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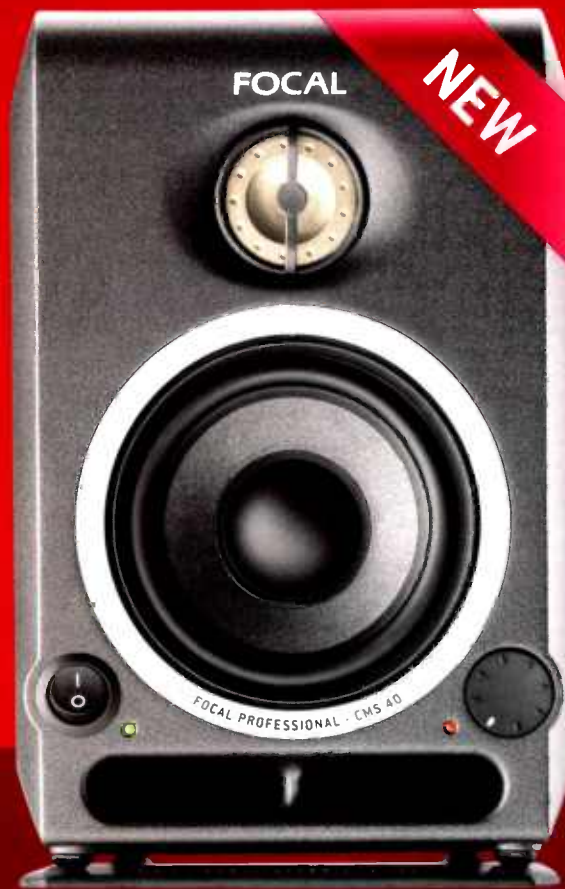
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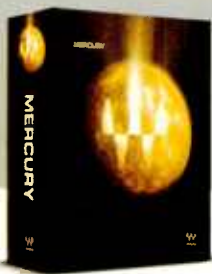
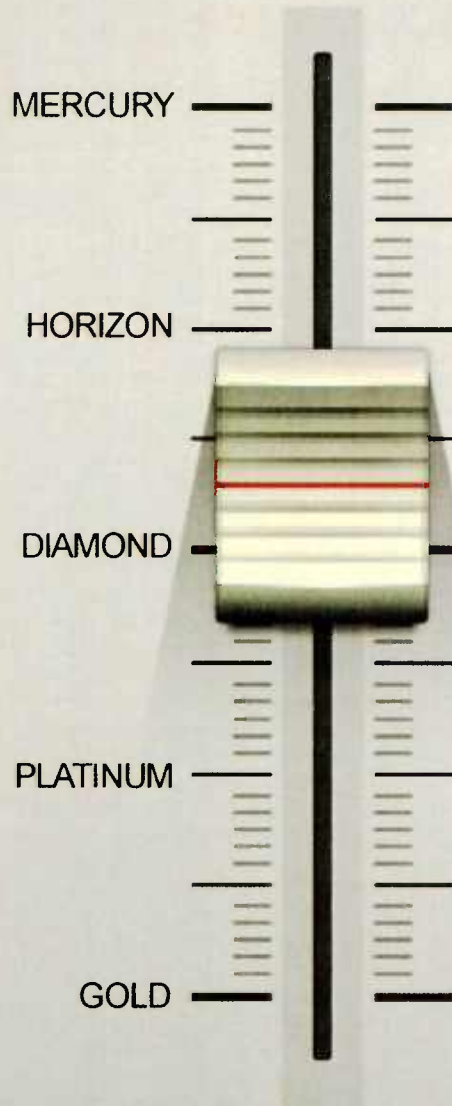
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On the Cover: Ocean Way Nashville Studio A features a custom Neve 8078, Allen Sides monitoring and this magnificent live room. **Photo:** Ed Rode. **Inset:** Paul Natkin.



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The Original Community

I've often wondered how the music industry would look today if Jerry Garcia hadn't passed away in August 1995. It was a much different time—pre-Napster, pre-iTunes, pre-YouTube, pre-Facebook—and money was still flowing through the record business. Budgets were still available for recording and artists went Platinum. Tickets were still relatively cheap, and arenas, sheds and sometimes even stadiums were filled without ticket giveaways. And the Grateful Dead were at the height of their popularity, still riding, but not affected by their post-“Touch of Grey” wave that brought in a new generation of Deadheads from suburbs and college campuses across the country.

Deadheads. The original “community.” An image of bearded, slightly unkempt, hippie-skirt-wearing flower children who never quite grew up. Driving VW vans and selling veggie burritos in the parking lot. Living on reds, Vitamin C and cocaine. Criss-crossing the country and organizing their lives around spring and summer tours. Living for the music. They were later joined by frat boys and soccer moms, babies and grandparents, to form the most motley, unlikely fan base this country has seen. What band wouldn't kill to have that kind of connection with their fans today, to hear the roar from 25,000 after a single note from Garcia launched into “China-Rider.” And they all knew it.

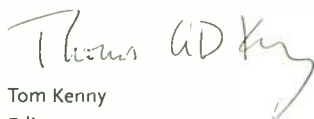
There were no iPhones, no laptops, no MP3s. Hell, many of the fans got their mail general delivery. And still it was the most cohesive, Deadicated fan base around. These were the original tapers, the bootleggers, and the band encouraged it. Fans traded set lists and Maxell cassettes, later DATs. Thirty years later, the marketing minds at the major labels are just now catching up and realizing that maybe it's a good thing to connect directly to fans, to give them what they want, to build that sense of community.

The Dead were never really a studio band. They were a live band, never playing the same show twice, not in nearly 30 years. They recorded them, archived them, and today are slowly re-releasing the catalog to their ever-hungry audience. Would they have adopted USB-delivered same-day recording? Most likely. Would they have fed their audience backstage bonus materials? Most assuredly. Would they have embraced the technology and social-networking platforms that are fueling the new music industry? Most definitely.

The Dead's legacy lives on, not only in the various incarnations the former bandmembers have put together, but in the Dave Matthews Band, Phish, Barenaked Ladies, Pearl Jam, Nine Inch Nails and many more forward-looking, innovative bands that put the connection to fans above CD sales or iTunes downloads. In the music industry today, that direct connection to fans is what it's all about.

...

You will notice in this month's *Mix*, our special issue focusing on Live Sound, that we no longer present our regional columns, “New York Metro,” “Nashville Skyline” and “L.A. Grapevine.” In these challenging economic times, decisions have to be made here at *Mix* same as everywhere else. It was not one we made lightly, and while we will continue to cover the three major markets with the same insights and focus, we would like to pause and give a huge thank you to three of the best reporters and writers any editors could ask for: David Weiss, Peter Cooper and Bud Scoppa. Thank you, guys.



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Ocean Way Nashville Recording Studios

Ocean Way Nashville has been considered world-class since it was founded by studio owner/engineer/visionaries Allen Sides and Gary Belz in 1996. Some newcomers to the Nashville studio community may have considerable dues to pay on their way to the top. However, with two of the country's top studio names behind it, a beautiful design by the owners and studio bau:ton, and the sheer magnificence of the gray-stone church that became Studio A, Ocean Way had little to prove.

Five years after the studio's founding, the facility was purchased by Nashville-based Belmont University, and studio management undertook the admirable task of supporting world-class commercial studio sessions while also playing a role in educating audio engineers, musicians and artists.

Director of operations Pat McMakin, who joined Ocean Way two years ago, insists on excellence in every aspect of the facility. "We work closely with each client to ensure that the planning and execution for their sessions provides an impeccable experience. Our entire staff understands that we are a service business."

One aspect of the way Ocean Way operates that's most gratifying to McMakin is the way the studio staff, led by chief tech Sal Greco, still get their hands dirty and customize gear: "Sal is a terrific tech. He was at Electric Lady for years and at Paisley Park with Prince for a number of years. We don't just buy stuff and plug it in. We hot-rod our desks, monitors, mics and other equipment as needed."

Recently in Studio A was Grammy-winning engineer/producer Jacquire King, who did three-and-a-half weeks of tracking with hot L.A. band Cold War Kids. "Everybody was in the [live] room with their instruments and amplifiers," King says. "We achieved separation with gobos and positioning the instruments—no real isolation—and it was a wonderful, creative environment. The Cold War Kids loved it, and my experience there was perfect. I love the way the room sounds; the tech staff works really hard to keep everything up to speed. The control room is really a comfortable space, and I felt like I had elbow room; I could walk all around the room and understand what we were listening to."

After King's project wrapped up in Studio A, The Judds went in with engineer Jeff Balding, who says, "The old-church vibe with the high ceilings and stained glass, the 'sound' of the room and that



Left to right: director of operations Pat McMakin, chief technical engineer Sal Greco and studio supervisor Steven Crowder at the custom Neve 8078 console in control room A

sweet Neve—there's something about those old Neve consoles that resonates inside me."

Other recent projects at Ocean Way include Blake Shelton with engineer Steve Marcantonio and producer/engineer Scott Hendricks, various orchestral recordings and Troy Olsen working in Studio B with engineer Ben Fowler, who now has an office/workstation at the studio.

Studio B—with its 23x32-foot tracking room, two iso booths and hot-rodged Neve VRP—is Ocean Way's mid-sized studio. "[Studio B] is large enough for band tracking, fully outfitted for mixing or a great place to do overdubs," says McMakin, who also notes that Studios A and B also have Allen Sides' custom-designed Ocean Way monitors.

Studio C recently hosted surround mixing with Fowler, remixing a Lynyrd Skynyrd live DVD and a performance for PBS' *SoundStage*. Room updates over the past year include a new Digidesign ICON, a JBL LSR4328P surround system and a host of other gear. "I wanted to have a room that's fully digital, where we could do surround and post-production," McMakin says. "But the C room still has great vintage stuff. There's a Fairchild, over a dozen varieties of mic pre's and all the major compressors, which provides us with a third price point without sacrificing the quality Ocean Way is known for."

Ocean Way also works hand-in-hand with Belmont's Mike Curb College of Entertainment and Music Business, treating the college as one of the studio's top clients. Classes are scheduled the way sessions get booked, and students have the opportunity to learn in a world-class environment.

"While still at Sony ATV, I chaired an advisory

board for Belmont University's Music Business program for about five years," McMakin explains, "so I'd had a relationship with Belmont over the years and am an alum of the program. A couple of years ago, when they reached out to me to manage the studio, I thought it was a good fit.

"Ocean Way provides Belmont with a resource that few, if any, other universities enjoy," McMakin notes, "and Belmont provides a well-trained workforce who can assist the veteran staffers and help with basic studio tasks. To have a talent like Sal (and other working engineers) teaching students in a real-world environment is invaluable."

McMakin's 30-plus-years' experience engineering, producing and managing Nashville studios (including 25 years with Tree Publishing/Sony ATV/Soundshop Studios) means that he's just as invested in Nashville's music business community at large as he is passionate about running a top-end studio complex. The studio frequently serves as a "town hall" by hosting events for NARAS, AES, AF of M, Leadership Music and many others.

Times are tough in the music industry, but McMakin is convinced that better days are ahead. "We always want our emphasis to be on recording great music. We're willing to do what makes sense to work with engineers and producers to create great recordings," he says. "We will continue to stay competitive while offering the Ocean Way standard of quality. It's going to come back around, and I want Ocean Way to be that studio where people say, 'They were there for us when we needed a great place to record and they were flexible enough to make it work.'" III

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Musikmesse/ ProLight+Sound 2010 **Hits**

With 2,340 exhibitors in 16 convention halls, there was a lot to see at the Musikmesse/ProLight+Sound 2010 in Frankfurt, Germany. Here are *Mix's* Certified Hits—our Top 10 product picks from the show.

DiGiCo's (digico.biz) SD9 is a compact 32-in, 16-out (expandable to 64x32) digital live console that can simultaneously record 56 channels directly to multitrack software or DAW.

Korg's (korg.com) monotron Analog Ribbon synth—a battery-operated, hand-sized unit—has the company's MS-10 and MS-20 analog filters and a ribbon controller borrowed from the Kaoss line. Any audio source can patch into the filter input for more fun. Retail: \$85.

Korg's MR-2 puts ultrahigh-fidelity, 2.8MHz sampling rate DSD recording in a pocket-sized package. The MR-2 can also record in any of the popular multibit formats, from

MP2 and MP3 up to 24-bit/192kHz, and includes software for transferring DSD files to PCM.

The M421 from McCauley Sound (mccauley-sound.com) is a sub box with four 21-inch woofers. Specs include 13,000-watt handling and 143dB max SPL peaks.

Mellotron's (mellotron.com) new Digital Mellotron is loaded with some 100 Mellotron and Chamberlin samples—all in stunning 24-bit uncompressed PCM format.

Designed for front-fill, underbalcony and small theater systems, Meyer Sound's (meyersound.com) low-profile Mina curvilinear array is a 1.5-foot-long, 47-pound package that outputs up to 128 dB.

Version 1.5 of PreSonus' (presonus.com) Studio One Pro DAW software is a monumental upgrade adding some 50 features, ranging from video sync for composing to picture to a built-in SoundCloud

client for uploading audio files directly to the Web.

The name may mean "rude rock" in English, but Rockruepel's Comp. One (www.apke-tontechnik.de) is intended for high-end studio and mastering work. This handbuilt, all-tube, variable- μ stereo/dual-mono compressor was designed by Oliver Gregor and Guido Apke for ultimate sonic purity.

