, Drake, Lil Wayne, Fabolous, Swizz Beats, Redman, Ludacris, Young Buck and Scarface. He also co-wrote and produced Bruno Mars' Grammy-winning single "Just The Way You Are."

With GIK Acoustics' help, the result of Needlz's new space is a room with an accurate sound perfect for mixing and producing singles. "I've noticed a big difference in my mixes since I placed GIK Acoustics' products in my studio," Needlz says. "We've been able to mix our records with more confidence knowing that they will translate well in other environments. This was a great investment for my studio."



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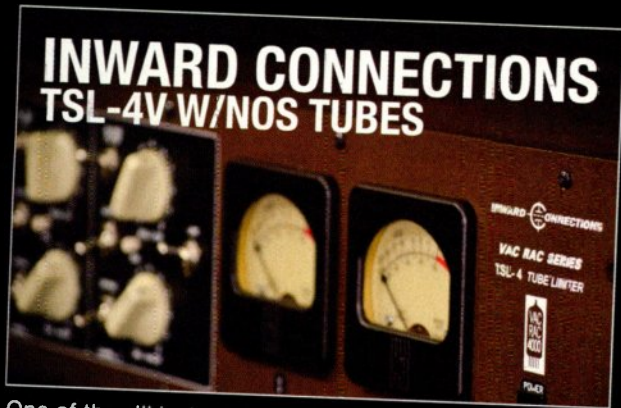
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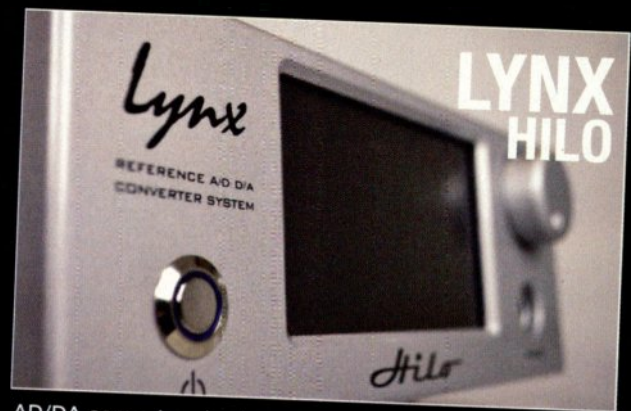
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## LOVING THE CHALLENGE OF LIVE



**R**ecording live ensemble performances is my drug of choice, and I emphasize it in all of my classes. I typically invite former and current students to participate and/or

observe, and they have reciprocated by bringing me into the loop to plan, consult and be on hand for the good times and the free adrenaline rush!

The sessions are held at two locations: the Minneapolis Media Institute (MMI, [mediainstitute.edu](http://mediainstitute.edu)) and the Institute for Production and Recording (IPR, [ipr.edu](http://ipr.edu)). MMI is the former Flyte Tyme studio complex (home to Jimmy Jam and Terry Lewis for about 20 years), located in Edina, a suburb of Minneapolis; the latter is in Downtown Minneapolis. The session detailed below took place a few months back at MMI.

### ORGANIZATION

Technology has made it easier for one person to wear all the hats, which is fine for track-at-a-time and overdubs. But sometimes it's worth reminding students that they don't have to give a solo performance. I encourage them to assemble a team, to assign roles and to plan in advance—music pre-production and tech days—to reduce the day-of-session stress and surprises. Someone has to be in charge of listening to the performance, another to listen for and get good sounds, and another to make sure it is being recorded as mapped out. It also helps to have a dedicated studio assistant.

### PREPARATION

What was interesting this time around—in hindsight, albeit—was how much cross-pollination happened among four seemingly random sessions. The test session was singer-songwriter Matt Guerin, an IPR student whose band came to play for my MMI class (at 8 a.m.!). This not only allowed us to test the recently repaired Otari MTR-90-mkII, but at the last minute, one of the students, Shayne Hawkinson, volunteered to play bass. Shayne would be the Pro Tools operator on the upcoming rockabilly session and would later invite me to engineer a tracking session for Ella Reid, for which he was both producer and bassist.

The big four-day event was Ross Kleiner and the Thrill. Ross and his producer/engineer, John Rausch, were in my Studio Maintenance/Ba-



*Fig. 1: The Turner Model 87 ribbon microphone. The inset shows the ribbon John Rausch corrugated and installed.*

sic Electronics class at IPR several years ago. My analog class recorded Ross playing “Summertime Blues” to 4-track, with John on drums.

Four years ago I connected John with Dan Wilson, a client who was looking for an in-house engineer. They hit it off very well and have been working together ever since. The experience has been great for John, who generously shared some tricks, techniques and attention to detail with Shayne and Joe Speranzella. Both John and the band graciously accommodated the many visitors, students, instructors and friends who dropped by to observe.

The goal was to use as much vintage equipment as we could find and record to analog tape, using no click, no headphones and mostly ribbon mics. John produced, the two of us shared engineering and technical chores, Shayne was the PT operator and Joe ran the multitrack. (We recorded simultaneously to analog tape with PT as backup.)

### TECH TIME

During the years John spent in my shop, we worked on several microphones and assorted bits of recording gear. John has continued to experiment with condenser and ribbon mics, including fabricating ribbons for the mics he repairs, including a Turner Model 87 ribbon (see Fig. 1). The tuning for

this mic yielded a unique sound that just happened to perfectly complement the stand-up bass.

### ANALOG TAPE OPTIONS

For the past eight years, I have been recording at 15 ips, using IEC EQ, 3 dB to 6 dB above 250 nWb/m (depending on tape). The Studer A-827 VU meters include three peak LEDs that are very helpful for recording percussion—VU meters are too slow to be accurate. The Otari MTR-90 mkII has no peak LEDs, so it was necessary to listen to playback while recording to avoid pushing too hard. Because the tape machine (in input) was feeding Pro Tools, we took advantage of the 192's meters as well as the “virtual meters” to keep an eye on the peaks.

### WHAT, NO HEADPHONES?

We worked very hard to get a vocal-friendly instrument balance in MMI Studio A so that Ross could hear everyone without straining his voice. Drums and bass were in the room, and the guitar amps were



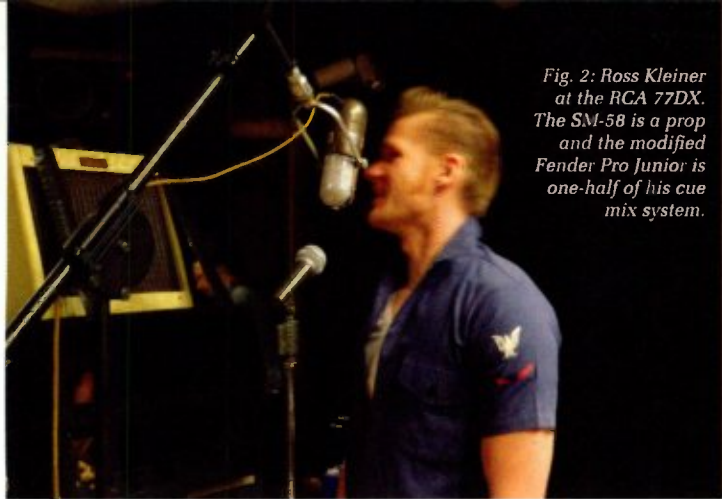


Fig. 2: Ross Kleiner at the RCA 77DX. The SM-58 is a prop and the modified Fender Pro Junior is one-half of his cue mix system.

Photo by Steve Yeager

placed in the booth with the doors open. We used a myMix cue system in a very unconventional way by feeding the power amp of my modified Fender Pro Junior to drive its own speaker as well as the woofer of a Yamaha NS-10 (*sans* crossover). It was basically a monster set of headphones that allowed Ross to move around and feel the band in the room (Fig. 2). Not having tweeters reduced the chances of feedback in that frequency range.

### BEGGED, BORROWED AND RENTED

I had posted the session dates on Facebook as Invite Only. My friend Chuck Anderson immediately volunteered his vacuum tube gear. We used his Echoplex into a Fender spring reverb to feed two Tweed Era guitar amps, a Gibson and a Tweed Deluxe (courtesy of Kevin Bowe), on which we respectively placed a Reslo ribbon (dirty amp) and the RCA 44A (clean amp). To hedge his bets, John rented an RCA 77DX and a pair of Dynaudio BM-15A monitors from themiclocker.net. From IPR we borrowed a pair of Coles 4038 ribbon mics, one of which was used as the drum overhead, my EV 664A on kick and Chuck's Sony C-37A condenser on snare. Nate Reitsma is a friend-of-a-friend who loaned us a pair of Royer R-121 ribbons (room) and an Avalon 737 that I had repaired.

MMI recently upgraded its control room to include preamps by API (kick and snare), Avalon, DW-Fearn (Royer), Great River (guitars), Millennia and Shadow Hills. My rack was also in the mix, and it included an Altec 438 (bass amp) and 1612 (OH), Neve 1272 with JLM mod (OH), UREI LA-3 and a Great River transformerless preamp.

Ross had his heart set on re-creating the raw sounds of 1950s rockabilly, where the vocal mic and/or preamp are just at the edge of distortion. My modified Pultec MB-1 did exactly as I had hoped. I brought several tube options, one in particular for the output amp, to reduce headroom just enough to elevate even-order harmonics. I also added a simple optical limiter circuit to keep the signal within the sweet distortion zone.

Images and sound samples can be found at: <http://www.tangible-technology.com/music/ross/rock-a-dex.html>

### BALANCE

Both Ross and Ella got an album's worth of tracks to work with, and I felt very lucky to have been able to contribute to the process. To share my skills and interests with students, especially the ones who see the value in the technical aspects, is very rewarding. For John, it was especially validating to see how he had integrated new experiences on top of the foundation. He brought the same sense of adventure, of constantly trying new things, of not being afraid of leakage and being open to "happy accidents." True, experimentation is easier to do in a classroom where you don't have the pressure of hourly billing, but these sessions were just as intense as the real deal, with paid musicians and a narrow window to get the job done. I always end up real proud of the students. ■



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# RobairReport

## MAKE IT HARD ON YOURSELF



By Gino Robair

**P**eople like to complain that there is too much music being created. When I hear musicians say that, it often sounds like sour grapes: What they're really saying is that they want their music to take up the bandwidth. However, I like the fact that anyone can make music now, whether it's with an app, an arranger keyboard or a loop-based DAW. The more the average person knows about the music-making process, the better they'll appreciate the artists who really know what they're doing. And in the age of shrinking music sales, we could use a bit more of that.