Steinberg's (steinberg.net) WaveLab 7 editing/mastering suite for Win/Mac OS X features an improved GUI for fast audio material handling, new VST3 plugins and restoration tools, a DVD-A burning engine and more.

New for Universal Audio's (www.uaudio.com) UAD-2 platform is the \$299 Massive Passive plug-in, a virtual version of Manley



Labs' popular 2-channel 4-band equalizer, offering radical tonal shaping, delicate vocal shading or subtle mastering enhancement.

For more product and show coverage, visit www.emusician.com/musikmesse_2010.

Thanks to correspondents Mike and Zach Lawson for their input and assistance.



The 'Pro' in Pro Shop

Celebrating its grand opening in March, Pepper's Pro Shop (peppersproshop.com) is a consulting company that aims to help owner/musician/producer/engineer Pepper Denny's clients with getting the gear they need. "I care more about the end result of making my clients sound better, work better, and being able to survive in a market that seems to have become almost an 'anyone can do that' field with a computer and ample time," Denny says. "I am heavily involved in the whole project, from start to finish, and I personally set up and test each system before I consider the project to be done. I do this all for free as part of my service. I have also started a section on my site for bookings. The idea is when you want to really know what the story is, go to the source. By doing this, I feel I can educate my clients even further than I could do by myself, allowing them to be involved with what they are looking to do beyond just a dream of owning a studio, mobile recording company, etc."

Live Nation, Walmart Deal

Live Nation Entertainment has entered into an agreement to partner with Wal-Mart to offer tickets at Wal-Mart stores in select markets across the U.S. About 500 stores will roll out the program in the coming months, including some in Chicago and Los Angeles. Tickets will be available for area sporting events and concerts at Wal-Mart stores in the entertainment department. Pricing and information on available tours were not disclosed.



Charlie Wicks 1945-2010

The founder/owner/CEO of Pro Co Sound passed away on March 11, 2010, after a battle with cancer. Wicks formed Pro Co in the early 1970s to manufacture P.A. speakers and shifted to manufacturing cables and interconnect products in 1974. He was known affectionately throughout the audio industry by his self-proclaimed title of "The Captain of the Universe."

In recent years, Wicks' health impeded his direct involvement in the Pro Co Sound business. Debbe Stephenson, friend and president of Pro Co, said, "While our hope has always

been that Charlie would return healthy and able to run the company he loved so dearly and put so much of himself into, he will remain in our hearts as we continue to carry on his dream."

A dog lover, Wicks was involved in the care and well being of abandoned local animals and formed the organization Canine Safe Harbor to provide care for dogs that lost their families. At the request of the family, in lieu of flowers, please make donations to Canine Safe Harbor, 8171 W. KL Ave., Kalamazoo, MI 49009; www.caninesafeharbor.com

Industry News

New York City-based Fluid added editor Michael Scarpelli to its roster...Rachel Verity joined Fairlight (Sydney) as financial controller...Working with the company since 1988, George Horton was promoted to VP, Western region and Latin America, for SSL (L.A.)...Harman (Northridge, CA) established an EMEA Sales office, with Dave Karlson as senior director of sales...Blue Microphones (Westlake Village, CA) new hires: technical sales representatives Ben Thompkins (Western), Jonathan von Retzell (Central) and Danny Garcia (Eastern)...Mike Torlone is now with One Systems (Nashville) as sales and marketing manager...Meyer Sound news: Jason Rauhoff, technical support/digital products specialist; Michael Maxson, technical support manager; Brandon Rice, trade show coordinator/technical support; and Ellen Juhlin, D-Mitri project manager...New marketing/artist relations specialist at Fishman (Andover, MA) is Corey Congilio.



Michael Scarpelli



Rachel Verity

on the move

Who: Phil Wagner Focusrite Novation Inc. president

My main responsibilities: to grow the Focusrite and Novation brands in the U.S. We will be staffing up in L.A. to provide sales, marketing and training support for our expanding product portfolio.

Previous Lives:

1992-present, SSL president
1990-1992, positions at Trident
1986-1990, positions at Neve
1984-1986, positions at Soundcraft

The Number One reason I love the audio industry is...

The people: Working with the industry's top artists, engineers, producers and great studios is very rewarding.

If I could have been in the wings at any concert, it would have been...

Led Zeppelin at Madison Square Garden in 1973, where *The Song Remains the Same* was filmed.

Currently in my iPod: Shiny Toy Guns, Broken Bells, B.O.B. "Nothin' on You" (featuring Bruno Mars) and Jason Derulo "Whatcha Say."

When I'm not in the office, you can find me...

on the phone or e-mail, entertaining with my wife at home, paintballing with my son, skiing or getting my iTunes server organized



Studio Unknown Update

In the glory days, aspiring to own a super-studio was all the rage—how things have changed! The realities of today's economic climate and industry trends have triggered a dramatic shift in the way studio owners are approaching the future. While smaller studio setups have become more the norm, that doesn't mean that these studios and their owners have sacrificed big goals. We'll introduce you to several owners who have major accomplishments under their belts despite their less-than-grandiose studio environments and staff.

Mix Master Directory Spotlight

This month's featured listing from the new online-only Mix Master Directory (directory.mixonline.com/mmd)

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Whole Lotta Theremin

MUSIC TO MAKE THE DOGS HOWL

■ How can you keep from smiling? It farts, groans, weedles and screams as it's being played, with hands moving erratically around its metal antennae. I keep the crazy thing hidden in the equipment locker at the studio and only reveal its presence when I know we have lots of time to kill. That's when I'll pull out the Theremin. It's always good for a laugh and maybe, just maybe, we'll get a keeper track. For the most part, it is best as a bonding element and a great video opportunity that everyone can participate in as no one needs any particular advance training to play one. In the world of weird, obscure musical instruments, the Theremin is king.

The sound of the Theremin is unmistakable. Its otherworldly warbling tone is heard in many classic B-grade sci-fi flicks from the 1950s. As much as it is a novelty for us in recording sessions, the Theremin's development and history are profound in the field of electronic music. In fact, you can consider this invention to be the original electronic instrument!

The Beginnings

Russian inventor and cellist Léon Theremin (originally known as Lev Termen) designed several early electronic instruments, microphones and video devices during his long life. He is best known as the inventor of the Theremin, which he patented in 1928. It is a device that generates an electronic tone; the frequency and volume are controlled by holding your hands close to (but not touching) antennae on the sides of the unit. The closer your hand is to the first antenna, the higher the pitch generated. The closer your hand is to the second antenna, the louder the tone gets. By wiggling your hand as you control the note, you can get a bowed vibrato tone that's similar to a violin or cello, just a lot more alien-sounding—thus its popularity as the spooky sound featured in 1950s movie thrillers such as *The Day the Earth Stood Still* and *The Thing (From Another Planet)*.

In the world of rock music, the Theremin has been used in several classic recordings including Led Zeppelin's "Whole Lotta Love" and the Beach Boys' *Pet Sounds*. You'll hear Jimmy Page wailing away on a Theremin in



Jimmy Page playing a Theremin onstage with Led Zeppelin in 1971



Angelo Moore onstage with Fishbone, playing his psychedelic Etherwave Moog

the film *The Song Remains the Same*. There are also several current masters of this instrument in rock music; one of the best I've recorded is Angelo Moore from the band Fishbone. He sometimes uses an older wooden vacuum tube model patched into an array

of guitar pedals and a guitar amp to rev up its sound. His spastic, wild waving of hands while playing the Theremin just adds to the excitement of his live performances. Robert Wheeler from the band Pere Ubu and Dave Gibney from Los Angeles' Chingalera are other great, but perhaps obscure, Thereminists.

Among many of his inventions, Theremin also developed the "rhythmicon," which was the first drum machine, and the "terpsitone," a device that translates a dancer's movements into electronic musical notes. The terpsitone was seemingly a larger version of the Theremin, using a dancer's entire body to play the thing instead of just the hands, and it was completely uncontrollable! Theremin's inventions caused a sensation in the world of avant-garde music in the 1930s, when he became somewhat of a celebrity in America. He paid dearly for his ingenuity and his notoriety when he suddenly disappeared in the late '30s; it was rumored that he was taken by the KGB to a Soviet work camp "laboratory" in Siberia. He was not to return to the U.S. for the next 30 years.

There are conflicting reports on what exactly had happened to Theremin during World War II and the ensuing Cold War. It is known that he was "rehabilitated" by the KGB and released in 1956, when he was awarded the Stalin Prize for inventing an espionage device called the "buran," the precursor to the modern laser microphone. The buran used infrared light reflections to detect and translate sound vibrations



The inventor and his instrument

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GEAR STORIES

from distant glass surfaces and was used as a spying device against the U.S. during the Cold War. Theremin had built friendships with Americans who loved his electronic instruments and music, yet he was obliged to support his homeland by providing his scientific inventions to the Soviet government. This double alliance eventually tore Theremin's world apart. After working for the KGB, Theremin had a lab at the Moscow Conservatory of Music for 10 years where he taught and built Theremins, electronic cellos and terpsitones. A visiting correspondent discovered him there, and when a *New York Times* article was published about the Russian inventor, the managing director of the Conservatory said, "The people don't need electronic music. Electricity is for killing traitors in the electric chair." He then fired Professor Theremin, closed his laboratory and had his instruments destroyed.

Theremin eventually returned to the United States in 1991. He died in Moscow in 1993 at the age of 97. His designs have been rebuilt by enthusiasts over the years, including the late Robert Moog, pioneer of the modern synthesizer. Theremin was also immortalized in the 1994 movie of his life: *Theremin—An Electronic Odyssey*, further reviving interest in the inventor and his instruments.

Back to the Present

After seeing a Theremin instrument being used in a session, I purchased a prebuilt kit model developed by Moog and sold by Big Briar (and it's actually signed by Mr. Moog!). Modern Thereminists enjoy using "concert"-quality instruments by several manufacturers today, including Moog Music, Theremians, Burns and Harrison Instruments. The "Ethernax" is Moog Music's

contribution as the world's first MIDI Theremin. More recently, Theremin technology has been used to create a new generation of guitar effect controllers. The Probe from Z.Vex Pedals (www.zvex.com) is an amazing device for your guitar, controlled by the proximity of your foot to the pedal. Z.Vex now makes several varieties of the Probe, including a Fuzz Probe, Tremolo Probe and Wah Probe.


Theremin will forever be a part of electronic music's colorful landscape, and should be recognized for innovation and creativity in the field of music technology. I keep my Theremin in the equipment locker at the studio and look forward to every chance I can bring it out. If you have a Theremin in your closet, make sure all your foundation tracking has been done, because unless your performer is a virtuoso, this solo may take awhile. It can be a heck of a lot of fun, but can also eat up all your precious tracking time! III



The completely uncontrollable terpsitone

Sylvia Massy is the unconventional producer and engineer of artists including Tool, System of a Down, Johnny Cash, Red Hot Chili Peppers, Tom Petty and Prince. She is a member of the NARAS P&E Wing Steering Committee and Advisory Boards, and is a resident producer at RadioStar Studios in Weed, Calif.

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State of Live Sound

INDUSTRY KEEPS
ON ROLLIN' IN
TOUGH TIMES

Each stop at U2's 360-degree tour was sold-out, showing that music lovers continue to show interest in live performances.

PHOTO: STEVE JENNINGS

By Blair Jackson

While the music industry

as a whole continues to face challenging times, with sales of even the most popular albums decreasing year to year, and the rise of individual digital track purchases still not compensating for the volume of losses, the live touring industry has remained relatively robust. As M.L. Procise, senior touring director of Clair Global, the world's largest touring sound company, remarks, "It seems that especially in tough times people want to escape and go out and see bands that they love—somehow they find the money for it." Dave Shadoan of another giant audio company, Sound Image, agrees...to a point: "People are still going to shows—most of the big tours are doing okay—but there are also a lot of people who, because of the bad economy, can't go as often, or they'll stay away from the high-priced shows. For a lot of people, 'disposable income' is down to a husband and wife going to dinner and a movie. The trip to the Mouse House [Disney World]—people aren't spending that money now."

Indeed, on the surface, glancing at the top tours of last year it looked like good news all around. Led by U2's amazing 360-degree stadium shows—all of which sold out and which are on track to do so again this year—and buoyed by popular tours by the likes of Madonna, AC/DC, Bruce Springsteen, Metallica, Elton John and Billy Joel, The Eagles, and Kenny Chesney, many arenas and sheds were filled to capacity. That's the good news. The less than great news is that the support overall for many tours was "thin"—i.e., demand for some perennials (like Springsteen, for example) was not as great as in previous years—and many of the summer amphitheater acts performed for full houses only because of a plethora of heavily discounted seats. And although many look at 2009 as the crater of the recession, with some economic indicators looking up (marginally) for 2010, the continuing high unemployment rate and an overall lack of confidence in the nation's economic fortunes have the potential to actually make this a tougher year than last year on the live sound front domestically. One harbinger may be the upcoming Eagles/Dixie Chicks/Keith Urban tour, which has been ambitiously booked into a number of stadiums in large markets.