Nearly anyone who spends a little time with programs such as Propellerhead Reason or Apple GarageBand finds that they can make something enjoyable fairly easily and quickly because of the way software engineers have designed the tools. These kinds of apps are not specifically designed for a paint-by-numbers experience, but there is enough content available that novices can use it that way if they desire. Meanwhile, someone like Brendon Small can score an entire season of *Metalocalypse* in his apartment using Reason, and Erykah Badu can develop an innovative album in GarageBand. No matter how such programs are used, they allow us to make more music more quickly if that's what we want.

As a result, we often let the tools dictate how we work and what kind of music we make. With so many choices of DAWs, we like to believe that we gravitate toward the one or two that best fits our needs. But the anecdotal evidence I find shows that people stick with the first product they learn. Other products seem inferior or annoying; they do not work the way we expect them to because we're used to one particular system.

Of course time is money, and workflow is about maximizing productivity against time. For example, we usually end up with a preferred signal path for vocals because we can predict how it will behave, and we know it's a winning formula. And the clock is ticking, so we follow our routine until something forces us to change it.

But what about our own projects? Should we mindlessly use the same setup when it comes to a creative endeavor that is off the clock, so to speak? Do we become a prisoner of all of the time-saving workflow enhancements that were added to our favorite DAW because of "user demand"? Workflows that—to put it bluntly—removed a portion of the creative part of our imagination by making things too easy? Or should we continue to tell ourselves that we are working within the DAWs limitations, despite it being an

increasingly streamlined system.

As a writer, I use a word processor because it allows me to write and edit large projects quickly. But I'm often in a place where I can't get to my laptop, so I have to rely on some other form of capturing and working with ideas. Often, that means using a piece of scrap paper and a pencil, which at that moment feels like the most inconvenient and inefficient way to work. Yet, it's at those times that unusual and interesting things happen because, for me, the combination of pencil and paper opens up ways to capture ideas that go beyond organized groups of letters and numbers.

There was a time, not long ago, when it was difficult to make music. Not just good music—any music. You had to be proficient enough on an instrument to get your ideas across. There were fewer choices in every aspect of the MI and pro-audio markets, and decent gear was expensive. The technology didn't allow you to do everything—write, record, mix, master, replicate and distribute a song—all by yourself. At nearly every point, there was a struggle, and conquering this adversity had the potential of making the project that much stronger.

Who the hell wants to deal with that anymore?

In a conversation with art critic David Sylvester in 1966 (*Interviews with American Artists*, Yale University Press), composer John Cage said that his "concern for the irrational, and ... belief that it is important to us in our lives, is akin to the use of the koan in Zen Buddhism:" That "by asking a question which could not be answered rationally," we transcend our normal "observation of relationships and our rational faculties."

That immediately brought to mind the story Bruce Swedien tells of how Michael Jackson doubled vocal parts: Rather than stand directly in front of the mic to get the optimum tone and volume level for each new overdub, he would position himself at different distances and off-axis positions to simulate the placement of voices in a choir. These days, one would try to re-create the sound of an off-axis voice using a plug-in, but the differences in performance between the various takes requires an old-school approach.

At a time when creativity is becoming increasingly outsourced to the engineers that design our gear, the challenge is to get past the interface and re-connect with the barriers that kick our ass and make us find interesting solutions to problems that naturally occur. It may slow us down, but the results are likely to give our work a chance to stand out against the multitude of projects that are generated on autopilot. ■



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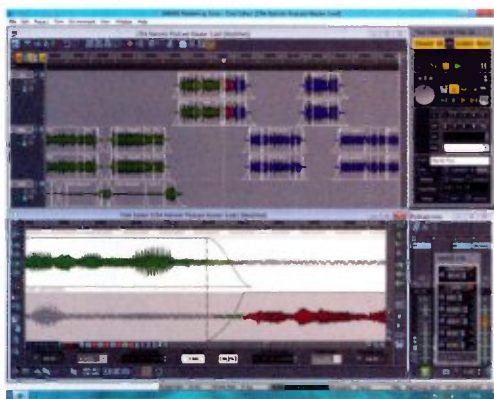
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# Tech // new products



## PRISM SOUND SADiE 6 PRO AND LITE

### DAW for the Road

Prism Sound has released two new versions of SADiE 6 ([sadie.com](http://sadie.com)): SADiE 6 Professional (\$1,660) and SADiE 6 Lite (\$785). The new versions are aimed at users who wish to edit on the go and who don't require audio restoration, networking or mastering capabilities. SADiE 6 Lite retains the core capabilities of SADiE but with a restricted track count, while SADiE 6 Professional can handle unlimited tracks and incorporates one year of free support, including all major updates. Both versions feature non-destructive editing tools such as the Playlist, Trim and Region editors and also provide a slimmed-down core set of iZotope VST plug-ins and SADiE channel strip processing.



## SANKEN CU-55

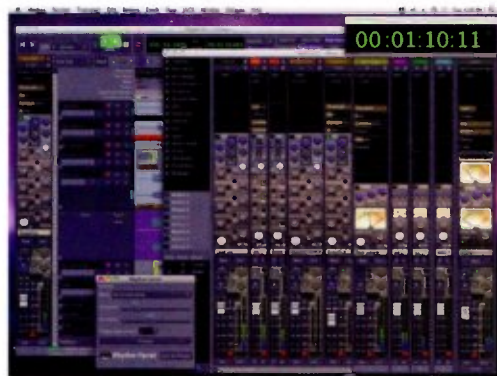
### Affordable Side Address

Sanken's new CU-55 ([sanken-mic.com](http://sanken-mic.com); \$1,195) features a 16mm capsule with a resonant chamber that has been tuned to create a perfect cardioid pattern, and is omnidirectional below 50 kHz. This new-generation microphone is flat at 90 degrees and flat on-axis, with very little proximity effect. The CU-55 uses the same diaphragm material as Sanken's CU-100 and CUW-180 mics and is targeted at recording acoustic instruments such as guitars, cello, harp and piano. Other features include a -10dB attenuation switch for two sensitivity settings, flat frequency response (40 Hz to 20 kHz) and maximum SPL of 137 dB at 1% THD.

## AMBIENT TINY LOCKIT

### Timecode Generator/Transceiver

Ambient's Tiny Lockit ([www.ambient.de](http://www.ambient.de); \$891) features a rock-solid, highly accurate, temperature compensating timecode generator. Features include a variable timecode output level for recording timecode on an audio track, MIDI timecode interface with MTC/LTC conversion, support for all frame rates, bright OLED display, built-in antenna and operation for up to 12 hours on two AAA batteries.



## HARRISON MIXBUS VERSION 2.3

### New Plug-Ins, Faster Workflow

Harrison ([www.harrisonconsoles.com](http://www.harrisonconsoles.com)) has released Mixbus Version 2.3, a free upgrade to the company's full-featured DAW with "True Analog Mixing," a combination of Harrison's world-renowned sound and features in an affordable, knob-per-function interface. Workflow enhancements include several new shortcuts for faster bus assignments, user-driven editing and keymap overhaul, making Mixbus more intuitive. Plus, this upgrade includes three new high-end plug-ins for evaluation and purchase. Mixbus for new users is \$219 and available from the company's Website.





## BLUE CAT AUDIO LINY EQ 5.0

### Eight Bands, No Waiting

The Liny EQ from Blue Cat Audio ([bluecataudio.com](http://bluecataudio.com)) is an 8-band linear phase graphic equalizer with very low latency and comprehensive visual feedback. Features include latency less than 3 milliseconds, a fully customizable user interface, new EQ shapes, single and dual channel modes, a new presets manager, Windows AAX support, multiple display sizes, new MIDI and automation mapping capabilities, and much more. The plug-in is available as a stand-alone (\$219) or as part of Blue Cat's Master Pack (\$599), a bundle that includes Blue Cat's mastering plug-ins.



## ROYER LABS R-121 LIMITED EDITION MIC

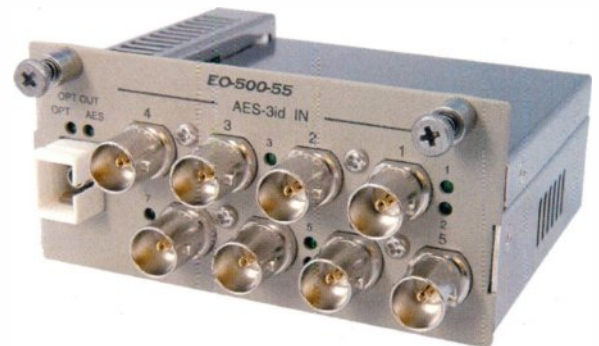
### Happy Birthday Ribbon

Royer Labs ([royerlabs.com](http://royerlabs.com)) is celebrating 15 years as a manufacturer of ribbon mics with the release of the 15th Anniversary R-121 Limited Edition Ribbon Microphone (\$1,395). Along with carrying the original Royer black logo, the R-121 Limited Edition also ships with a special 15th Anniversary Certificate of Authenticity personally signed by David Royer, the chief engineer after whom the company is named. The R-121 features high SPL capabilities, no internal active electronics, low residual noise, and a field-replaceable ribbon element.

## CANARE AES-3ID CONVERTERS

### From This to That

The AES-3id optical converters (\$2,100) from Canare ([canare.com](http://canare.com)) multiplex and optically convert AES signals from up to eight ports (16 audio channels), allowing them to be transmitted over long distances. The converters are Dolby E-compatible and come in eight types (distinguished by emitted light wavelengths from 1471nm to 1611nm) and use coarse wavelength division multiplexing (CWDM) to allow AES signals from up to 128 audio channels to be transmitted via a single fiber-optic cable.