"It's too early to tell how the summer season is going to be," says Gary Bongiovanni, editor in chief of *Pollstar*, the leading live music industry publication. "If you look at what's going to be out there, it's a lot of the same music that's been out there every year. In the summer you see a lot of the boomer bands combining in twos and threes to try to do another tour of large venues, and for the most part those have done fairly well. The outdoor festivals that are coming, like Coachella and Bonnaroo, will probably do fine because they get big acts and they've also established themselves as places people want to go, no matter who is playing. And country has proven to be dependable, too, year-round. What's interesting about that market is it's largely newer acts. If you look at who sells a lot on the rock side, you're looking at Springsteen and U2 and The Eagles, AC/DC—all these acts that have

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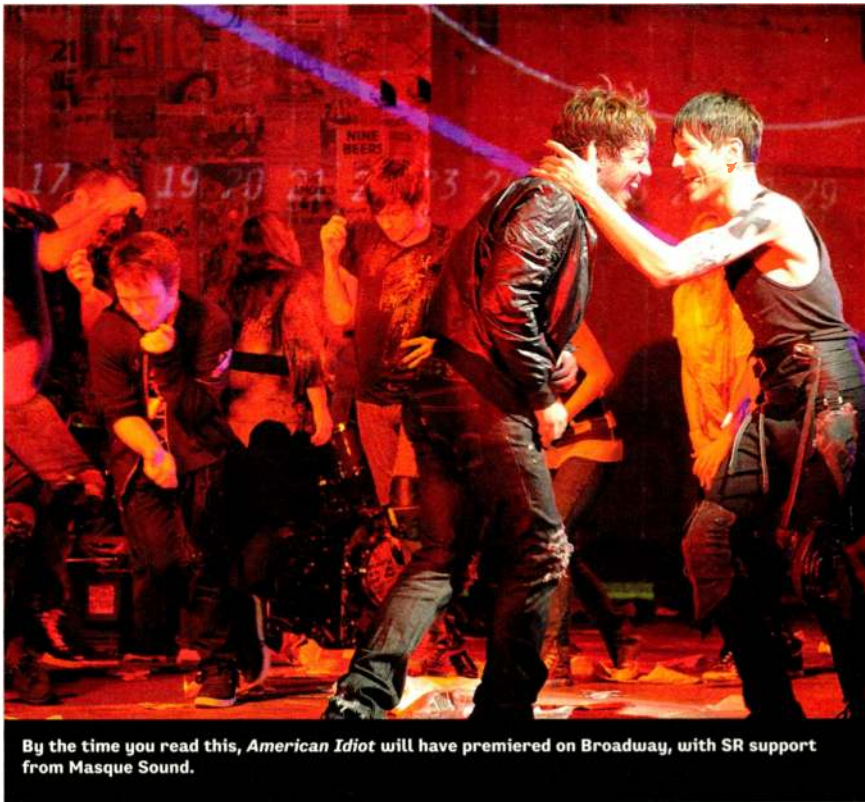
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By the time you read this, *American Idiot* will have premiered on Broadway, with SR support from Masque Sound.

been around for decades. But in country it's Zac Brown, Lady Antebellum, Taylor Swift, Rascal Flatts... It's going to be interesting to see what happens when the Rolling Stones are no longer around and Paul McCartney is no longer around and Springsteen isn't touring anymore. Who will take their place at the upper level? It's hard to say."

Glamorous names aside, the live sound business is much more than just the top-grossing touring acts, of course. It is clubs and auditoriums, church installs and corporate events, conventions, legitimate theater, wineries and Indian casinos—an incredible panoply of microbusinesses, each an economy in itself. And looking at this deeper landscape, the results are perhaps more mixed than they are at upper strata of big music tours. We recently spoke with reps from a handful of top sound reinforcement companies to get a sense of the market's strengths and weaknesses.

Paul Owen, owner of Thunder Audio (Livonia, Mich.; thunderaudioinc.com) says, "We've stayed busy by doing different levels of acts. We still have the megatours: Metallica has been out for over 18 months now; it's going to continue on at least until December, and who knows if they'll actually stop then. I hope not!" he laughs. "But the market is changing all the time. There are a lot of bands that people really want to go

see that have been launched through YouTube and MySpace and things like that—those are great marketing tools for these new bands. We have one indie band that has done extremely well—Vampire Weekend, who have grown tremendously in the last couple of years and are playing some larger venues now. Bands are basically doing their own marketing for their own exposure, as opposed to when you used to hire a whole team from a record company, which handles distribution, marketing and everything else.

"We do a lot of rock, obviously," Owen continues, "but for the past 15 years we've also taken care of what are called 'chitlin' players.' We've looked after [African American film director/comedian] Tyler Perry for 15 years, and now that's gone on to a full-blown arena tour of a play [*Madec's Big Happy Family*] that's been out now since January, finishes in May and continues on in September for the rest of the year. One of the big challenges with that one is it was always done in theaters and so the scale has changed in the arenas but you want it to have the same intimacy. It's got full-on video, lighting, a Meyer audio package. It's impressive. And now we have another one going out called *Church Girls* that has a similar theme but smaller. We've paid a lot of attention to that market, and it's definitely reaping rewards for us."

Another observation from Owen: "More

PHOTO COURTESY MELLOPHE.COM

people doing regional tours. With a lot of the large permanent installs that have gone into casinos and Hard Rock Cafés and other venues, and fuel prices being so high, there are a lot of bands that normally would have toured five to ten years ago with full production, will now tour with just two digital consoles, some racks and put it in a trailer behind a bus, where they might have had a full truck—or more—of production.”

Over at Eighth Day Sound (Highland Heights, Ohio; 8thdaysound.com), executive vice-president Jack Boessneck is finding that there are two main pressures being exerted by clients: They want more for less, but they still want the most technologically advanced equipment available. “I don’t know anybody who has walked into *any* place—even if it’s the local hardware store—within the last 18 months and not expected a deal. If a product and/or service is negotiable—and *everything* is negotiable—that’s the way it is. So, maybe your margins change a little. You work harder, you work smarter. But if you start cutting your product or cutting your service, or cutting anything, you lose. You can’t cut your edges. Why are we doing well? Because we’re competing in the marketplace.”

Like other live audio companies, Eighth Day has always sought a broad range of clients. They handle tours by everyone from Lady Gaga (“We’ve been with her from the beginning,” Boessneck says), to Tom Jones, Whitney Houston, Jay Z and the *Lord of the Dance* extravaganza. “I love them all!” Boessneck says. “I like to joke, ‘We don’t pick the bands we do. Satan’s Salad Bar is my very favorite band if they pay the bills!’”

Boessneck, too, is finding more tours not requiring full production, with an upside being that more groups can afford to tour: “I think it’s actually led to a little more work for everybody,” he says. Also, the smaller footprint of some of the newer digital consoles, and the increasing use of plug-ins (instead of racks of analog outboard gear) has meant less heavy equipment being lugged around, which saves money. “Let’s face it: Computers have changed everything,” he comments. “Sometimes we don’t feel like a sound company; we feel like an IT company.” Asked about the coolest piece of new gear that his clients are requesting, he immediately responds, “The DiGiCo SD7. People love ‘em.”

Overall, Boessneck sounds remarkably upbeat. “Why wouldn’t I be upbeat? I’m in the sound business, not the auto or banking

industry. The economy isn’t great, obviously. We haven’t totally turned the corner. But how many sound companies went out of business last year? Zero that I know of that even play on a large regional level. And last year was worse than this year is supposed to be.”

Geoff Shearing of Masque Sound (East Rutherford, NJ; masquesound.com) comments, “We’re doing better than a lot of people because of the diverse group of clients we have, and, fortunately, Broadway seems to be holding its own.” Masque was started in the mid-’30s by a trio of Broadway stagehands—including Shearing’s grandfather—and both New York-based and touring musicals and plays still constitute a significant part of the company’s revenue; among its current productions are such hits as *Mamma Mia!*, *Billy Elliot*, *The Phantom of the Opera*, *Jersey Boys* and the recently opened *American Idiot* and *The Addams Family*.

“We’re still facing a big transition in terms of finding any sort of standard for digital consoles [on Broadway],” Shearing offers. “It used to be that Cadac was on probably 90 percent of the shows; now it’s a mix of different platforms with no clear best choice. The other thing about digital is it goes obsolete so quickly. It’s a whole new paradigm in terms of pricing models for us; honestly it makes it more difficult to earn a living. So we have to pay very close attention to inventory levels. In my grandfather’s day, he could rent a piece of equipment for 30 years, literally. Now we’re lucky if we get three.”

Masque does a considerable amount of broadcast work, “and we’re also doing a lot of installations now for performing arts spaces and churches. We have a lot more to offer than your typical audio-visual contractor. We have a facility that’s capable of going 24/7, so we always have support available, we have a large inventory of items, we have trucking and a full-time staff of people who know audio. People want to deal with a company that’s been around for a while. We also own Professional Wireless. Some of the corporate stuff has gone away, but it’s creeping back a little bit now. With installs, the budgets have been approved and they are in the pipeline, so that’s been very good.”

Don’t get Dave Shadoan, president of Sound Image (Escondido, Calif.; sound-image.com), one of the largest SR companies in the world, started on the subject of the shrinking corporate-event market: “It’s way off, and you can thank our government for

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that. They got on TV and chastised corporations for having jets and big parties and everything else. I understand talking to someone like General Motors, who's losing \$4 billion a quarter, for throwing a big soiree, but what happened to the corporate market is *everybody* got put on watch and they've stopped spending money on corporate events. If you go to Vegas, they'll tell you it was the government because they started chastising these large corporations. Call Orlando. Call San Diego. They'll tell you the same thing. For example, a large corporation used to put on 15 corporates a year worldwide; they've downscaled it to three. And they were very big corporate shows. The end is nowhere in sight because the economy has yet to stabilize. You have a bunch of people who are apprehensive to do anything because they're afraid the federal government will accuse them of squandering funds. But they were never squandering funds—the reason they had their big corporate events is they brought in their sales teams, they familiarized their personnel with one another and formalized their business plans for the upcoming year; they had a purpose to them. Yeah, they had some fun. And they should. It's *their money*. Our own government scared these guys out of doing their job."

That said, Sound Image isn't exactly hurting. They continue to handle many big and small tours—Rage Against the Machine, Tom Petty and The Heartbreakers, Jimmy Buffett, Lenny Kravitz, Santana, Elvis Costello, Billy Idol and Heart, and the lion's share of big country tours, including Brooks and Dunn, Taylor Swift, Brad Paisley, Toby Keith, Rascal Flatts and Easton Corbin—and "our contracting department grows gradually every year and we've invested multiple millions of dollars in touring over the last two years. In one year we bought 1,200 Crown HD 12000 series amplifiers, we bought another 72 VerTec boxes this year, and we also bought a K1 system from L-Acoustics [for the Tom Petty and the Heartbreakers tour]. We put a purchase order in today for six new digital consoles when we already have a substantial inventory—this particular purchase was Digidesign Profiles and VENUE consoles. We also continue to purchase Digidesign SC48 and Yamaha M7CL boards, which are basically band-in-a-bus consoles.

"Now is the time you want to grow your

company because the touring business has been pretty good, and when [this economy] comes out the other end of the tunnel, the people who continued to invest in technology, people and services are going to be the big winners."

Finally, at Clair Global (formerly Clair-Showco, Lititz, Penn; clairglobal.com), which M.L. Procise says "at any given time probably has 45 percent of [the touring] marketplace on the conservative side, to 60 percent," things keep humming along: In March alone they had nearly 50 tours going, including such names as Paul McCartney, Guns N' Roses, Black-Eyed Peas, Eric Clapton and so many more. "We're continuing to develop new and diverse products that meet the needs of any kind of venue. We're truly a global company, so all our equipment, our AC systems, crossover systems, cabling systems, our crew philosophies are standardized worldwide, whether you're in Sydney, Tokyo, Basel, London, Toronto, Nashville, L.A., Lititz, Chicago. You get the same equipment, you draw from the same crew pool to operate that equipment, so everybody is on the same page. That's important." Clair (and Showco) were, of course, responsible for numerous touring sound innovations through the years, including the Prism, S4 and more recent i-5 systems, among others, and they continue to mix proprietary gear with thousands upon thousands of pieces by dozens of manufacturers for their ever-growing worldwide business.

"Of course equipment is important," Procise says, "but it's still a *people* business in the end, and it's the responsibility of the sound company to bridge the technology gap on field service. I like to think our guys are the best in the world. We go to the finest vocational schools and musical engineering programs to recruit the best people with the highest aptitude and best grades—people who *want* to do what we do for a living. Because this is our life. Maybe you can't be on the softball team or in a bowling league or have a family right away. This is hard work that requires a lot of commitment. This isn't just repairing a bad module in an analog console anymore. There's *a ton* of different things to do. And in this day and age you have to have people who can do it all." III

Blair Jackson is Mix's senior editor.

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Music To Go

SAME-DAY RECORDING/DISTRIBUTION OF LIVE SHOWS

By Tom Kenny



Auckland, New Zealand fans line up for their Pixies same-day release, March 2010

It seems like a no-brainer in this age of instant gratification. You go to see your favorite artist, love the show, then before leaving the venue put down a credit card (if you haven't prepaid with your ticket purchase) and take home a quality audio recording, maybe with HD video, perhaps some behind-the-scenes footage from soundcheck that same day. A photo gallery. Web links. Unreleased tracks. And the whole package comes on microSD, USB wristband, beamed to your iPhone or Droid, or on a pre-printed, limited-edition CD/DVD package.

It's all happening today. The technology exists; artists are using it. It just hasn't gone mainstream. But it's about to.