## SYMETRIX SYMNET XCONTROL

### Expander for Install

The SymNet xControl (\$TBA) from Symetrix ([symetrixaudio.com](http://symetrixaudio.com)) is designed for use with the SymNet Edge and Radius family of DSP products for conferencing and paging applications. For those installations where Edge and Radius' eight onboard control inputs and eight logic outputs require expansion, xControl provides an additional 16 inputs, 16 outputs and two RS-232 ports. SymNet Composer open architecture software provides comprehensive setup and management of xControl. The half-rack devices can be mounted side-by-side or may be surface-mounted; all hardware is included, as is a PoE injector for direct powering.





# New Sound Reinforcement Products



## AVID S3L LIVE CONSOLE

### Scalable Power, AVB Connectivity

The S3L from Avid ([avid.com/US](http://avid.com/US); \$18,000 to \$28,000) comprises three main hardware components that go with the Pro Tools (and AAX plug-ins), Venue and VenueLink software. The 16-fader S3 control surface is slim and

lightweight (14 pounds). It offers 10-segment meters, four analog inputs (two XLR mic/line, two TRS line), four analog outs (two XLR line, two TRS line), two Gigabit Ethernet AVB ports and two USB 2 ports. The E3 engine is a two-rackspace, HDX-powered, floating-point DSP-based device that offers 64 input channels with full processing; onboard 4-band parametric EQ on every input and output channel; 24 aux buses (LCR, plus eight mono matrices and eight VCAs); onboard dynamics; 32-bit floating point processing; plug-in support based on AAX DSP; and direct Pro Tools support with no interface required. The basic system's four-rackspace unit comes with 16 XLR mic inputs with preamps and eight XLR outs, along with four channels of AES3 input/output. There are also 2 Gigabit Ethernet AVB ports, with the ability to daisychain up to four Stage 16 boxes.

## PROBLEM SOLVER



They say a picture is worth a thousand words, but we'll let some of our users add a few anyway.

"The SM57 is perhaps the most useful mic I've ever used, but for drums, not always the most easy to position. The G5790 allows me to capture the sound I need without compromising the placement."

**STEVEN SLATE**  
Slate Digital/Slate Pro Audio

"The best idea since the invention of the SM57 itself."

**BARRY RUDOLPH**  
Rod Stewart, Lynyrd Skynyrd

"The right angle allows such a small footprint and the perfect placement on the snare drum. A simple idea realized beautifully. Way to go guys!"

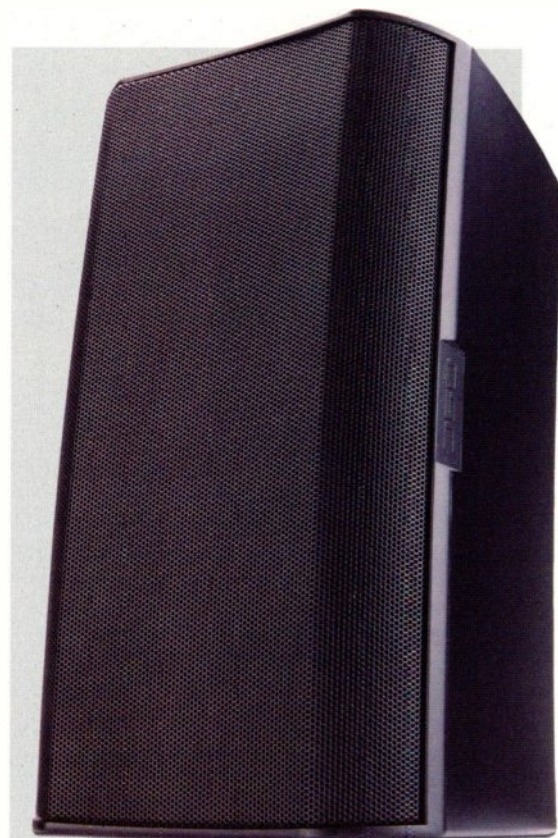
**ROSS HOGARTH**  
Van Halen, The Black Crowes, R.E.M.

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## QSC ACOUSTICDESIGN LOUDSPEAKERS

### Surface Mount Masters

QSC Audio Products ([qscaudio.com](http://qscaudio.com)) has added the S8T, S10T and S12 loudspeakers (\$TBA) to its AcousticDesign Series line of premium surface-mount loudspeakers. Ideally suited for a variety of foreground/background sound reinforcement applications, these new models feature both constant-voltage (70/100V) and low-impedance operating modes and offer an elegant design combined with rugged durability that is perfect for spaces that require high-quality distributed audio. The patent-pending X-Mount (included) enables the loudspeakers to be quickly and securely deployed either vertically or horizontally from a flat surface. Pan, tilt and yaw adjustments further ensure that the loudspeakers can be positioned to minimize impact on any interior or venue sightlines.



# se·lec·tion [ səˈlekSHən ]

noun

1. the action or fact of carefully choosing someone or something as being the best or most suitable
2. a number of carefully chosen things
3. what you get with Vintage King

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## CARTEC FE-Q5

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# Tech // reviews

## DPA MICROPHONES D:FACTO II VOCAL MICROPHONE

Upgrade Brings Broad Wireless Compatibility



**N**ot quite two years ago, DPA Microphones debuted the d:facto vocal microphone, its first mic designed to deliver studio quality for stage applications. The original d:facto could be used wired or with wireless systems from Italian RF manufacturer Wisycom, but the new d:facto II may also be used with transmitters from Lectrosonics, Sennheiser, Shure and Sony. A unique characteristic of the d:facto II is that the same capsule/head grille may be used on either a wireless transmitter or on a wired handle. When I say “same capsule,” I literally mean that the capsule may be removed from a wireless system and moved to the wired handle—as opposed to purchasing a wireless version of the capsule.

DPA offers various “adapters” to mate the d:facto II to the wireless systems, but the term adapter doesn’t really do justice to the technology inside the device. There’s a very high degree of sonic consistency between the wired and wireless versions of

the d:facto II. This is an impressive accomplishment in light of the fact that (a) it’s difficult to predict how the same capsule will behave when incorporated in different RF systems and (b) the capsule requires 48-volt phantom power ( $\pm 4$  volts). Most handheld wireless transmitters are able to provide 5 volts to a condenser capsule, so not only does the DPA adapter step up that voltage to “feed the beast,” so to speak, it also contains circuitry akin to that used in their Compact Series of preamps.

### OUT OF THE BOX

The d:facto II system sent to *Mix* con-

### TRY THIS

The DPA d:facto II has been designed so that the owner can purchase the 4018V capsule and use it on their choice of wireless system or as a handheld unit. DPA manufactures adapters that allow the capsule/head grille combination to be mounted on a variety of handheld transmitters. Simply remove the head grille from the wired handle and unscrew the 4018V capsule. Thread the adapter onto the wireless transmitter, and screw the capsule onto the adapter. Then replace the head grille over the capsule and you’re ready to go. The entire process takes about two minutes.



## PRODUCT SUMMARY

**COMPANY:** DPA Microphones

**PRODUCT:** d:facto II

**WEBSITE:** dpamicrophones.com

**PRICE:** \$899; FAASE2-ewB Wireless Adapter for Sennheiser evolution/2000/9000: \$249

**PROS:** Excellent sound quality, superior off-axis rejection. Versatile system may be used wired or wireless.

**CONS:** More expensive than your average vocal mic.

sisted of the d:facto II wired microphone and the FAASE2-ewB adapter, which enabled us to couple the capsule and head grille to a Sennheiser ew 300 G3 system (this adapter can be used for Sennheiser evolution, 2000 and 9000 Series handheld transmitters). The d:facto II ships in a semi-hard case with separate compartments for the mic, clip and adapter.

Examining the d:facto II's sturdy head grille reveals a three-stage filter that protects the capsule from wind noise and pops: the coarse outer grille and, underneath that, two fine mesh screens. The 4018V supercardioid capsule is intentionally situated as far away from the screens as is physically possible, increasing the screens' effectiveness at filtering wind noise. To reduce handling noise, the capsule mount for both versions sits on a thick rubber cushion, which we found to be very effective. DPA states that the d:facto II can handle SPL up to 160 dB; it certainly did not fold under the pressure of a metalhead screamer, though we didn't actually measure the SPL of his voice (he was too scary). Frequency response of the d:facto II is spec'd at 100 Hz to 16 kHz  $\pm 2$  dB, with a 3dB "soft" boost at 12 kHz and a highpass filter down 3 dB at 80 Hz.

## INTO THE FIELD

We started out with the d:facto II on its wired handle, using it for a variety of singers (mostly male) with a variety of consoles (Avid Venue, Yamaha M7CL and PM5D, Midas Heritage). If there's one word we'd use to describe the sound of the d:facto II it would be smooth. The mic consistently produced crisp, clear vocals that cut through the mix without ever sounding harsh. From a whisper to a scream, the d:facto II had no trouble capturing all the dynamics we could send its way. In situations where we needed to add compression, the d:facto II did not lose clarity the way lesser mics can, and we found that the mic took EQ very well. On a singer who had what we'd categorize as a smoky voice, a few dB (2.5) of boost at

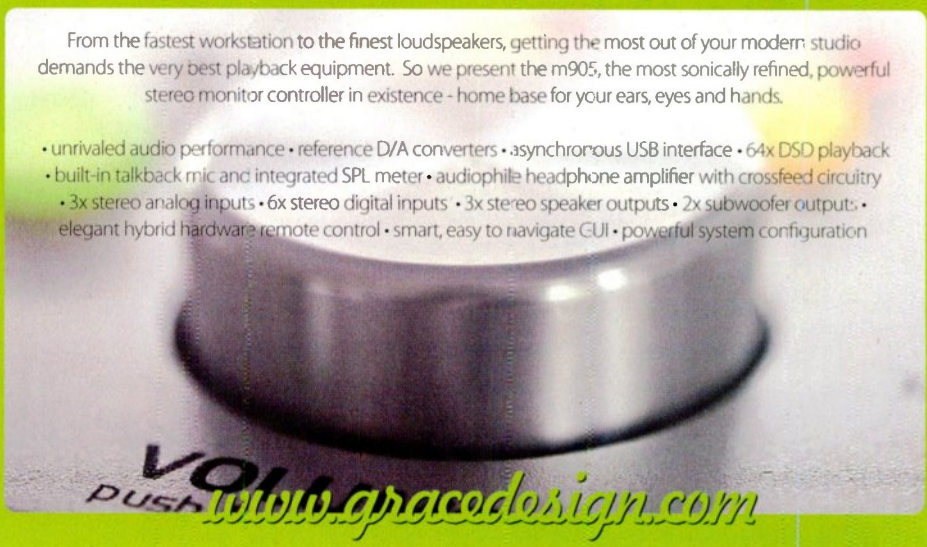


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**- JOE CHICCARELLI**



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**TapeOp Magazine**



**Mercury M76m MKIII**

**"...ultimate 'vintage-style' mic preamp available today."**

**TapeOp Magazine**



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3.5 kHz popped the vocal through the mix. The three-stage filter was very effective at eliminating wind noise, but overzealous vocalists could create pops if they aren't careful. Our solution was to add a HPF on the console channel at around 120 Hz, which helped tame the pops.