The history of same-day recording is as old as the history of bootlegs, and it's certainly been updated for the BitTorrent/YouTube generation. Plenty of live performances are available for free on the Internet, but they are often of low quality, and their distribution, legal or illegal, remains outside of the artist's control. To counter—or sometimes to encourage—file sharing, a number of forward-thinking acts have embraced the concept and taken matters into their own hands. The Barenaked Ladies, for one, have made nearly every show available since 2005. Pearl Jam pioneered—and mastered—the process of next-day delivery years ago. And others have used variations through their own Websites and marketing promotions.

At the same time, a number of well-funded efforts have sprung up over the past decade to deliver same-day content to fans. DiscLive, a New York-

based company, was in early in the game, with racks of duplicators churning out CDs at selected venues in the early 2000s. They were followed soon by Clear Channel's entry, InstantLive (now owned by LiveNation), which created quite a stir when it filed a patent claim on the same-day recording/distribution process. (The patent was revoked in 2007.) Fab Channel was a player for years. Basecamp Productions is still going strong.

Among the more established companies operating today are Aderra Media Technologies, an L.A. company founded by musician/composer Ed Donnelly, and Abbey Road Live, an independent division of EMI with an Americas office headed by Zach Bair, one of the principals in Immediatek, which purchased DiscLive in 2005. Both founders are first and foremost fans who left a concert wanting to relive the magic. Both are committed to changing the way artists connect with their audience.

"We see ourselves as providing a bridge between the artist and the fan so that it's not just a live show," says Donnelly, whose company distributes in any platform you might envision but seems to have perfected USB wristbands and all its kin. "The conversation between artist and fan can continue long after the last note has sounded. When you use one of our multimedia devices, whether it's a microSD card or USB drive, there's a full interactive multimedia center. You plug it in, the Dashboard deploys and you don't get just the audio recording. You also get behind-the-scenes interview footage, special Web offers, gateways for the artist to push to the

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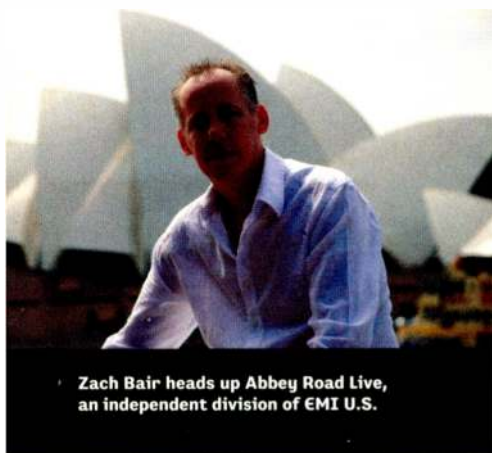
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fans later on. We're on tour with an artist right now where when you buy the USB, you get their new studio album, two catalog albums, an HD music video, three behind-the-scenes video shoots, in the studio. Then over the course of the tour, you'll get six or seven more live shows, plus spontaneous performances they might do at a rest stop at the side of the road. This is content created specifically to connect artist and fan, a continuous re-engagement."

"We fulfill a need," adds Bair, "for instant gratification, for quality content and for new revenue for the artist. Our instant products create a very personal connection. Many of our releases are limited-edition, numbered CD/DVD units, making them much more of a memento than a live album released for mass distribution. Though we can do that, too. I'm definitely a believer in the digital frontier, with things like USB devices and mobile applica-



Zach Bair heads up Abbey Road Live, an independent division of EMI U.S.

tions—we deployed a Pixies mobile app prior to this spring's tour and have almost 25,000 downloads from the iTunes store. But I think the core, sexy product is a physical device that you can play on the spot. It's like saving your ticket stub, or as *Forbes* put it: 'It's better than a T-shirt!'"

There's been a lot of press lately over new business models for artists, new ways to connect to the core fan base in the wake of declining CD sales. While the more traditional model of album release/tour/merchandise is hanging by a thread, innovative acts are looking for new ways to connect, most of it involving variations on Facebook/Twitter and all forms of social networking. But artists and labels are also banking on the fact that those connections bring in new revenue. This is new money, both companies emphasize, without any upfront costs to the artist or label. And while each com-

pany has a standardized business model, they each customize their involvement based on an artist's goals.

"We're doing innovative business deals all the time," says Bair, whose company, Immediatek/DiscLive, offered the first iPod downloads and the first DVD same-day product. "We don't



The Aderra USB wristband operation in mass-copy mode. Note the scalable, modular flight packs.

ask the artist for publishing or anything like that. They own the masters and we have an exclusive copyright for 'x' amount of time to sell our product. Typically we do a 50-50 net split with the artist off the back end once the costs come off the top. Very clean, very simple, very transparent accounting."

"We take on every project, no matter the artist or genre, and work to customize it," adds Donnelly. "There are a lot of common links, but we build each and every project from the ground up, a great live recording being the foundation. Now, that recording might involve anything from a full 48-channel truck rolled up to the venue to a couple of mics in the air going through some high-quality preamps. It all depends on the artist and the venue—what will best recreate the magic of that live experience."

Bair prides himself on quality, emphasizing that he employs the core team from DiscLive that has been doing this for the longest time. Following the purchase of DiscLive, his company, Immediatek, purchased Moving Records, which had a reputation for quality multitrack

recordings. He noticed a boost in quality right away, and they began splitting digitally direct from the snake, doing a full mix on their own console, with their own, experienced engineers. Today, Abbey Road Live also offers any package an artist might want, with full redundant systems built into the flight packs or mobile vehicles if the client wants to spring for the more controlled atmosphere.

Still, the question remains: Why is this not the norm? Why not every night, at every show?

"There's a few factors that play into that," says Donnelly. "The first is the fan perspective. Once fans become accustomed to attending a performance with the knowledge that they can walk away with the show, that wall will come down. And we've already seen that happen in towns that we've revisited with artists."

"The second part is that there is a lot of disruption in the music industry right now, and we are part of that disruption," he continues. "Any time you talk about digital content and digital distribution, nobody has come up with a clear direction. Sometimes we are wholeheartedly embraced by the artist, management and label, and sometimes an act just wants to dip their toe in the water and see how things work out. Once we show them that this is a viable way for people to not just deliver music directly to fans, but that they can continue the conversation, this will become much more mainstream."

"Much of the acceptance is simply education," adds Bair. "When we first started this with DiscLive, most labels were reluctant, perceiving us as competition to a studio release or their own efforts. But now they're seeing us as part of the overall pool. When you buy a ticket to a concert and can just click a box to add a CD or USB of that night's performance, then we will be more integrated into the industry stream and the quicker it will spread."

"In terms of how people wrap their heads around Internet file sharing, the change from 2006 to 2010 is remarkably different," Donnelly concludes. "When I first began going out to speak to artists and managers, one of their big concerns was DRM and piracy. What's going to happen when these kids get home and put it on the Internet? Those are questions we rarely hear anymore. If we sit down in front of an artist today, they ask a couple of questions right away. The first one is what does it sound like. But the real question is: In this landscape, what can you do for fans that is cool, that they will participate in. I think we offer a great solution for that." III

Tom Kenny is the editor of Mix.

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House of Worship Sound

By Sarah Benzuly

It should not

be news to Mix readers that full-sized line arrays and digital consoles are part-and-parcel of house of worship (HOW) installations. But what may come as a surprise is the fact that these installs are not just reinforcing spoken-word audio. These venues are also becoming multipurpose facilities, where the congregation meets to enjoy live music performances, enjoy recreation opportunities, have a cup of Joe and much more. For system installers, these expanded services add a new dimension to their specs: While spoken word is still of prime importance, the audio gear that is provided must also offer a thumping low end that concertgoers expect. Mix examined a couple of recent installs to see just how high-end these spaces are becoming. [Eds. Note: Editorial for Harvest Bible Chapel was provided by sister publication Sound & Video Contractor and written by Dan Daley.]

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Southeast Christian Church, Louisville, Ky.

Mirroring a trend in the market, this church added a new 1,200-seat room (The Block) that is youth-oriented and multimedia-intensive. Here, teens can climb rock walls, play videogames, surf the Net and experience concerts. For the audio installation, the church turned to Mankin Media Systems (Franklin, Tenn.), a systems integrator. Tackling the concert-friendly space, Southeast Christian Church envisioned a House of Blues-style setup: a three-sided balcony and small stage.

"It's pretty small; people get packed in," says Stephen Roberts of MMS. Immediately, this threw up some acoustical red flags for the company, as spoken word was still high up on the needs, but the owners also wanted the venue to be used during the week, when they would bring in bands and host events.

"The technical challenges were steep from the outset as the first MMS Dream Session revealed Southeast's desire for functionality that would cost more than twice their initial budget," Roberts says. "Through our 3D [Dream, Design, Deploy] process, we designed a system that is to broadcast standards for audio, video and lighting."

To start, the team entered the room's dimensions and data into [Renkus-Heinz's] EASE to find out which P.A. would be best suited in the space.



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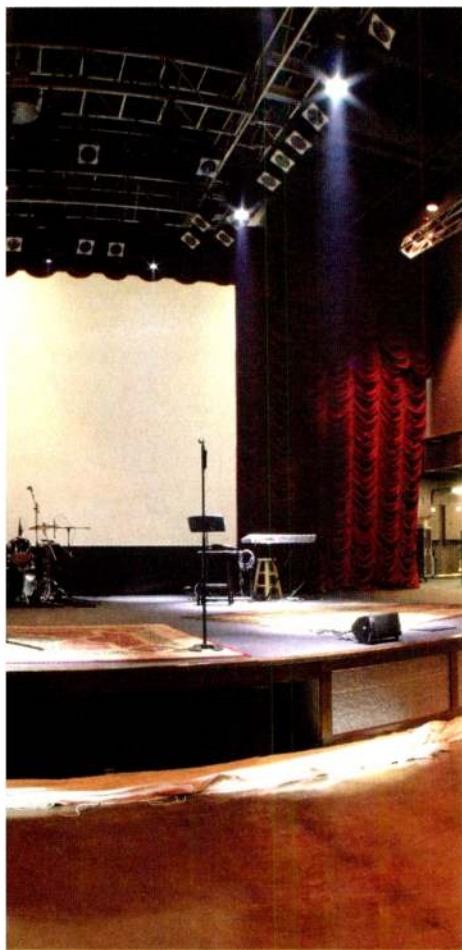
Southeast Christian Church's The Block features a d&b audiotechnik C Series P.A.

"We took the room, put it into computer models and said, based on that, here's some speaker systems that will work," Roberts recalls. "The client already had previous experiences with a few of those and selected d&b audiotechnik [C Series], and they said let's hear this one to make sure it will work for the space. So we brought them down to Nashville and they listened to it and loved it." Twelve months later, the system—powered by d&b amps—was installed.

"With the advent of line array technology, a lot of churches are saying, 'We're moving to a more contemporary, louder volume. Can we put in a line array?' Then at The Block, they want to see the technology—speakers right there where everybody sees them. That's not necessarily a bad thing. It's meant to be the club feel with big speakers.

"That's the second half of the equation," he continues. "Once you choose your speaker, you model in the space where you're going to hang it, and visually we can look at the space and say these are going to be problem areas just based on experience, but then the model complements that: 'Okay, you have a reverb time of 3 seconds currently because it's all concrete brick.' So we go in and place acoustics in the model to break down that reverb time to something acceptable for speech. We placed lots of acoustic [treatments] on walls, and with this project, we built a five-year plan of technology implementation, and part of that plan was adding acoustics; they didn't have enough money up front to completely do all the treatment they wanted. But over the next five years, they'll purchase acoustics for this additional area."

To outfit the rest of the space, Roberts chose a Digidesign VENUE for front of house. "Audio is crucial to the system, and as such, the client—after demoing and working with different consoles—selected the Digidesign VENUE as the best trade-off between a great-sounding console and



savvy and was able to pick up the basics quickly, while still learning and trying out some of the more advanced features of their equipment with each new event.”

The project also paid off for Mankin Media Systems, as the company won three of last year’s Solomon Awards (Best Tech Consultant and/or Contractor; Best Overall Church Technology Project; and Best Design, Implementation and Operation of an Audio, Video and Lighting System) at the 4th Annual Worship Facilities Conference and Expo.

Harvest Bible Chapel, West Olive, Mich.

Located in the suburbs of Grand Rapids, this parish recently completed a 41,000-plus-square-foot addition to the church’s existing facility, adding more seating for its congregation of more than 1,000 members, a café lounge, a tiered 120-seat lecture room and a choir rehearsal/recording studio that can hold 80 people. It also gave the church the kind of space it needed to support an increasingly contemporary, music-based ministry.

Parkway Electric & Communications was a logical choice to do the A/V systems integration—Parkway project manager Steve Driesenga is also a member of the congregation, which might have contributed to its decision to green-light some pretty advanced technology. That included a Whirlwind digital Ethernet snake from the stage to the front-of-house position and Ethernet cabling from there over to the amp rack and then back to the stage for the Aviom digital in-ear monitoring system.

“The in-ear monitors allow each musician to control his or her own mix, which is very important to a ministry that emphasizes music so heavily, and using the snake let us reduce cabling by a significant amount, as well as simplified the installation and prepared the facility for future expansion,” explains Jeff VandeHoef, project engineer for Parkway. “We’re seeing things that have become more common in 5,000-seat churches now becoming part of the system design for 700- to 1,000-seat churches,” Driesenga says.