The d:facto II exhibits mild proximity effect compared to most vocal mics. This is a good thing when working with singers who eat the microphone—the d:facto II did not get muddy in the lower midrange or boomy in the low-frequency range. One thing we found extremely interesting was the d:facto II's ability to maintain its smooth response when the singer cupped the mic. You may have experienced that "ham radio" sound that results when a singer covers the bottom of the head grille with their hand, but the d:facto barely sounded any different under these circumstances—a refreshing change. The same cupping behavior typically causes a modification in the directional pattern of a cardioid, hyper- or super-cardioid microphone, almost ensuring that the mic will feed back. While we did find that the d:facto II was somewhat more prone to feedback when cupped, the phenomena was not nearly as severe as with other microphones. Apparently DPA's engineers have worked a bit of magic regarding pattern control.

That magic was also evident in the microphone's off-axis rejection and off-axis response. For example, when used on a singer/songwriter who was playing acoustic guitar and singing at a coffee-house gig, leakage of the guitar into the d:facto II was so low that we could easily balance the two signals (guitar and voice) without any phase issues, and any leakage that was present in the signal from the d:facto II actually sounded good.

#### CROSS CONNECTIONS

After we had become familiar with the sound of the wired d:facto II, we tried it with a Sennheiser ew 300 G3 wireless system (see Try This regarding the changeover). Subjectively, the residual noise level of the wireless system was almost exactly the same as the wired version, with maybe a hair more hiss in the wireless version—none of which was evident under performance circumstances (full disclosure: this was not a scientific test. We compared the two through a P.A. in a quiet

**ONE THING WE FOUND EXTREMELY INTERESTING WAS THE D:FACTO II'S ABILITY TO MAINTAIN ITS SMOOTH RESPONSE WHEN THE SINGER CUPPED THE MIC...THE D:FACTO BARELY SOUNDED ANY DIFFERENT UNDER THESE CIRCUMSTANCES.**

room, with gain adjusted for a similar output from the wired and wireless d:facto II). Tone quality between the wired and wireless versions was virtually identical, the wireless version being perhaps a hair brighter.

Using condenser microphones on a loud stage is a double-edged sword. The same characteristics we love about condenser mics—extended frequency response, wide dynamic range, sensitivity to soft sounds—can make them a liability. If an engineer is not careful regarding placement, condenser mics can capture a lot of unwanted sound spilling from around the stage. That spill can not only cause instruments such as cymbals to change level via the vocal mic, but also to change timbre due to phase issues between the various microphones. Somehow the d:facto II manages to minimize these issues. It's sensitive enough to capture the nuances of a vocal without capturing all the background junk, and what leakage was present in the d:facto II sounded pleasing because it wasn't colored.

#### IS IT MAGIC?

Creating a studio-quality mic for onstage use is tough, but DPA Microphones has created a useful, versatile product that sounds excellent and meets the challenge. The ability to use the same capsule on wired and wireless bodies is (to our knowledge) previously unheard of, and is an attractive feature of the d:facto II—especially for sound companies that want to offer clients wired and wireless options. Anyone looking to purchase a first-class vocal microphone should have a listen to the d:facto II—wired or wireless. ■

*Steve La Cerra is a NY-based live-sound and recording engineer.*



# stand·ard [ 'stan-dərd ]

noun

1. an object that is regarded as the usual or most common form of its kind
2. something established by authority, custom, or general consent as a model or example
3. the stuff no studio is complete without



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## BEYERDYNAMIC M 160

One-of-a-kind super-rugged double-ribbon hyper-cardioid mic



## PELUSO 22 251

A classic and coveted tube mic design with modern enhancements





## GENELEC M030

Active Two-Way Monitor Adapts, Virtually, to Any Room

**M**any contemporary near-field monitors include factory-preset filters that compensate for unbalanced room tone and suboptimal placement, but the Genelec M030 might be the most flexible of the lot. And its down-firing bass ports and superbly beveled cabinet are sure to raise eyebrows.

### STEALTH PRO SPEAKER

The M030 belongs to Genelec's new Music Creation product line, but don't let the M1 designation fool you—this is a rigorously designed monitor suitable for near-field use in a professional control room.

Weighing only 8.8 pounds and measuring a Lilliputian 10.75x7.5x7.5 inches (HxWxD), the diminutive M030 nonetheless makes a striking visual impression. The face and back baffle are rounded on the top and sides, and the top and sides of the enclosure itself are curved. (The Natural Composite Enclosure is made up of an injection-molded, 50-50 blend of Finnish wood and recycled, non-toxic polymers.) Taken with the impressive-looking Directivity Control Waveguide for the ¾-inch tweeter, I expected outstanding imaging free from diffractive effects, and I wasn't disappointed. Two curved slots in the bottom of the cabinet serve as bass ports. Genelec explained that their down-firing orientation was chosen to preserve front-baffle real estate and simplify manufacturing.

Low-distortion, high-output Class-D amplifiers power the M030: 50 W for the 5-inch woofer and 30 W for the tweeter. The crossover sits at 3 kHz. The frequency response is specified as 58 Hz-20 kHz (-3 dB).

The M030's power-management uses a side-chain circuit that senses activity at the input. If it detects no audio at the input for 30 minutes, it then places the monitor into standby mode.

### REAR GUARD

All connections and the power and filter switches are safely recessed on the M030's rear panel. A two-prong, detachable AC cord mates with the mains input. Genelec asserts that the monitor doesn't need a ground wire for the mains cable, as a number of alternative safety features have been engineered into the product to fully comply with EMC and FCC regulations. In combination with the M030's automatic voltage selection for the power supply, the two-prong circuit makes for fail-safe



*The Genelec M030 active monitor features a superb waveguide, down-firing bass ports and comprehensive filtering.*

plug-and-play operation in different countries.

Input connections are via ¼-inch/XLR combo (balanced) and RCA (unbalanced) jacks. Thankfully, the XLR connector latches. (Most other monitors don't include this safety precaution.) Maximum published SPL is a boisterous 103 dB wide open, but a three-way switch allows you to knock the level down 10 or 20 dB. I found the -20 dB setting to offer more than enough steam. People who work in an asymmetrical room or with a digital mixer having imperfectly calibrated, fixed outputs may lament that the M030 has no trim pot for making fine level adjustments between monitors.

Two three-way filter switches bring to light the M030's adaptability to wide-ranging rooms. The Bass Level switch

### TRY THIS

Whether you place your monitors on stands, shelves, tube traps or isolators such as Recoil Stabilizers, make sure you position them so that the front edge of each cabinet is on the forward edge of the mounting surface. Doing so will prevent reflections off the surface that would otherwise cause comb filtering at your listening position.



## PRODUCT SUMMARY

**COMPANY:** Genelec  
**PRODUCT:** M030  
**WEBSITE:** genelec.com  
**PRICE:** \$1,390/pair (list)  
**PROS:** Sounds great. Flexible, practical filtering (monitor is adaptable to diverse rooms and setups). Combo jack latches XLR connector. Automatic voltage selection.  
**CONS:** No level-trim pot. Pricey.

provides shelving cut that starts at the crossover, slopes gently down to roughly 100 Hz and then cuts uniformly down to the low-frequency tuning point. The switch's alternate settings yield 0, -2 or -4dB response at 100 Hz. Genelec suggests that you use the -2dB setting for free-standing placement (that is, away from walls) in a damped room or when placing the M030 on a nearby table or other reflective surface. The -4dB setting is suggested for freestanding placement in a reverberant room.

The other three-way filter switch I alluded to is simply dubbed "EQ." Its Bass EQ setting slopes down from roughly 400 Hz to 150 Hz, below which it provides 2 dB of attenuation down to the LF cutoff. Genelec suggests using this setting in conjunction with the Bass Level's -4dB setting if you must place the M030 in a corner. The alternative Tabletop EQ switch position remedies its namesake's debasing influence by activating a relatively broad bell-curve filter that provides 3 dB of attenuation at 230 Hz; the filter's effect extends more mildly down to 100 and up to 600 Hz. (The Genelec 8040 and 8050 include the same Tabletop EQ filter.) The EQ switch also has an Off setting.

By now you no doubt get the central point of this review: The M030 adapts to both live and dead rooms and placement in corners, on tabletops or near walls—everywhere but on Mars!

### LISTENING TESTS

I placed a pair of M030s on Primacoustic Recoil Stabilizers that were situated on the shelves of my Omnirax MixStation console workstation. (Recoil Stabilizers are an outstanding solution for decoupling monitors from shelves, preventing sympathetic resonance in upper-bass and low-midrange frequencies.) The front of my control room sports an Acoustic Sciences Corporation Attack Wall—a modular arrangement of tube traps that forms a continuous acoustic wall—that tightens up the bass impulse response at my mix position.

With all filters switched out, the M030s sounded very good overall and, in some ways, superb. The transient response and degree of high-frequency detail were positively outstanding. Imaging was also excellent. Low-frequency extension was admirable for such a small monitor.

I had a couple of quibbles. Background vocals, pedal steel guitar and fiddle sounded slightly understated. I also heard very slight flabbiness in the upper-bass range that made drums and bass guitar sound just a hair tubby.

Activating the Tabletop EQ opened up the sound beautifully, clearing out mud and tightening up the bass without audibly diminishing the monitors' comparative and flattering bump in low-bass response centered at 75 Hz. Now the highs sounded absolutely airy, and drums were slammin'.



BVs, steel and fiddle, however, still sounded a bit receded. I don't want to overstate this, because the effect was subtle.

I tried activating the Bass Level filter at its -2dB setting in lieu of using the Tabletop EQ. Doing so made the M030s sound slightly warmer but less open in comparison. It sounded like the Bass Level filter didn't cut quite so much at 200 Hz as the Tabletop EQ did, and it moderated higher frequencies in the midrange band; a supplied frequency plot corroborated what I was hearing. My preference for the Tabletop

EQ notwithstanding, if the Bass Level filter had been my only available option, I would've been impressed with the sound it conferred. And I should note that the spectral balance at my mix position has a very slight buildup around 200 Hz (probably due to reflections off my mixer's top surface), making the Tabletop EQ a good counterbalance. This reinforces my point that, no matter what challenges your room acoustics and equipment orientation pose, the M030 probably has at least one filter setting (or combination) that will allow it to sing in your nest.

Just for grins, I tested the M030s with my home-entertainment system, deliberately putting one monitor very near a corner and the other only one foot from the back wall. I used Genelec's suggested filter settings for these placements and streamed "Classic Albums: Steely Dan: Aja" on Netflix. (Those of you who knew the late engineer Roger Nichols will enjoy seeing the bittersweet footage of him in this excellent documentary.) Even with such heavily compromised placement, the M030s' spectral balance sounded fantastic (with no external equalization applied). Unfortunately, my TV can't adjust levels at its speaker outputs, and I pined for level-trim pots for the M030.

### BEST OF BREED?

It goes without saying that the M030 is a small monitor with limited bass extension. (Its sibling, the M040 extends bass response down to 48 Hz.) Unlike most other small near-fields on the market, however, the M030 doesn't attempt to be what it's not. You won't have to deal with hyped, ballooning bass and fight to hear through attendant frequency masking in the midrange, a spectral imbalance that plagues most small near-fields because they strive too hard to sound large.

Yes, you'll need to add either a subwoofer or a pair of full-range monitors to your setup to check that the bottom octave and a half of your mixes has the proper balance. The M030 excels where it should: giving you the all-important "small picture." They're a bit pricey, but the M030 is one of the best-sounding small-format near-fields I've heard to date. ■

*Michael Cooper (myspace.com/michael-cooperrecording) has written over 400 articles about pro audio over the past 25 years.*



## MILLENNIA MEDIA HV-37

Dual Preamp Unit Brings Clear Sonics, High Gain Ribbon Mode



The HV-37 has a Ribbon mode offering +10 dB more gain.

**T**he fundamental design philosophy behind everything that Millennium Media produces is that for certain types of recordings, the gear shouldn't get in the way of the sound. When trying to capture true sonic reality, the use of warm, colorful, harmonic-generating circuitry lies to our ears and changes our interpretation of the sound. This effect, at times, can be pleasant and "musical"; however, when skilled musicians are playing expertly crafted instruments in a great-sounding room, there is no need for extra musicality, and instead accurate capture is preferable.

The original Millennium HV-3 excelled at this goal and became a favorite for orchestral and other acoustic recordings. When a circuit of comparable sonic transparency was packed into 500 Series unit, the HV-35 created a good amount of buzz. Now, conceivably out of a desire to accommodate engineers who haven't bought into the whole 500 Series craze, the HV-37 offers a pair of HV-35-like circuits in a single-rackspace unit with a built-in power supply.

### ON THE SURFACE

The rear panel of the HV-37 features a pair of XLRs for input and a pair for output. Aside from that, there is an IEC Connector to feed the internal switching power supply. The front panel features two sets of controls, one for each of the two channels. The buttons, lights and connections are the same as those found on a single HV-35. Each channel has a 1/4-inch TS input jack for instrument connections, a button to toggle between the rear XLR input and the front-panel instrument input, and a +48V phantom power button (runs at a true 48V  $\pm$ 2VDC). Switches avoided in earlier Millennium designs, to avoid the potential impurities imparted by contacts and relays, are now available on the HV-37. These include a polarity flip and an 80Hz rolloff.

The whole gain-adjusting structure is a slight departure from

the earlier offerings in this line. Instead of the 36-position stepped gain circuit, there is a continuously variable gain trim with "high gain jump near full clockwise." Not many sound sources required that amount of gain boosting, however, it made a noticeable difference when I throttled the pre to record Foley sounds. Like all of the other HV-3s, the HV-37 has such high input headroom that there is no conceivable need for a pad on the input. The -15 dB pad instead attenuates the output of the unit to avoid clipping AD converters downstream when hot signals are passing through.

The HV-37 conforms to the Millennium notion that even the best transformers will add some amount of coloration to the passing audio. Because of this, the HV-37's transformerless amplifier uses an AC-coupled circuit with a series of capacitors to block the DC phantom power current. When there is no need for phantom power, the "ribbon" button bypasses the AC-coupled circuit and switches to simpler DC-coupled circuit path from input to output. This path is intended to be even more transparent than the phantom-power-ready path and comes with an added 10 dB boost to help bolster moving coil and ribbon-type dynamic mics.

### IN USE

When using the HV-37 to record acoustic guitar with a pair of Mojave MA-101a mics, the preamps really shined. The image was realistic, and the upper midrange was wide and open. The amount of detail in the top end was very impressive. Compared to a more colorful API 212 pre, which pushed

### TRY THIS

When recording guitars plugged directly into the HV-37, it was beneficial to have the guitar feeding an actual amp as well. Feeding the guitar to a record track in Pro Tools to record the dry sound, and then outputting that track from a USB interface to a Reamp could produce some serious latency in the amp sound. Instead, most modern USB interfaces have an option to feed analog input signal (pre the A/D process) to a hardware output. This zero-latency monitoring option would be perfect for this Reamp application.



## PRODUCT SUMMARY

**COMPANY:** Millennia Media

**PRODUCT:** HV-37

**WEBSITE:** mil-media.com

**PRICES:** \$1,439.99 street

**PROS:** Clean, transparent sound with high headroom.

**CONS:** Continuously-variable gain control rather than a stepped control.

a bit of midrange, it seemed that the less crowded-sounding Millennia lent itself to a clearer and fuller bottom end, as well. Using the same setup on a brass section, the overall sound was impressively detailed, with a realistic stereo image. While the sound collected was a little on the edgy side, this might have been an honest reflection of the loud brass in a small room.

I used the HV-37 with a Neumann TLM 127 to record Foley cloth sounds, and even with the preamp cranked to full volume, I never heard any noticeable hum or circuit noise. It was as clean as could be, and the sound from that combo was fantastic. I would listen in the studio and come back to the control room to hear a virtually identical sound. Other than a time using the Benchmark MPA-1, I've never heard a preamp exhibit such transparency when recording Foley. My only complaint was that despite the extra gain boost attained with the preamp maxed, I was still wishing for about another 10 dB when recording low-level Foley sounds.

Connecting a guitar to the front-panel instrument input was an interesting experience. I was impressed by all of the complex information in the top end that I had never noticed before. The sound was snappy and tight all around. My only problem was that circuit was a bit lacking in personality. It wasn't very musical until I processed the signal with a plug-in, or re-amped it through an actual guitar amp. I shot it out against a Chandler Limited Little Devil, and it felt like both were equally open in the midrange, but the Little Devil warmed up the lows and added a little personality to the top end. Overall, this seemed to be a more inspiring tone. However, when I connected a bass to the HV-37, it did a great job of displaying a full bottom end while letting the intricacies of the top end distinguish themselves. If you've been looking for a solution to clarify a muddy instrument, this might be just what

you're looking for. Beyond that, though, the biggest strength of the HV-37 would be the fact that once re-amped, the clarity of the circuit really shone through and really made the amp'd guitar pop through the mix.

I did experience one hang-up when recording a guitar with hot pickups through the front-panel jack with the guitar's volume controls all the way up and the gain control of the preamp all the way down. Even when engaging the pad, fast, loud power chords were still clipping the converters on a number of interfaces that I connected to the output of the HV-37. I fed the signal to the line-level input of my Sound Devices USBPre2 and pulled back the input gain, and heard sparkingly clean sounds. To that end, it seemed that the preamp itself wasn't distorting, but the output was too hot to be A/D converted cleanly without another volume control in between.

### BY THE NUMBERS

Despite the fact that opening the chassis of the HV-37 revealed a pair of HV-35s with a switching power supply, we shot the HV-37 against the HV-35 on the APx525 and predictably found nearly identical results. The most significant difference, however, was that the HV-37 exhibited roughly 10 dB of improved signal-to-noise ratio over the HV-35 powered by an original API Lunchbox. This proved that the build and the isolation of the power supply from the amplifier circuit seemed to be very well executed.

### SHOULD I BUY ONE?

As far as a no-nonsense mic preamp for recording orchestra or live performances, Millennia's 2-channel HV-3C prices out about \$400 higher than the HV-37 and offers stepped input control, ensuring precise stereo matching. The HV-3C also boasts marginally better specs on paper. On the other hand, if you've been after the Millennia sound but have been turned off by the lack of typical conveniences on the HV-3C, like the roll-off and the polarity flip, then this is the box for you. The ability to capture reality now and flavor it to taste another day is a commodity that is easy to appreciate, and the HV-37 provides the perfect go-to preamp to achieve that goal. ■

*Brandon Hickey is a Chicago ex-pat engineer specializing in studio recording, post-production.*

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## FOCUSRITE SCARLETT 18I20 USB INTERFACE

18x20 I/O with DSP Mixer/Router, Word Clock



**T**he Focusrite Scarlett 18i20 is a 1U, multichannel USB 2 audio interface with 18 audio inputs and up to 20 outputs, and it could be thought of as the USB version of the Focusrite Saffire Pro 40 FireWire/Thunderbolt interface. It has the same eight Focusrite preamps and front panel controls and is the only model in the Scarlett line to offer a BNC word clock output. The unit is also iOS-capable using the Camera Connection Kit—not included.