Microphone inputs can be plugged into floor pockets around the stage that are tied directly into the digital snake in a Middle Atlantic MPR-8 power raceway. The signals come up on the new Yamaha M7CL FOH mixer, where three Ethernet cards convert the signal to data that is fed to the monitor system (via Axiom cards also in the console) and to the Lowell and Raxxess Metalsmiths amp racks and back

easy volunteer operability,” Roberts says. “To fit the budget for the building, we value-engineered the system to work with the Digidesign MixRack to save money while still providing all the functionality the church needed. Backstage at monitor world, there is another Digidesign MixRack for stage monitors and a patchbay to route audio signals to all rooms in the building, as well as stage inputs.”

Roberts says that the audio from the mics to the console stays analog because it is inherently reliable and cost-effective. The A/D conversion happens at the console and stays digital. The drive lines from the console to the amps are AES digital lines. “We believe in retaining high-quality signals while using the flexibility of digital audio, which is why there is only one conversion point,” Roberts says. Rounding out The Block’s feature set are Sennheiser G2 wireless ears, Shure UHF-R wireless systems, a full complement of lighting and video gear, and more.

While many system installs are fully finished before staff training begins, the technical crew at the church was able to use the gear at their old space before moving to the new venue. “This allowed them to not be shell-shocked when trying to learn everything between two Sundays,” Roberts explains. “The Southeast team is very tech-



The 41,000-square-foot addition to Harvest Bible Chapel features a Renkus-Heinz ST Series P.A.



The Block’s front-of-house rig includes a Digidesign VENUE.

to the P.A. The P.A. is self-powered, using Renkus-Heinz ST Series loudspeakers. Four loudspeakers—two ST6/64 and two ST4/44 models—are flown across the stage, buttressed by four Renkus-Heinz BPS15-2K subs placed two per side and built into the base of the stage. Front-fill for the first few rows is done using six JBL Control 28 loudspeakers and seven Atlas FAP42T ceiling loudspeakers with 55ms delays that fill in the back of the hall, powered by Crown CDi and XTi series amplifiers. The P.A. system is optimized for music and speech intelligibility, using a dbx 231 equalizer and the Yamaha M7’s onboard DSP and its memory-recall feature, which lets the mixer flip between optimized settings for speech and music.

As for the Yamaha board, Driesenga says, “Church volunteers adapted well to the digital board and ultimately found themselves relying heavily on many of the new digital features—such as saving presets, scenes and entire mixes—which constitute additional time and effort savings.”

Acoustics By Design, an independent consulting company, was brought in by the general contractor, Dan Vos Construction (both located in Grand Rapids), to offer acoustical engineering and A/V consultation for the project. ABD worked directly with the church to ensure the space was optimized for worship, says Kenric Van Wyk, president of ABD. He says he used

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Over at The Block's monitor world sits a Digidesign MixRack for stage monitors.

the EASE Address software modeling of the space to predict its acoustical fingerprint and to determine loudspeaker selection and location. According to Van Wyk, the need was to redirect the acoustical energy more evenly throughout the room, to overcome node build-ups caused by sonic reflections. The solution came in the form of custom-made side-wall reflectors made from drywall and cut into an elliptical shape about eight feet wide. "These reflective diffusers deliver the sound evenly throughout the sanctuary," he says.

Other innovations include a 10x10-foot clear plastic drum kit enclosure for isolation and ButtKicker pads for both the bass player and the drummer, who share outputs from the ButtKicker's amplifier.

All the while, the design had to be flexible and economical. Driesenga notes the dramatic lessening of cable runs thanks to the digital snake, the Ethernet signal distribution and the self-powered P.A. loudspeakers. The digital patching capability of the console and the snake also make for a more efficient signal routing system. "We're not seeing investment in those types of equipment happening yet on a regular basis in churches," he says. "But the operational flexibility they offer is certainly worth their cost because features like preset scenes can let the space be used by a wider variety of performances."

Driesenga acknowledges the steeper learning curve that a digital console presents, noting that most volunteer sound techs at churches have yet to master digital mix consoles. At Harvest Bible, three volunteers underwent training from Parkway to learn the Yamaha M7. "But once they realize what they can do with these systems, I think their reluctance will begin to fade away," Driesenga says. ■

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NEW HOME,
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ROOTS MUSIC
MECCA

By Barbara Schultz

The Freight & Salvage Coffeehouse has been showcasing multicultural roots music since the venue was spawned by Berkeley, Calif., folkies in 1968. It has subsisted largely on a shoestring all these years, relying on devoted patrons and generous partners, such as Meyer Sound, for the resources to bring in such performers as bluegrass icon Ralph Stanley, singer/songwriter Loudon Wainwright III, Irish fiddle/guitar duo Martin Hayes and Dennis Cahill, New Orleans' Dirty Dozen Brass Band and so many others. Until six months ago, concertgoers were happy to crowd into the lovable dive that was The Freight's home for more than 15 of its 42 years—a converted warehouse with exposed wood walls; counter-service coffee, tea and baked goods; and a collection of discarded folding and cafeteria chairs.

What a difference a decade makes. It took nearly 10 years of planning, fundraising, designing and redesigning, but The Freight finally has the home that its community of roots musicians and fans deserves. The new, larger venue opened this past August in downtown Berkeley, across from the city's famed Berkeley Rep playhouse. The design of the new space resulted from a collaboration of The Freight's executive director, Steve Baker, and technical director, Steve May, with several Bay Area-based consultant firms: acoustical consultants Charles M. Salter Associates; A/V designers The Shalleck Collaborative; architects Marcy Wong and Donn Logan; equipment providers ProMedia/UltraSound; and provider/patron Meyer Sound.

"My own involvement with The Freight goes back to 1999 or so when I

started mixing there a couple nights a month," says Meyer's Pete Soper, who helped design the P.A. "Talk of the new space started shortly after I started there, but it was always this long-lost project: Someday we'll move. When John and Helen Meyer heard what was going on, they wanted to help with the sound system, and since I was working at both places, I got to be the one to help spec the system. It went through a couple design iterations. When it was first talked about, our product offerings were different from what we have now. In '01, we didn't yet have any smaller-format curvilinear line array systems that would have been well-suited to this kind of space."

The 440-seat listening room was fitted with L/R hangs of eight Meyer M'elodie speakers each, plus two 600-HP subwoofers under the stage, four stage-mounted MID line array speakers for front-fills and three UPJ-IP VariOs for sidefills. Meyer's Galileo speaker-management system is used for drive and processing.

Soper also worked with Ian Hunter of Shalleck Collaborative and May to select a new Soundcraft i4 console, which is used to mix FOH and monitors. "We were looking for something that's not at the upper end, pricewise, because we are a nonprofit," May says, "and something that would be fairly easy to get up and running, because we have maybe 12 local engineers who work here occasionally, and sometimes bands bring in their own engineer. We needed something with a small footprint so we wouldn't have to give up too many seats, but more importantly we needed something straightforward and logically laid out. The Soundcraft offers a lot of flexibility, but

it's relatively easy to walk up and just start mixing a show."

The room seats twice as many listeners as the old venue, but the seating arrangement—in a terraced fan shape, as opposed to the old venue's shoebox shape—places more people closer to the music. The new building also retains some of the rustic feel of the old Freight, in a far superior acoustic environment. An existing space was gutted and the building trusses were removed; most were milled down to become the wood slats that are spaced along the auditorium's side walls. Behind the wood planks is blackface insulation material. Together, the treatments contribute to a green, economical and sonically pleasing space.

"Part of that is perception," offers Jason Duty of Charles M. Salter Associates. "Most people associate the look of wood with a warm-sounding space; people immediately feel like they're walking into an instrument, like when you walk into the Disney Concert Hall, which is all wood and which we also worked on. The wood slats also diffuse the sound, give an organic feel and more life to the room. The blackface insulation is spongy and absorptive. Because they have such a wide range of groups, they wanted it to be good for a loud, raucous Zydeco band to come in and blow the paint—or wood—off the walls, but also work for a single guitarist who wants to play without amplification. It's an important balance, and one of the reasons we do not have big absorptive panels all over the room sucking up the sound. We needed some reflection to get sound back to people when you have those smaller groups."

In addition to the main listening room, the new Freight & Salvage includes several smaller practice room/classrooms that are used for educational outreach activities, such as workshops for adults and children who are learning a string instrument, and a summer Fiddle Camp for kids and teens. These auxiliary spaces were designed more simply and outfitted with Meyer's Stella Series speakers. All of the spaces within The Freight are wired to the main listening room so that one can serve each other if needed.


The new Freight is also Leed-certified. "Eco-friendly is hard in production systems because the industry hasn't really caught up to this movement, especially in lighting," observes Shalleck Collaborative's Hunter. "But the Meyer speakers are all self-powered, which

helps because they only draw as much power as they require rather than running all the time. We also gave them the ability to turn the power to all equipment off at the end of the night via a main switch backstage. They have to go backstage to put mics and things away anyway, and I find that if you make it convenient for people, they'll power down at the end of the night.

"This project really came together well us-

ing recycled materials and less energy," Hunter says. "It's a simple building in its essence, but the architects and everybody did a great job. We did it cheaply, but it never sounds cheap at all."

"Our board and director worked tirelessly to make this place what it is," May concludes. "There something about the old space that really worked because of the intimate size, but the benefits of this new space so outweigh that." III




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1st Bank Center

By Sarah Benzuly

TOP-SHELF SYSTEM FOR MILE-HIGH CITY



With any new audio system install, the P.A. is key: It should be geared toward the type of entertainment that will be traipsing across the stage. It must offer adequate coverage to deliver the sound all the way to the back wall. And, of course, it needs to sound good. But being able to adapt to altitude and air pressure? That's not a requirement many installers may encounter, but for Bret Dowlen, president of Arvada, Colorado-based Dowlen Sound, this factor is paramount for the Denver area. And when he was hired on to handle the audio system install and limited acoustic treatments for the recently opened 1st Bank Center (a joint venture between AEG Live Rocky Mountains

and Kroenke Sports Enterprises, now dubbed Peak Entertainment), he automatically turned to a P.A. he knew would fit the bill for this 6,500-seater.

"In Denver, where I've been my whole sound career, it's the altitude that you deal with," he explains. "And in the early days when I was building sound systems—and I still build them—we modify virtually everything due to the fact that at a mile above sea level, you have less air than you do at sea level. This interferes with cooling aspects of the system, and it can also change the tunings of cabinets and the precise alignments between the drivers. So having a system that has been aligned here will really help out because it'll

work here.

"Interestingly enough, if you tune it up and design it here, and then you take it to sea level, it really gets going," he continues. "I used to send out a little system with a band called The Samples, and they would go around the country blowing up beer bottles on bars with the subs. So from that standpoint, I'd have to spend a whole career arguing with manufacturers that, 'No, sometimes your amp won't run at even 4 ohms at this altitude and it definitely won't run at 2-ohm loads at this altitude.'

"One of the reasons McCauley was chosen for this installation is that it's also the system we use at Red Rocks in the summer. It's capable of doing the 320-foot throw to the top of the venue and it uses the same boxes all the way from the top to the bottom of the venue; you don't have to use different cabinets. With some systems, you have to put different beams on top of the existing boxes and do the angle thing, but it won't aim up hard enough when you have to do more boxes on the bottom, or it won't aim down hard enough. As a line array you can pan the McCauley in the degrees that you need to get it to go all the way from the top to the bottom."

The issue is compounded by the fact that the venue is in the foothills and sits at about 6,400 feet. However, Dowlen has used the McCauley system in many installs and, as such has had plenty of time to test the rig. "It's been a bit of a challenge to tune it, but we just bought a SIM system from Meyer. We also have a Meyer MILO rig that spends some of its time with various rentals and tours. I elected to put the McCauley into this installation because they wanted to do heavy dance shows occasionally, and the McCauley has the low-mid energy that will knock you in the chest and keep on going through the back wall. It has the authority and the force that is required to meet their expectations."

The McCauley MLA-6 line array is augmented with Chevin, QSC and Crest amps, and Dowlen Sound proprietary boxes. A Midas XL4 sits at FOH alongside racks of outboard goodies while a Paragon P-II resides at monitor world; if bands come in with their own desks, these can be rolled away. In addition, there is a full mic locker, enough cables to wind around

the theater many times over, monitor amps and more.

The venue officially opened on March 5, with a celebratory two-night stand by Further, featuring Phil Lesh and Bob Weir. Upcoming concerts include Muse, Carrie Underwood, Daughtry and more, as well as family programming (Sesame Street Live) and sports (Ultimate Fighting Championship).

"The sound goals were the same that

everyone else wants to achieve: clear, even coverage for the entire arena and the ability of doing any type of music that they want to book into the venue," Dowlen says. "Using my experience gained over the years, and with 16 venues in the Denver, Boulder and Ft. Collins area to my credit, I chose my tools carefully." III

Sarah Benzuly is Mix's managing editor.



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PHOTO: POLLY ARMSTRONG

Black Rebel Motorcycle Club are guitarist/singer/songwriter Peter Hayes (left), drummer/songwriter Leah Shapiro and bassist/singer/songwriter Robert Levon Been.