### IN AND OUT

The 18i20 has MIDI in/out jacks for distributing MIDI data, 24-bit/96kHz AD/DA converter chipsets, and works with any DAW by way of the included Scarlett MixControl software version 1.3—a virtual 18x20 DSP mixer/router that runs in modern PCs and Macs.

There are eight Neutrik XLR Combo input jacks that will handle balanced microphones plus TRS balanced and TS unbalanced line-level 1/4-inch inputs. All eight inputs use Focusrite preamps with up to 60 dB of gain. Eight ADAT Lightpipe digital inputs and a stereo S/PDIF bring the count to 18.

The first two inputs are on the front panel with switches for: -10dB attenuator in/out and high impedance Instrument (DI) changeover buttons. Phantom power is switched in two groups of four inputs, 1-4 and 5-8. A set of eight green and red LED trees indicates input signal presence and/or clip at any of the eight analog mic/line inputs.

The back panel's 20 outputs start with two balanced TRS/

TS analog main L/R monitor line outputs, eight more balanced analog TRS/TS outputs, an S/PDIF stereo out and ADAT Lightpipe for eight more digital outs. At sample rates 88.1/96kHz, ADAT ins/outs are halved at four each.

Like the Saffire Pro 40, the 18i20's front panel has monitor Dim and Mute buttons and individual volume controls for the stereo main monitors and two separate headphone jacks.

The front panel also has green LEDs to indicate power, USB connectivity and word clock sync lock either internally or from an external digital input source. Source and configuration of these features are programmable within MixControl.

### MIXCONTROL DSP MIXER/ROUTER

MixControl routes and mixes up to 18 input sources with a latency specified at lower than 1.4 ms. The Mixer section has nine stereo faders and a stereo master fader, and they each will unlink (split) into two mono faders—up to 18 mono faders or in any combination of stereo and mono.

All faders have a pan pot, mute, link/unlink, solo and PFL buttons.

### TRY THIS

The 18i20 offers a way to connect your outboard analog processing gear to your host-based DAW during mixing or re-recording.

First, I routed stem outputs of the song I was mixing into MC's mixer in zero-latency mode and built my stereo mix.

I elected to use the outputs of MC's Mix 3 and Mix 4 mixes as mono sends to my 1176LN and dbx 165 limiter/compressors, respectively, by using the monitor routing section: Mix 3 to Line Output 5 and Mix 4 to Line Output 6—rear panel line level outputs of the 18i20.

The outputs of those units would go back into the 18i20 as "Anlg In"—analog source inputs in the main mix. Because both the stems and the processed audio arrive together, latency is not a worry.



## PRODUCT SUMMARY

**COMPANY:** Focusrite Novation Inc.

**PRODUCT:** Focusrite 18i20 USB Interface

**WEB:** focusrite.com

**PRICE:** \$499

**PROS:** Easy setup, intuitive, great sound, MixControl version 1.3.

**CONS:** Needs a more powerful headphone amp.

Input sources from the eight analog inputs, 10 digital inputs and up to 20 outputs from your DAW are selectable via pull-down menus. Any input or output already in use is grayed out in the dropdown, precluding any routing conflicts.

Master faders are assignable up to eight mono mixes or any combination of stereo and mono mixes (a stereo mix uses two). You can rename, save and copy mixes from one mixer to another for quickly creating amended versions of your main monitor mix for alternate mixes and/or “more me” headphone mixes.

The Routing section works globally across all saved mixer configurations. It is for connecting analog inputs, DAW audio sources and mixer outputs directly to any of the 20 physical outputs of Scarlett—be they analog, ADAT or S/PDIF. The Device Status Section indicates: sample rate, sync source/status—internal or external clock coming in on the S/PDIF or ADAT Lightpipe, and USB connectivity. For Windows users, there is a pull-down menu for selecting the ASIO buffer size here.

The Monitor Control section has an onscreen volume control, mute, dim, and L or R mute buttons. You can control the level of both the monitor speakers and the headphones together or independently—virtually or from the front panel controls. You can also elect not to control monitor level and put out full level to an external monitor controller.

Enabled by its numerous outputs, 18i20's MixControl has eight Monitor Presets—preconfigured monitor routing outputs for: mono, stereo, quad, 2.1, 5.1 and 7.1 surround, and multiple sets of monitor and headphone monitoring. Any output can be muted when needed.

### SCARLETT À LA MODE

There are three basic routing modes for Scarlett's operation. All modes are customizable to your own specific needs and can be named, stored and recalled.

For initial recording, the DAW Tracking mode routes your DAW's stereo output to the main monitor outputs. All inputs are monitored from within the chosen DAW Application.

The Zero Latency mode routes mixes developed in MixControl's stereo mixer directly to the monitor and headphone outs. You can route a stereo “in the box” mix or multiple stem mixes from your DAW for overdubbing and do numerous monitor mixes within MixControl. In either case, while in Record, monitor the tracks in Record directly in MixControl to avoid the latency of your DAW app.

Mixing mode routes DAW Tracks to line outputs of MixControl—all 20 DAW tracks are simultaneously available as physical outputs—good for in-the-box mixing using an external analog summing unit or multiple analog outputs for mixing on a console.

### INSTALL, CONFIG, RECORD, MIX

I used Pro Tools HD 10.3.5 running in a Westmere 8-core Mac Pro, OS 10.8.3. I installed MixControl version 1.3, which requires OS 10.7 or above. Although not supported, I found it worked fine running in OS 10.6.8.

After connecting the L/R Monitor outputs directly to my powered monitors, in Mixing Mode whatever in the box mix I have coming out of

Pro Tools I/O A 1-2 goes directly to my monitors. Great for quick setups, Monitor speaker volume is controlled by the 18i20's front panel control, which cranks up/down the GUI's large Monitor knob when the HW Control button is switched on.

As an engineer used to recording and mixing in Pro Tools HD 3 Accel systems, I found it easy to use MixControl once I got into the routine of muting tracks I'm recording in PT's mixer and monitoring them directly along with the rest of the already recorded tracks within MixControl's

mixer to maintain zero latency.

Another workflow change was getting into the habit of storing MixControl setups by song name and mode (mix, tracking, overdubbing, etc.) within the song's Pro Tools session folder. This “snapshot automation” method also stores the particular monitor/headphone requirements of the musicians, singers and producer during tracking and each subsequent overdub.

I also started to use my HUI controller much more to control PT for punching in and for transport control—this leaves my mouse for full-time control of MixControl.

### LET'S GET TO IT!

I recorded a singer with a new Cathedral Pipes Seville Active ribbon mic. The Focusrite preamp was a good match for this mic, with plenty of gain and smooth sound. I recorded at 96kHz/24 bit, and for overdubbing I recalled my last mixer setup that uses the Zero Latency mode. I used the 18i20's first input channel on the front—it automatically shows up as A1 in Pro Tools' interface list and “Anlg 1” in MC. I set the output of the new PT track to A13 and put it in record-ready.

We punched in a lot, and I could easily balance the volume of an already recorded vocal track to the live vocal by selecting channel 13 fader in MC's mixer, making its input “Anlg In 1” (Analog 1) and renaming it “Mic Input Mon.” Next to that I renamed a channel “Lead Voc” and set its input to DAW 13 for playback of the vocal in PT. This worked great for my singer who likes to hear herself live as well as what's already recorded at the same time—just make sure you mute the PT track when you go into Record.

### SOLID SCARLETT

With my computer's FireWire 800 bus free to record and play audio from external drives, I found the Scarlett 18i20 an excellent multichannel interface that offers tremendous value and good sound. I especially like the sound of the mic preamps and the near-infinite creative possibilities and the glitch-free operation of the MixControl software—which is rock solid and the best version yet I've experienced. The well-written manual has plenty of configuration setups and ideas, including monitoring routing for up to 7.1-channel surround.

Scarlett comes with Ableton Live Lite DAW; Scarlett VST/AU/RTAS (no AAX yet) plug-in bundle with an EQ, compressor, reverb and gate; and Novation's Bass Station soft synth, including more than 1 GB of royalty-free samples from Loopmasters. ■

*Barry Rudolph is an L.A.-based recording engineer.*



## YAMAHA CL1 DIGITAL MIXING CONSOLE

Sonic Stunner With Plenty of DSP, Versatile Routing

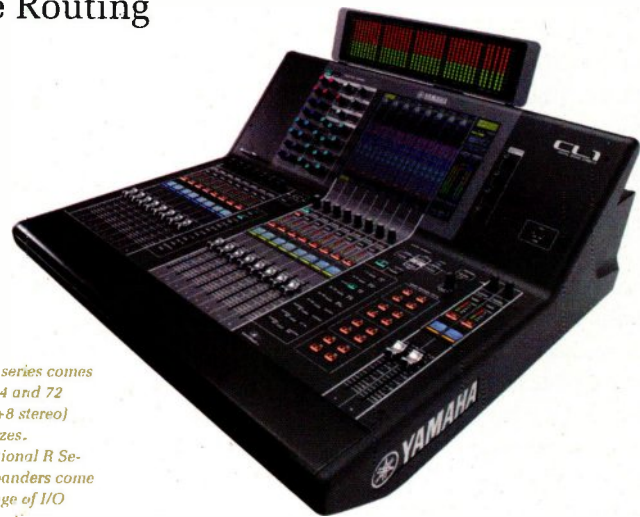
**T**he CL Series marks Yamaha's introduction of a new generation of digital mixing consoles, raising the bar a few notches above its predecessors, which include the M7CL, LS9 and the venerable PM5D. The CL Series consists of the CL1, CL3 and CL5, the three desks differing only in channel capacity, fader complement and metering. All models feature the same 8-fader Centralogic user interface, two-fader master section (one L/R and one Mono), eight analog Omni inputs and eight analog Omni outputs on rear-panel XLRs.

The CL1 we reviewed provides 48 mono and eight stereo channels under control of the Centralogic section and 8-fader "left" section (see specs for info on available configurations). Additional rear-panel connections include MIDI and word clock I/O, AES/EBU output, Ethernet ports for the onboard Dante network interface and three mini-YGDAI expansion slots. The console has an IEC connector for its onboard power supply, plus a port for connection to a redundant outboard supply. A meter bridge for the CL1 is optional and may be added at any time.

Expanding the analog I/O of any CL system requires either a mini-YGDAI card or a Rio (Rack I/O), a variety of which are available from Yamaha. Eight Rios may be controlled via the Dante network using standard CAT5E or CAT6 cable, either in daisychain or redundant configuration, but up to 24 units can be easily accessed from the CL interface, and maximum channel count is determined by the capabilities of the desk (a network switch is not required for daisychains). CL Series desks are capable of streaming 128 channels of digital I/O (64 in and 64 out) via the Dante network, at sample rates up to 48 kHz. Each CL console ships with a license for Audinate's Dante Virtual Soundcard (DVS) software, enabling your computer to see the Dante network as an audio interface.

### VERSATILE I/O

Yamaha supplied the CL1 with a Rio 1608-D (16 analog in/8 analog outs, all XLR), forming a 24x16 system. When configuring, it's important to be aware of the difference between an input (a console channel) and a port (a physical connection). An Omni port may be directly "patched" to an input channel, whereas a Rio port must be patched via Dante bus to an input channel (ditto for the outputs). After a day of poking around the routing system, downloading DVS and Dante Controller software, getting the licenses installed, etc., I re-initialized the CL1's memory. The CL1



*The CL series comes in 48, 64 and 72 mono (+8 stereo) fader sizes. The optional R Series expanders come in a range of I/O configurations.*

booted and displayed the message "Device Type Conflict," with the choice of Close or Jump To Dante Setup. I jumped. Dante Setup showed Rio 3224-D for devices 1 and 2 (the default). I changed the first to Rio1608-D and set the second to No Assign. The third device slot showed DVS (Dante Virtual Soundcard) indicating that the system recognized my MacBook on the network. Clicking Auto Setup in the Dante Input Patch automatically assigned the Rio1608-D inputs to Dante buses 1-16 and thus to channels 1-16, and my MacBook's outs via the DVS to Dante buses 17-48 (and by default to channels 17-48). All good. Since I did not need the DVS outputs for the club gigs I'd be doing, I repatched Omni inputs 1-8 to channels 17-24.

Taking a cue from experience with the M7CL and LS9, I thought the last two Omni outputs might default to carrying the L/R bus, so I connected them to a pair of powered speakers—and there was sound. Kudos to Yamaha for (1) carrying over the OS, and (2) having designed a very user-friendly OS in the first place. I assigned Mixes 1 and 2 to 1608-D outputs 1-2, and patched these to a power amp feeding wedges for monitor mixes. Any output bus can feed any Omni port or Dante bus, and may be assigned

### TRY THIS

The CL1 allows you to save and recall EQ and dynamics settings via on-board library. To save an EQ curve, first tap on the EQ in the Selected Channel Screen. The EQ Popup Window will appear (you may have to tap twice depending upon where you touch the screen). Click the On button and make your EQ adjustments. Then press the Library button and a list window will appear. Use Encoder number 1 in the Centralogic section to move through the list until a blank slot is highlighted and press Store. A naming dialogue will appear. Enter a name, click Store, then OK, and the EQ setting will be stored to the library. The same procedure can be used to store dynamics settings.



## PRODUCT SUMMARY

**COMPANY:** Yamaha

**PRODUCT:** CL1 Digital Mixing Console

**WEBSITE:** yamahac.com

**PROS:** Excellent sound, incredible routing versatility, comprehensive onboard processing.

**CONS:** Dante audio network will not operate at 44.1 kHz with Mac OS.

to multiple ports simultaneously. If, for example, you need to route the L/R bus to the P.A. mains and a bar or restaurant system, you simply assign the L/R bus to an extra pair of outputs and run them to the bar (which is what I did after my first night of playing with those I/O routings). Patching can be saved with a console file, provided the option With Dante Setup and I/O Device is clicked in the File Save/Load dialog.

The 1608-D serves as a stage box, so I put it in a small rack for transport and onstage protection. Initially I used Omni outs 7-8 for the L/R outputs, but on other gigs I routed the L/R outs to 1608-D outs 7-8, requiring no more than an Ethernet cable from the mix position to the stage. (No copper snake to carry!) To facilitate communication during soundchecks I patched a talkback mic into the CL1's front panel (under the armrest). Any input may be used for Talkback, and Talkback may be routed to any output. No menus. Very convenient.

### INTUITIVE OPERATION

The CL1 is extremely easy to use—especially if you've mixed on Yamaha's other digital desks. The Centralogic section calls up banks of 8 in or out channels, while the selected channel section provides access to almost all channel parameters without paging (you do have to toggle the 16 rotary mix encoders between send levels for Mixes 1-16 and Mixes 17-24/Matrix 1-8). Touching a section on the screen zooms on that parameter. For example, if you touch the on-screen EQ knobs a graph opens showing the EQ curve. The same is true of Gain, EQ, HPF, Dynamics 1 (gate), Dynamics 2 (compressor), Insert, DCA and Mute Assignment. Settings may be saved and recalled via library (see Try This).

You can leave the effects rack home when using the CL1. Four virtual effect racks each contain eight processor slots fed from any bus or inserted on any channel. Normally FX sends 1-8 feed the Standard effects rack while the Premium rack effects are used for patching via inserts. The Standard effects are basically a boatload of Yamaha SPX2000s, capable of generating delay, reverb, flange, chorus, pitch shift and many other

*Continued on p. 74*

# YAMAHA CL<sup>1</sup> IN-USE

By Wes Maebe

I had two shows booked in to mix FOH and record a new UK soul singer.

The venue's console wasn't going to cut it for me to mix the band, set up monitor mixes and multi-track both shows. A few weeks earlier, I'd been invited to visit Yamaha headquarters in Milton Keynes to test drive the CL Series.

I felt right at home within minutes. The CL has the functionality of the LS9 and the workflow, layout and big-boy attitude of the M7CL, all poured into a slick and ergonomic desk. I immediately spec'd it for my upcoming shows.

On show day, I had the console and a Rio1608-D I/O rack to rig. With the CL, there's nothing more straightforward. One Cat5e (or Cat6) cable is all it takes, and all your ins and outs have been plumbed into the console. All I had to do was take the XLRs from the house multicore, feed them into the Rio, Ethernet the Rio into the console, and voilà! We got sound.

When it came to the recording part, once again, things couldn't have been simpler. This is where the Dante-enabled functionality comes into play. I have Dante Virtual Soundcard (DVS) installed on the laptop, and all I had to do was take another Ethernet feed from the CL's secondary port into the computer's Ethernet port. With DVS enabled, I dove into Audinate's Dante Controller, assigned the CL's outputs to my Mac's inputs, and I had all my channels show up in Logic, ready to record—16 channels, one cable!

Rigging this system was fast, giving me loads of spare time to focus on miking up the band, ringing out the P.A. and making sure all monitor feeds were clean and good to go.

The band lineup was pretty standard, with kit (kick, snare, hats, rack, floor, extra snare, overheads), bass D.I., two mono keys,

guitar, acoustic D.I. and lead vocals. Sound-check went smoothly, starting with the kit and bass, guitars and keys to follow, and finishing up with the vocal.

Although I'm a huge analog console fan for live work, I found the CL to be really fast. All the important functions like gain, phantom power, phase and EQ are right on the center section of the desk. Simply select the channel you're working on, and all the functions default to that channel.

There's also access to numerous auxes, buses and DCAs, and the CL comes loaded with some killer effects. In addition to its regular dynamics section, a range of premium-rack plug-ins is also included. The Portico series compressor and EQ sound amazing, and having the UA emulations onboard is a nice sonic bonus, indeed.

Setting up the levels, EQ, dynamics and monitor feeds was a piece of cake. Because you have graphic EQ racks across any output you want, you can fine-tune FOH and all of the monitor sends in great detail without the need for large outboard racks.

Once I'd started bringing up the faders to build the FOH balance, I noticed how big a leap Yamaha's mic pre design had made. The new pre's sound so much bigger and warmer than what I'd been used to on analog and digital Yamaha consoles.

The CL is a fabulously versatile console that takes no time to rig, sounds great and allows you to recall your mixes instantly. That recall function was extremely useful when I walked into the venue a week later. I got the console out of the flight case, connected all the cabling, plugged in my USB stick and loaded my settings. Within 15 minutes I was up and running—an FOH engineer's dream.

Wes Maebe is a UK-based recording, mixing, mastering and live-sound engineer. Check out his work at [www.wesonator.co.uk](http://www.wesonator.co.uk).



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Continued from p. 73

effects. Also included are Yamaha's VCM effects, which feature COMP276, COMP260 and EQ601 (you can guess what those are modeling). Outputs are routed to the eight stereo input channels. If you are willing to sacrifice a stereo-effect return, you can use a stereo channel for patching in a CD player via the rear-panel Omni inputs (which I did for walk-in music). All of these effects sound great, including the reverbs.

Premium effects include models of Pultec EQP1A, UREI 1176 and LA-2A comps, as well Rupert Neve's Portico 5033 EQ and 5043 Compressor. Unfortunately I did not have hardware Porticos on hand for A/B comparison, but they did sound excellent, as did the EQP, which added a beautiful low-end whump to kick drum. A finite amount of DSP resources are available for the Premium effects, most of them requiring one "unit" of DSP. The exception is the U76, which requires two DSP units. When a U76 is loaded, the next rack position down becomes unavailable. This is really not much of a limitation because each Premium effect routes two channels and can be configured as either stereo or dual mono—allowing you to process 16 channels of audio. If you need more effects than are onboard the CL1, you have a problem.