By Blair Jackson

Black Rebel Motorcycle Club

BRING ON THE NOISE, BRING ON THE CRUNCH

The band takes its name from the leather-clad biker gang in the classic 1953 Marlon Brando film, *The Wild One*—the Black Rebels Motorcycle Club (BRMC). The group's sound—an amalgamation of hard rock, blues, neo-psychedelic and even some Americana—can be as noisy and aggressive as a swarm of Harleys (or, sticking to *The Wild One*, Triumphs) or purr like an idling chopper. Since the BRMC got its start in the fall of 1998, they have put out six studio albums (and one live set), with the most recent, *Beat the Devil's Tattoo*, released in March; it's "a record that does a pretty good job of ty-

ing all our other ones together and showing who we are," according to guitarist/singer/songwriter Peter Hayes.

Hayes is joined in what truly is a power trio by bassist/singer/songwriter Robert Levon Been—who co-founded the group with Hayes—and recent addition Leah Shapiro, who previously toured as drummer for The Raeanettes. (For most of BRMC's history, British drummer Nick Jago was part of the group.) With influences including everyone from the Stones and the Jesus and Mary Chain to T-Rex, Sonic Youth and the Stone Roses, BRMC bring to-

gether melody, drive and crunch into a potent sound that is uniquely its own.

Hayes and Been went to high school together in the Northern California town of Lafayette (an East Bay suburb of San Francisco), and made their first recordings in the Bay Area, but soon relocated to L.A. and have made that region home ever since. Through the years, they have built a dedicated cult following around the U.S.—and an even larger fanbase in the UK (perhaps because of some of the aforementioned influences). They've made a couple of interesting detours from their basic

PHOTO: TERRY A. WALKER

sound along the way—with the largely acoustic-based *Howl* in 2005 (which credits T Bone Burnett for “recording assistance” and was mixed by Burnett’s engineer, Mike Piersante) and the 2008 experimental download-only instrumental project, *The Effects of 333*, which brought in ambient electronic influences. *Beat the Devil’s Tattoo* manages, as Hayes suggests, to touch on most of the group’s diverse sides—the layered, wall-of-noise squall and their more delicate folk side.

Relations between Hayes, Been and original drummer Jago had been strained and difficult for a number of years, so Hayes says that bringing Shapiro into the mix “was healthy and gave us a new focus both onstage and in our writing. Breaking in a new drummer can be hard, but we were lucky in a way because we started off just touring. We did six or eight months of touring with Leah. She got thrown in the deep end real quick. She learned 30 songs or so and we rehearsed for a while and then went straight on tour. From there, we got off the road and went straight to Philadelphia and started writing. So the transition was pretty smooth in terms of going from playing live to recording.”

Along the way, the trio started writing

songs in earnest for the album that would become *Beat the Devil’s Tattoo* (which takes its name from a phrase in an Edgar Allen Poe story called “The Devil in the Belfry”). “They were written in every way imaginable—hotel rooms, back of the bus, soundchecks. It could be just me and Leah, or Rob and Leah, or Rob will come walking in and want to try something. There were some that had been around for a while [pre-Shapiro] and others we wrote on the spot, more or less. The songs mostly come from just playing music together and everyone listening to the others as much as possible.”

When Hayes refers to going to Philadelphia, he means The Basement Studio in one of that city’s suburbs, in a house owned by friends of the band; the group also made *Howl* there five years ago. BRMC lived in the house while they worked there, which added to the project’s group vibe; Hayes did the engineering on the writing and demo sessions and then the later overdubs. Hayes says he developed his engineering chops through osmosis and experimentation through the years. In his early days of playing with Been, for instance, they rehearsed in a place “that had a little Tascam board with DA-88s and DAT players, but none



Beat the Devil’s Tattoo was tracked in Station House Studio (Hollywood) and The Basement (Philadelphia, Pa.).

of it was hooked up,” Hayes says. “So we’d be playing and we’d record our jams on a 4-track cassette player, which we *did* know how to operate, but eventually I got it in my head to try to get the board up and going and I started plugging things in and out until it worked, basically. From there, I’ve just kept trying things. I’m not a great engineer or anything, but I know how to get some of the sounds I’m after.”

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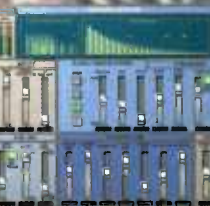
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World Radio History

In The Basement Studio, Hayes says, "They have a 2-inch, 16-track reel-to-reel going through a Mackie [board], but we also brought in a 16-track Tascam board that we've used on all our records. It becomes a distortion box, really. [Laughs] We use one channel of it like that and drop it into Pro Tools. We also mix on it."

The guitar/bass/drums basics that formed the album's foundation, however, were recorded during an intensive four days at engineer Mark Rains' Station House Studio that, at the time, was located within the building that houses Hollywood Sound (but has since relocated to Rains' own space in the Echo Park neighborhood of L.A.). The band managed to knock out 18 songs with Rains, and then used those basics to build upon back in Philadelphia—adding multiple layers of guitars, finished bass parts and doing much of the vocal work—then overdubbing more later and recording the entire title track, with Rains at the Station House.

One of the more intriguing aspects of the album's sound is that the drums are in mono, right in the center of the mix. According to Hayes, on the first self-titled BRMC album, recorded in the basement of a San Francisco studio that was under construction, "We just used two microphones for the drums, and we loved how that sounded; in fact, we've been chasing that sound ever since. When you go mono on the drums, you lose a little bit but you gain a bit, too. For one thing, it leaves more room for guitars on both sides. It's a fine line, but the hope is that you can make the drums more punchy in a way. You can do that in stereo, too, but you have to turn them up and turn the guitars down to get them to sound punchy." Rains says that he's worked with mono drums in the past on indie projects, so this was not a radical move for him. Hayes recalls that just a pair of Shure SM57s were used on the drums on a couple of songs; others had up to four mics.

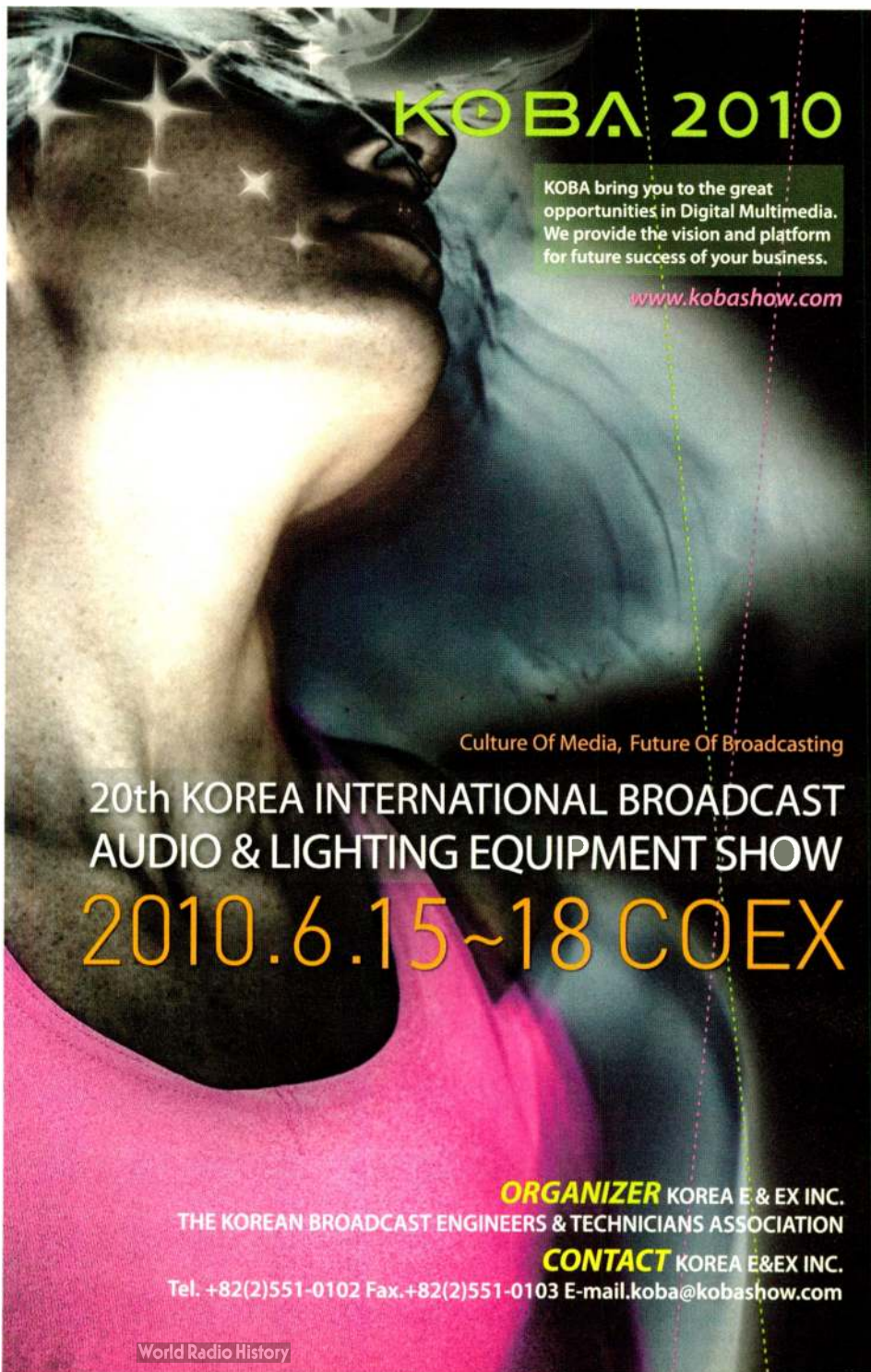
Rains and the band are credited with mixing the album—mostly in the box—but another important member of the team throughout the project was co-producer Michael Been, best known as leader of the fine '80s band The Call ("Let the Day Begin," etc.) and father of BRMC co-leader Rob Been (who was known as Robert Turner in the band's early days). Michael Been has worked on BRMC's albums in a number of different capacities through the years—engineering, mixing, playing piano, producing—and to this day he is the group's live sound engineer. Asked what he brings to the group, Hayes chuckles, and says, "In the beginning it was guitars. I didn't have any, he did, so I have one of his guitars. But really, he brings a little bit of everything. He's kind

of the outside view, who we know can come in and let us know what to do when things might be going a little haywire.

"When it comes down to mixing, I have a tendency to put the kitchen sink in everything. The way I sometimes work, I'll keep putting guitars on until I've got all my ideas recorded. Then it's a matter of piecing it together. Well, Michael's good at weeding out some of the things that aren't needed. We've gotten a little better about that—not putting on 16 different guitar parts through the whole song. Now I'll actually pick different parts and put them

where I think they should actually be."

At the close of our interview, I ask Hayes whether he ever worries about the performability of the songs the group records, given that so many of them are thick with multiple guitars and various effects on the vocals and instruments. "It's kind of a nightmare every time," he concedes. "I've gotten better at that, too, even though a lot of these songs are really full of stuff. Once again, Michael helps out a bit, suggesting which licks to play. We figure out how to make it work with the three of us. We've learned how to make a lot of noise between us." III



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World Radio History

SESSIONS

Total Access Recording—Evolving With the Business

Legendary producer/engineer Ken Scott (Beatles, Elton John, David Bowie, etc.) turned us on to one of his favorite L.A.-area studios, Total Access Recording (Redondo Beach, Calif.). Owned and operated by Wyn Davis, the facility blends old-school and cutting-edge approaches to recording.

Davis rescued this three-room facility (20x22-foot control room, 20x30-foot '70s-style dead tracking room and 20x30-foot live tracking room) from receivership in 1981, a time of instability for the music industry—like now. "The music business was undergoing one of those 'the music business is dead' phases," Davis recalls. "It was a hostile environment to start a studio in, but we started doing demos and I signed a bulk recording deal with Greg Ginn, the founder of SST Records, at a very low rate for some guaranteed work, and that got us going."

Davis hosted sessions for seminal albums with Sublime and No Doubt.

He also established relationships with engineers like Scott and David Kahne, and with "legacy bands" such as Dokken and Foreigner. Today, Total Access benefits from client loyalty, but just as important is the business brought in by Davis' young staff engineers, Mike Sutherland and Adam Arnold.

"They're young, enthusiastic engineers," Davis says. "They both function as first engineers and assistants to me when I need them. We all support each other. But they are also involved in a new generation of music and engineering that's different from what engineers like Ken and I grew up doing. It's not based on label affiliations; it's based on getting out there and having personal contact with bands, and the bands talking to each other, and doing a good job and having bands refer the friends they tour with to the studio."

Similar to his approach to the business side—keeping longtime clients while developing new relationships—Davis blends tried-and-true with cutting-edge technology. The studio still offers an analog signal path (Ampex ATR 124 tape machines, Amek G2520 console), but most sessions are cut and mixed in Pro Tools HD. Total Access also offers a range of monitoring choices—Tannoy dual 15 mains, Meyer Sound HD1 mid-fields and Yamaha NS-10 near-fields—and a selection of outboard processing, including the UREI 1176s Davis found at the studio when he first came on almost 30 years ago.

"In the '80s and '90s, I had a lot of pressure applied to move the studio to the Valley or Hollywood," Davis says, "but I'm so happy I never did that. It's not glamorous to have to drive across L.A. at 4 o'clock to Redondo Beach, but people still do it, and Ken Scott's one of them. He drives all the way from out past Malibu, which is incredible because if you think about it, he's got to drive past 50 studios to get to us. We're so grateful to the people who feel that the hard work we do for them is worth coming back for."