The other two racks hold 16 graphic EQs, processing up to 32 audio channels. If you choose 31-band EQ you get 16 'graphs, but you can opt to trade any of them for two channels of Yamaha's Flex15GEQ. The Flex15 enables 15 active bands across the standard 31 ISO frequencies. Bands that remain at 0 dB are considered unused, and as you adjust a slider, a window indicates the number of bands still available. It's not a bad trade: if you have to hack away at more than 15 EQ bands, you probably have a more serious system problem beyond need of an EQ touch-up. As with the other effects, these EQs can be patched on any input or output bus, and settings may be saved and recalled via library.

I tested the CL1's mix capabilities on a show that had been multitracked at 48 kHz to Digital Performer, played back through DVS. (One important note regarding DVS: it will not operate with Mac OS at 44.1 kHz. Hopefully, Audinate will address this issue.) The CL1 sounded fantastic and responded exactly as I expected. Configuring DCA and Mute groups was a no-brainer as was assigning effects, using EQ or dynamics and storing

or recalling library settings. Yamaha's File Translator software enabled me to import an M7 scene that I've tweaked over the past few years, carrying over almost all settings except the mapping of effect-send levels. The M7's default effect sends are on aux Mixes 13, 14, 15 and 16, while the CL1 uses sends 17-24 for effects. The solution was a simple re-mapping of inputs to the effects rack so that Mixes 13, 14, 15 and 16 fed the first four processors.

Detailing all of the CL1's capabilities would take pages, but here are a few highlights. Additional consoles may be attached to the network enabling, for example, monitor and FOH desks to share I/O. In that case the console with ID #1 controls preamp gain. Once gain has been roughed in, Gain Compensation can be engaged, whereby signal level on the network remains the same even if the preamp gain is changed over a range of  $\pm 24$  dB. Channel insert and direct out points may be moved to several different positions in the signal flow, for example pre- or post-EQ, or pre- or post-fader. I was easily able to multitrack to my MacBook using DVS, assigning the channel direct outs to Dante buses, and setting the direct out points directly after the preamp—and there is an Apply to All Input option so that when you change the insert or direct-out point, you don't have to do it 60 times (Nuendo Live is included in the package). Sends can be stereo-linked for stereo IEM mixes, and the Cue bus can be routed to any output. Every output bus has a 4-band EQ, phase reverse, signal delay and an insert point that accepts any rack processor.

### SOUND PERFORMER

Using the CL1 was an absolute pleasure. It sounded great, was rock-solid and the routing capabilities are mind-boggling. As I have found with other Yamaha digital consoles, the user interface is easy and fast—both important when working under pressure. The preamps are clean with plenty of headroom, and the expandability and processing should be able to accommodate any application. As a bonus, acts that perform with tracks will no longer need a separate audio I/O setup for playback—they can simply attach a laptop to the network and treat the tracks as inputs. I'm not looking forward to sending back the CL1, but I am looking forward to seeing it on the road. ■



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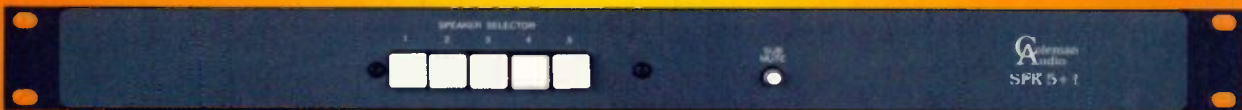
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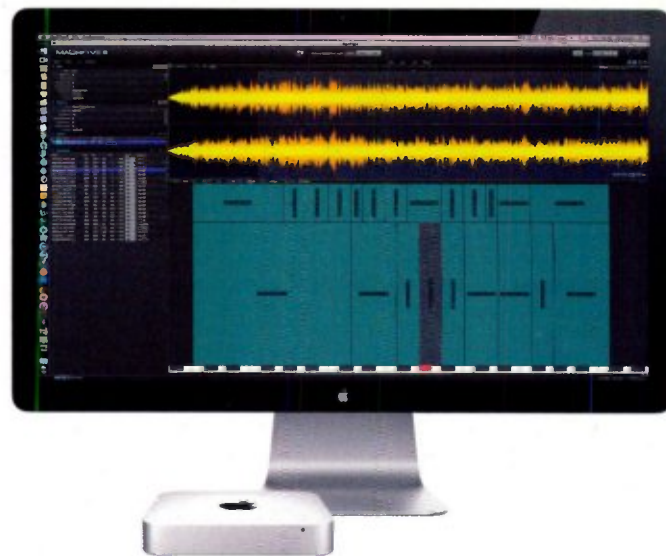
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## TOXIC AUDIO?



By Kevin Becka

I recently drove cross-country from Phoenix to Nashville to start a gig as co-director and instructor at the new Blackbird Academy. I'd made the opposite drive 10 years earlier, moving west to start working for *Mix* after a stint as editor of then-Nashville-based *Audio Media* magazine. Not wanting to wrangle CDs on a road trip, I bought XM Radio, knowing how lonely it gets between towns. XM was only available as an install on higher-end vehicles at the time, so I bought a removable head unit, had it installed in the car and I loved it.

I had reviewed XM for *Audio Media*, and although it didn't live up to its "CD quality" pitch, it was listenable. After selling the car, I never re-upped and hadn't heard satellite radio since. Fast forward 10 years: Sirius and XM Radio, once competitors, are now one company, and either/or comes as a standard option on many car models. My car was one of those, and had a promotional three-month free subscription. So a few days before my trip, I signed up and was looking forward to being entertained on the long drive with just me, my luggage and Rex the Pomeranian.

I was shocked to discover that the quality had taken a considerable nosedive. Frankly, it was awful, and if I had paid for it, I would have asked for my money back. With the old XM, you could hear the quality hit for talk, but music seemed to have higher bandwidth. But not now—talk and music both suffered. On complex musical material, symptoms include squishy transients with no "point," ambience and reverb swimming in a wash of phase oddities, and a collapsed stereo image. And God forbid a talk channel should play music—that's when it really gets painful.

There was one shining exception, though: On Sunday of my trip, the Real Jazz channel played Wynton Marsalis' excellent Jazz for Young People. It was recorded at Lincoln Center and centered on the history of Duke Ellington, his influence on music and his innovations. For just that show, the quality literally took a 50-percent uptick. Ambience was much less phasey, the stereo picture improved and I found myself engaged for the entire time.

All this started me thinking about audio quality and how it affects us—both in our decisions when tracking and mixing and in how we perceive music. Can we as humans be programmed to accept a crappy standard as "good?" Absolutely! A friend of mine did an experiment once that really stuck with me. This is a guy who has an audiophile system in his basement, knows great sound and understands what it takes to produce it. He has an excellent ear.

For three months, he listened to nothing but 24-bit/96kHz audio, vinyl and live music. He wouldn't turn on his car radio, refused to be in a room where music was playing, didn't watch TV and relegated himself to sonic monk-hood. After coming out of his audiophile cave, he put on a CD and was blown away at how different it sounded. Over time, he had trained his ear to a new standard, and to his "tuned" head, CD quality stuck out on the downside.

*I was shocked to discover that the quality had taken a considerable nosedive. Frankly, it was awful, and if I had paid for it, I would have asked for my money back.*

So, at least anecdotally, what you hear on a regular basis can affect your opinion of audio quality, and I'm not talking about the decade-long MP3 lament. No stretch there. But will we pay for quality? I would and have been any time I buy gear for music production. But as a consumer, if XM/Sirius had a higher bandwidth option, I would pay for it. But I don't think they can pull it off. They'd have to drop the channel count, and that's their model for expansion. More channels offered is more channels to sell. How about video? Satellite TV is quickly reaching a zenith. Yes, it's convenient, you can get the east/mid/west feeds to your house and watch the Grammys as a New Yorker, even though you live in Santa Monica. But have you tried navigating channels on a satellite TV system? It sucks. During my trip, in my hotels where satellite is king, I'd turn on the TV to do some channel surfing. Navigation is slow, clunky and dumps you to bad analog if the weather goes bad. I don't see the attraction, especially since 4k is just around the corner, and satellite is toast in that realm. Cable marketers must be jumping for glee.

So where is my perfect future? High bandwidth into my home. The U.S. is way behind countries like Japan and South Korea, sitting in the teens on the list of highest bandwidth offered. After bandwidth comes a great playback system to hear and see these high-quality sounds and picture. Will Dolby Atmos be possible in the home? You bet! It may not be called just that, but the trickle-down will be there. I'd be shocked if next-gen systems didn't improve exponentially. And once OLEDs become affordable, it will be a beautiful day in suburbia. I can watch a concert at 4k, with 96kHz playback on my 60-inch OLED while sipping a margarita in my living room. Even Rex would love it. ■



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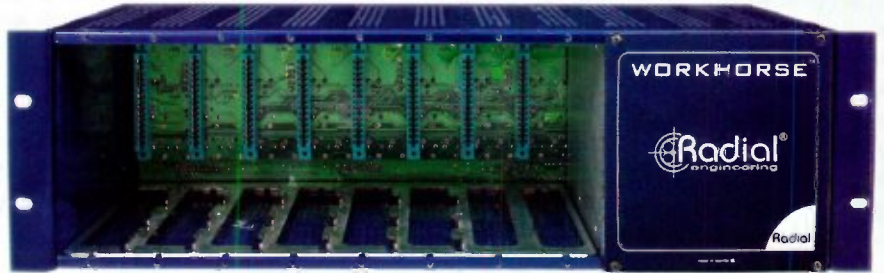
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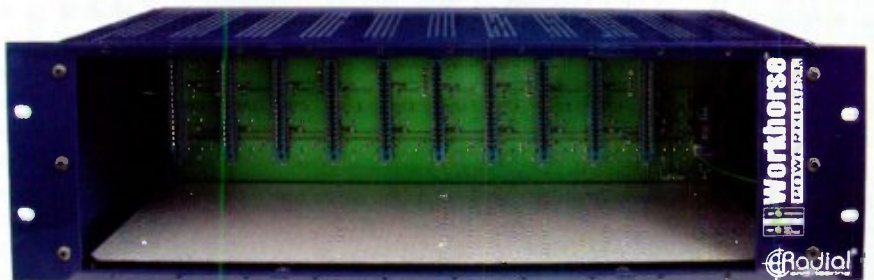
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