—Barbara Schultz



Total Access owner Wyn Davis stands behind fellow engineer/producers Mike Sutherland (left) and Adam Arnold

studio profile

Sound Clash Recordings

Sound Clash (www.soundclash.fm) in New York City is a small but highly agile and versatile audio facility that opened in Manhattan's Fashion District in 2007. It is the brainchild of three veteran engineers—Ben Arrindell, Oscar Melendez and Makey Pacius—who sought long-term career survival amidst the economic tumult, shrinking budgets and major studio closures of recent years. Melendez and Pacius were formerly on staff at the city's Unique Recording Studios, while Arrindell (a 2002 Grammy Award winner) worked with such artists as Gerald Levert, Aretha Franklin and Busta Rhymes. Then, Arrindell notes, "Things changed dramatically. The amount of major-label work is not as abundant as it once was."

Arrindell met Melendez and Pacius through mutual friends. "They were renting a small vocal room," Arrindell says. "They subleased, and the landlord asked them if they wanted to take over the entire space, which they did, but they didn't have that much equipment. At the time, I had just bought



From left: Makey Pacius, Ben Arrindell and Oscar Melendez

PHOTO: JOSHUA ELI SHAWNS

☼ Lonestar's 'Party Heard Around the World'

Keyboardist/producer Dean Sams says his band Lonestar's new album is the most collaborative project the country/rock group has made to date. The release came together during a two-and-

Some *Party* tracks were recorded in The Tracking Room (Nashville) by Niebank, and still more recording and mixing went down in Blackbird Studio D. It all happened in segments while

the band balanced the recording process with concert commitments and Sams' other production work. The final album, out now on Saguario Road Records, includes 10 tracks; two bonus songs are added to the version distributed by Walmart. Lonestar also went back into Sams' studio and recorded acoustic versions of

six of their hits for a limited-edition EP that will go to QVC customers who buy the album. "To be honest, whether we sell 5 million records or five records," Sams says, "this is the most proud I've been of any record we've ever done as a band because we did it as a band."

Hear a song clip and more from Sams about songwriting on the road at mixonline.com.

a-half year span that started with the bandmembers co-writing and arranging together in Sams' personal studio in Nashville. The first cuts were tracked and mixed by engineer Justin Niebank at Sound Kitchen (Franklin, Tenn.), which also hosted later mixing sessions with the band and engineer Jeff Balding, who used his own Pro Tools HD5 rig and Genelec 1031A monitors.



The members of Lonestar are (L-R): guitarist Michael Britt, keyboardist/producer Dean Sams, drummer Keech Rainwater and lead singer Cody Collins.

Paul Curreri's Music in a Panic ☼

The Creative process is different for everyone. Singer/songwriter Paul Curreri, who's based in Charlottesville, Va., says his bluesy rock 'n' roll recordings get made "in a joyful panic." Whenever he comes up with a song he feels might be worthy of recording, he goes into his home

studio—named Amanda's Spare Room for the roommate who vacated the space—and starts digging into Cubase 4 and a collection of assorted instruments. Guitars, bass, drums, piano, percussion, whatever suits the tune—Curreri plays every part himself.

"And I start celebrating because I think I might have something," Curreri says. "That means I pour a glass of wine, and then the window begins to close on the back end. As the celebration continues, there's a back window that's going to shut when I can't play anymore because I've had too much wine. It's done very quickly, but the room is



Singer/songwriter Paul Curreri is surrounded by guitars in his studio, Amanda's Spare Room.

small enough where I can reach everything and not move off of my big blue ball. There's something that's so insular and wonderful about that panicky moment, and in the morning I wake and see if I got anything. Sometimes I did, often I didn't."

California is the latest album to come out of Amanda's Spare Room, and though Curreri is beyond modest about his studio setup and his collection of "mostly crappy" instruments, this album is authentic, unrestrained, clever and charming. Check out song samples at mixonline.com.

—Barbara Schultz

Send "Sessions" news to bschultz@mixonline.com

by Matt Gallagher

a Sony DMX-R100 and I was working at my cousin's house doing mixing. They were like, 'Hey, do you want to get out of your cousin's basement? Let's open up a studio,' which is something I thought I'd never do." [Laughs.]

Sound Clash's myriad services include recording, mixing, mastering, video sync, vocal production/artist development, original production music, custom sound sets and an online mixing service. "We cater to the independent client," Arrindell explains. "The rent here in New York is astronomical so you need [to cultivate] other streams of revenue. We want to be able to sell artists' music on our Website so that we can get publishing and own partial copyrights. We do a lot of mixtape work and demos that people put out independently."

Sound Clash's modest equipment setup includes the DMX-R100, two Mac G5s stocked with soft synths, Pro Tools HD2 and LE systems, mics from Neumann and Shure, and a Focusrite ISA428 mic pre. "I am not a fan

of mixing in the box," Arrindell says. "We have 32 outputs coming out of Pro Tools directly into the console." He also prefers hardware effects units: "I've got a dbx 120XP, a [Lexicon] PCM 91 and SPL gear."

For artists and labels seeking discounted rates, Sound Clash offers two types of studio membership agreements. "If we like your song or project enough, maybe we'll do it on spec and hope to get some sort of money back from it once you start selling it," Arrindell adds. Additionally, Sound Clash offers Pro Tools instruction, a self-service vocal recording booth and a rehearsal space for bands. "We have a 24-channel Mackie mixer, a Pearl drum set, mics and a P.A. system in there," he says.

"There are projects out there, but you've got to hustle for them," Arrindell concludes. "Sometimes it's a headache, sometimes it's blissful, but you just keep doing whatever you can and try to make it work. It's really about trying to help people envision their dreams and get their music out there." III

CLASSIC TRACKS



Waylon Jennings

"ARE YOU SURE HANK DONE IT THIS WAY"

By Barbara Schultz

This month's "Classic Track," "Are You Sure Hank Done It This Way," is on Waylon Jennings' *Dreaming My Dreams*, the third album he recorded in the studio owned by his friend and fellow Outlaw Tompall Glaser, and the only record he made with legendary engineer/producer Cowboy Jack Clement.

"It was my concept of Waylon Jennings," Clement says of *Dreaming My Dreams*. "More earthy, and where he plays guitar himself rather than somebody else playing. He played some nice guitar on that album. He had a sound and a style. When Chet Atkins and some other people produced Waylon, someone else would play guitar and he would just sing. I heard him live and I knew that his real essence was playing guitar and singing at the same time."

"Jack thought my voice and guitar were one and the same," Jennings wrote in his 1996 autobiography, *Waylon* (written with musician/journalist Lenny Kaye). "They were a matched set. Coming from a guy who often said he was a sucker for good voices... that was high praise for my guitar...and when he got to mixing, Jack acted on the music, making it more theatrical, giving it a mystique. It sounded real strange to me when I first heard it back, but I liked it and went with it."

"Are You Sure Hank Done It This Way" definitely has that "mystique." The combination of layered guitars, thumping bass drum, a roomy reverb sound on Jennings' magnificent voice and the singer's clever original lyrics all create a very un-Nashville song that

honors Hank Williams, Jennings' first musical influence, and takes a tough stand against the status quo.

*It's the same old tune, fiddle and guitar
Where do we take it from here?
Rhinestone suits and new shiny cars
It's been the same way for years...we need a change*

*Somebody told me when I came to Nashville,
Son you finally got it made
Old Hank made it here
We're all sure that you will
But I don't think that Hank done it this
a'way...*

Though Jennings taught himself to play guitar listening to "Old Hank" on country radio, his professional career began with early rock 'n' roll. He was working as a DJ in Lubbock, Texas, when he met his close friend Buddy Holly. Holly produced some of Jennings' earliest recordings, and in 1959 he asked Jennings (then age 21) to put down his Telecaster, learn the bass guitar and join the Winter Dance Party package tour, which included several other performers.

The rest is one of the saddest, best-known stories in rock 'n' roll: On "The Day the Music Died," February 3, 1959, Holly was tired of the frozen confines of a tour bus and chartered a plane to take his band from Clear Lake, Iowa, to Fargo, N.D. Jennings was initially offered a seat on the plane, but gave his place to tour-mate J.P. Richardson (aka, The Big Bopper), who had been ill and dreaded spending another night on a cold bus.

Jennings wrote in *Waylon* that before leaving for the airport, Holly poked fun at Jennings, accusing his new bass player of being afraid to fly. Jennings wrote: "'Well,' he said, grinning, 'I hope your damned bus freezes up again.' I said, 'Well, I hope your ol' plane crashes.'"

After Holly's plane went down, killing him, Ritchie Valens, The Big Bopper and the pilot, Jennings was emotionally devastated by the loss of his friend and unsettled by feelings of guilt over the events leading up to the crash. He stayed away from music for a while, and then decided to go back to radio. He wrote later that at that time, he had "no intention of ever playing another note." But restless as he was, work in Texas was hard to come by and hard to keep, and he ended up moving to Arizona, and playing out to earn a living.

Jennings became a regular performer at a nightclub called J.D.'s in Phoenix. He signed

a deal with A&M and scored a few hits regionally. In 1965, Nashville-based musicians Duane Eddy and Bobby Bare heard Jennings and helped convince Chet Atkins to sign Jennings to RCA. Next stop, Nashville.

While making country albums for RCA, Jennings was finally coming out of the dark cloud he'd been under since Holly's death. He developed a stronger sense of his own sound and took increasing control over his own production. Albums such as *Lonesome, On'ry and Mean* and *Honky Tonk Heroes* were made in RCA Studio B under Atkins' supervision, albeit with an increasingly artist-driven approach.

In 1974, Jennings was still with RCA, but he began making his albums in Glaser Sound Studios, which he dubbed "Hillbilly Central." The studio was situated in the upper floor of an office building and was operated by a young engineer named Kyle Lehning.

Lehning says that the first time he met Jennings, the country star showed up at the studio with his road band, ready to record, completely without warning: "The first record we made in this studio was *This Time*," Lehning says, "which included the song by the same name; it was his first Number One single. The first time I met him, I was sitting in the studio, playing a Wurlitzer electric piano through my wah wah pedal into a Fender amplifier. Waylon walked in the door, and I looked at him, and the very first thing he said to me was, 'I hate those things.'

"I immediately turned it off, and he said, 'We're in here to record. This is the band.' Back in those days, the studio was set up and ready to go. We had a drum kit set up; we had everything miked. They weren't dragging in a lot of equipment off the road because all the amps and everything were already there. They basically plugged in, and in short order we were recording.

"The very first song we recorded was a J.J. Cale song called 'Louisiana Ladies,'" Lehning continues, "and being the young punk that I was, during the playback of that song, while the band was at lunch, I went back into the studio, turned back on the piano and the amplifier, and started playing piano through the wah wah pedal to the track they had just recorded. Then Waylon came back, and I thought, 'Uh oh, this is not going to go well.' And he said, 'Hey, come in here and show me how to run this tape machine and put that on this record.'

"That's the kind of guy he was. He was completely unfettered. If he liked something, if it felt right, that's what you did. That first album, *This Time*, Willie Nelson produced. It took about a week to make it. The second of the three albums I made with Waylon, *Ramblin' Man*, Waylon basically produced it. That's the one with 'Amanda.' That took about two weeks."

After *Ramblin' Man*, Jennings and band went back into Glaser Sound Studios with Clement to start *Dreaming My Dreams*. This record took seven months. And the sessions got off to a rousing

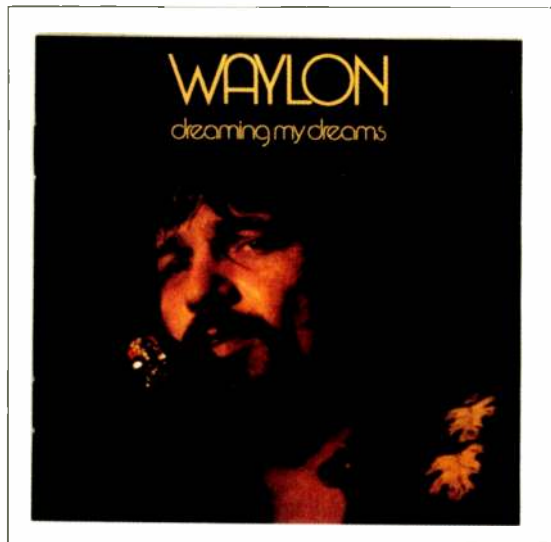
start: "I think I had maybe seen Jack Clement a couple of times before this, but I had never worked with him and had never really met him," Lehning says. "He came in the studio the very first night that we recorded. There was a producer's desk right next to the console, and he put a bottle of Jack Daniels down there and drank what looked to me to be about half of this fifth of whiskey. I thought, 'This is going to be interesting.' Then he lit up a couple of joints, smoked those.

"There was a great big blue talkback button right there on the producer's desk. Waylon and the band would start a song, and Jack would hit the talkback button and say, 'Muuuuuuuuuuuh,' and I would lift his hand off the talkback button.

"The guys all threw their headphones off and looked at me like, 'What the hell is going on?' And I would look at them and shake my head. So they started the next take, and he did it again. Waylon jumps up, and says, 'This isn't going to work, Hoss,' and they took Jack home. That was day one. But after that, nothing like that ever happened again. Jack was totally cool."

On the whole, the *Dreaming My Dreams* sessions were cut live. Lehning had Ritchie Albright's drum kit set up in a booth. Charles Cochran sat in front of the booth at the grand piano, with Duke Goff (bass guitar) and any guitar players (there were several guest guitarists on the album) arranged next to the piano.

"The studio was small, so there wasn't a lot of space between places," Lehning says,



Dreaming My Dreams was Waylon Jennings' first Number One album.

"and Waylon was at the center of all of this, playing electric guitar and singing live vocals into a Neumann U47 FET. Sometimes he would fix a vocal later, but sometimes it would be that live vocal on the track. The vocal chain would have been the preamp in the Flickinger console through an LA-2A and the FET U47.

"We had a lot of extra instruments around the studio, as well," Lehning continues. "[Waylon] would actually play my electric 12-string from time to time and run it through his Maestro Phaser—though mostly he would play his old leather Telecaster. And [pedal steel player Ralph] Mooney kept everything moving in a really sweet, gentle kind of way. He would always ask just the right questions to push things in the right kind of way."

The songs were captured to an MCI 16-track machine, but the project also made use of the studio's Scully 2-track. "Sometimes we would use tape delay into the [EMT] plate," Lehning says. "We had a lot of tape machines, and we even had an 8-track that I would use for slap, things like that. Ah, the good old days!"

Lehning also has fond memories of the Flickinger board: "That console sounded outrageous," he says. "Dan Flickinger was a guy who was way ahead of his time. He built these really interesting Class-A consoles; they were transistors, but they were Class-A. The Glasers had a 20-input console, and it was huge—one of those big, heavy-weight aircraft carrier-sized consoles with a big meter bridge where I could place the

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KLH monitors."

Outboard processing gear at Glaser Sound included UREI 1176 and LA-2A compression, and a Pandora digital delay that Lehning says may have been used on this album ("but definitely not on vocals"). The studio was fitted with JBL 4320 mains, but Lehning says he and Clement mostly mixed on that pair of KLH Model 6s.

It was during the mix that "Are You Sure Hank Done It This Way" took on the "real strange" quality that Jennings acknowledged set Clement's production apart from other country recordings of the time.

"I took that song in a different direction while [Waylon] was away one night," Clement recalls. "I'll do that—get in there and experiment—and this was one that I messed with. We cut the track, and then some time later I put my own rhythm guitar part on it, and it wound up different than how it started. Waylon loved it, and that's how the record ended up."

"Hank" ended up being Clement's favorite track on the album, as well as a fan favorite: It reached Number One on the *Billboard* Country Singles chart, and *Dreaming My Dreams* was a Number One country album. Clement and Jennings never worked together again officially, but they remained personal and musical friends.

Lehning left Glaser's studio after *Dreaming My Dreams* to become an independent engineer/producer. He went on to tremendous success with artists such as England Dan and John Ford Coley, George Jones, Ronnie Milsap and Randy Travis, whom he's produced regularly since 1986.

Jennings followed *Dreaming My Dreams* with the seminal *Wanted: The Outlaws* collection that also featured his wife, Jessi Coulter, and friends Glaser and Willie Nelson. All told, Jennings cut more than 50 albums in a nearly 40-year career. Jennings suffered from RSI late in his life, and was no longer able to play guitar when *Mix* interviewed him in 1998. He also suffered from diabetes and died of complications of that disease in 2002.

"*Dreaming My Dreams* is my favorite album I've ever done," Jennings wrote in '96. "Whether it was Clement experimenting, or the sense of possibility I felt settling into Tompall's upstairs studio, surrounded by friends...it was a special moment in time, hanging at Tompall's, being brothers." III

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Live

PHOTOS: PAUL NATIGIN



From left: Singer/guitarist Matt Bellamy, drummer Dominic Howard and bassist Chris Wolstenholme on their risers. Not pictured: keyboardist Tomo Milner.

Muse

STRONG SOUND IN A 360-DEGREE PACKAGE

By Carolyn Maniaci

Muse is a band with its eyes set on the stage. Since the band's debut studio album in 1998, it seems that the bandmembers' moody, fantastical, prog-laden music has been tailor-made for mind-blowing live shows. From their 2007/2008 tour for *Black Holes and Revelations*, they were honored with numerous awards for Best Live Act by NME and others. Following that tour, they went back to recording, and as their newest release, *Uprising*, came to life in the studio, the vision for their new live show also germinated.

Playing a show in the round at Royal Albert Hall during that last tour sparked an idea. The band loved having the audience all around them, but they wanted every person in the audience to experience all of the performance's sights and sounds. The round stage is equipped with

three square hydraulic risers that lift each band-member some 20 feet up. Each riser is met by a four-sided rigging from above, and the risers and upper riggings are both swathed in LED video. During parts of the show, the lifts bring the musicians down to stage level, and singer/guitarist Matt Bellamy and bassist Chris Wolstenholme make use of stationary risers on the sides of the stage to make contact with the fans. Though in a fixed position in center stage, drummer Dominic Howard and his kit sit atop a riser on a rotating disc so that he, too, can connect with the crowd.

Bring in the Sound

Once the stage design was sketched out, system engineer Paddy Hocken and front-of-house engineer Marc Carolan assembled an audio pack-

age (supplied by UK-based Skan PA Hire) that would deliver the sound in the round. Wanting to provide a consistent 360-degree scenario, they spec'd d&b's J Series and Q Series. They're using the same speakers all the way around the stage in right- and left-front hangs, and side hangs; around the back, a 270-degree hang and 360-degree hang are on each side. Each fill comprises a blend of J8s and J12s. The center hang comprises six d&b Q1 two-way speakers. Around the back, they use more of the wider-dispersion J boxes to get the coverage and because the audience is very close to the hangs. In some instances (where weight and trim allow), they fly J-SUBs above the hangs to enhance low end in the back seats.

Beneath the stage, 18 J-SUBs are arranged in an arc array. Carolan is very pleased with the J-SUBs' ability to pump out time- and phase-controlled low end without building up any sub pockets, as well as keeping the stage above isolated from excessive vibration. A handful of Q10 two-way speakers are stacked with the sub array to fill gaps in the lower parts of the arena. To give full, even coverage in the pit, Carolan arrays the center hang in a combed pattern, angling the Q10s alternately left and right. He puts up only one left/right mix instead of adding discrete mixes for the center cluster or other zones. "I used to use a mono center cluster, but when instruments were panned, they sometimes created a build-up in the center area," Carolan explains.

Hocken is using Ascendo Room Tools to time-align the system. "We get a very small window of opportunity to make noise, perhaps 15 minutes to check with CDs," Hocken explains. The Ascendo system produces only a discrete, sweeping "whoop" tone that is almost silent. "I can get to that any time in the day, and it only takes about half an hour," Hocken continues. "I don't have to ask permission to make noise because it ramps up slowly. If someone's in the air, they're not going to get stunned by it." Afterward, he can make good use of that 15-minute window to properly listen to music.

At FOH, EAW Smaart 5 is running, overlaid via the Dolby Lake Analyzer Bridge onto the Dolby Lake Controller that serves as the system's main EQ. Carolan and Hocken don't rely heavily on this aspect of the system as they're playing virtually identical arenas and because the J line has proven to be so consistent.

The d&b system is powered by 96 D12 amplifiers. They use the Apogee Rosetta 800 for A/D conversion coming out of the Midas XL4 FOH console. This then feeds through the Dolby Lake EQ before going out to the D12s as an AES/EBU 96kHz signal. In case of system failure, they are



From left: Ted Bible (P.A. tech), Richard Gibson (monitor/RF tech), Paddy Hocken (system engineer), Nigel Pepper (P.A. tech), Marc Carolan (FOH engineer, seated) and Oliver Gross (P.A. tech)

equipped with fully redundant Apogee and Dolby Lake components, and the D12s are also wired with analog inputs.

Back to the Band

Muse's music is at once distortion-laden and crystal-clear—they get a big, big sound for a three-piece. (They do tour with the addition of keyboardist Morgan Nichols to fill things out.) When *Mix* stopped by the tour at Chicago's United Center, we asked Carolan how he achieves good separation as the band uses distortion on guitar, bass and vocals. Carolan answers: "Using very different mics on each thing supports the character of the individual instruments, making it all gel while defining everything."

On bass, Wolstenholme plays through two rigs. His "clean" rig is set up with a Beyerdynamic M88 and a DI on the back of the head. For the distorted rig, Carolan places a Shure SM7 about six inches from the cone because the mic handles the grunt of the distortion, even with heavy gain.

Drum miking is in a standard configuration, though Carolan uses a Neumann KM105 for snare bottom. He says it was a happy accident when he discovered that the KM105, although mainly a vocal mic, gives the snare a nice balance between low rattle and high-end ping, and the shape of the mic makes for easy positioning.

Frontman Bellamy designs his own guitars, which are custom-built by Hugh Manson. These masterpieces have lots of built-in effects, which he uses liberally to create the band's signature sound. And it's all coming out of one Mills Acoustics cabinet, and Carolan uses a Royer R-122L paired with an sE Electronics Reflexion filter.

As for his mixing, Carolan keeps things simple. On guitar, he keeps the channels mostly flat and applies only a small amount of compression. To ensure good separation, he keeps levels balanced and uses subtle panning to unlock instruments from the center image. In some instances, he pushes the level of a part just above the listener's comfort level to make it pop out and give dimension to the mix. Within any Muse song, there are several parts and movements with different feels, so he does make heavy use of automation to make it possible to keep the mix dynamic.

As the stage doesn't have wings, monitor engineer Adam Taylor is situated in a bunker below the stationary riser at stage left. He keeps visual contact with the band via a video monitor; he can also see them through a grille in front of his desk, unless they're standing directly above him. Taylor keeps their mixes straightforward, working on a Midas H3000 desk paired with a Digidesign Profile, which handles automation and supplies standard delay and reverb onboard.

All musicians use Sennheiser G3 in-ears. Taylor employs a Hanning frequency analyzer to monitor radio bandwidth. Bellamy uses a Dickinson guitar amp (loaded with d&b M12 drivers) for feedback during a couple songs, but Taylor mostly keeps it muted. For bass, a J-SUB hangs inside the lift directly below Wolstenholme's riser so that he's standing on top of it and two with custom chrome grilles point straight at him for when he is at stage height. Howard has two L-Acoustics dV-SUBs for low end that he's been using for years, and these are placed on the back of the drum riser. III

Carolyn Maniaci is a Chicago-based freelance writer.

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SOUNDCHECK

Musicians Institute Adds SR Track

Musicians Institute's (Hollywood) new Live Sound Production Program will begin with this year's summer quarter. Students working toward

forcement, live recording and mixing, console operation, monitors, lighting and video, and stage and tour management. The complete program is three quarters long and students earn 45 credit units.

The facilities include the 500-seater MI Concert Hall, which is used for concerts and seminars by visiting guests, as well as for student performances and workshops. The hall features a Digidesign ICON and is equipped for video and audio recording. Students can also use two 1,000-square-foot performance rooms, each equipped for workshops with stage, lighting, P.A. system, amps, keyboards and a drum set. The Passage is a 125-person live performance facility located adjacent to Hollywood Boulevard. Glass doors can be opened to connect the space to the adjacent outdoor seating area.

Teachers for this track include Ted Blaisdell (FOH engineer at Agape International Spiritual Center, Culver City, Calif.), Michael Watson, CEO of M2M Media Productions, Carlos Torres (*Lopez Tonight Show*), Joe Fiorello (formerly of House of Blues Live, Hollywood), FOH/monitor engineer and production manager Herman Leijte (LL Cool J, Aretha Franklin, Green Day) and Sean Lyons (lighting director, designer, technician).



The MI Concert Hall features a Digidesign ICON.

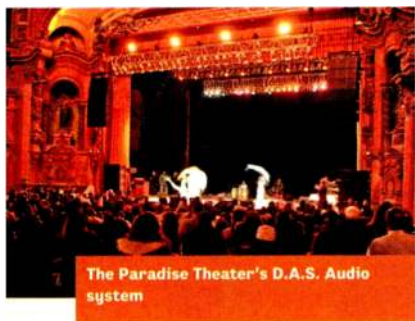
a certificate in Audio Engineering (Live Sound Production) will have a curriculum that combines two quarters of training in audio recording and production, with an additional quarter of hands-on study in all aspects of audio production for live events—from clubs to large concerts.

Courses cover such areas as sound rein-

fix it

AVS Production Group Engineer Fernando Garcia

The [New York Paradise Theater's] architecture limited the amount of weight we could fly, and this is where the [D.A.S. Audio] Aero 50's flyware became a tremendous asset in helping us address this issue. The D.A.S. bumper used to fly the Aero 50s is surprisingly small and light compared to many systems from competing manufacturers. This helped tremendously, as we had no issues raising the cluster up to the height we wanted. Many competing systems use much larger grids that are simply too wide and thus compromise the ability to fly the loudspeakers at the height we wanted without hitting walls or the ceiling. The D.A.S. setup is essentially a clamp, so it doesn't occupy as much space. While we have equalization available, I find that we use it very sparingly. We're now experiencing even coverage throughout all areas of the theater, and speech intelligibility is first rate. Best of all, we don't need to blast the system to fill the room. We work with SPLs that are appropriate to the nature of the act and the size of the audience. When we need to raise the levels, we have plenty of headroom to work with.



The Paradise Theater's D.A.S. Audio system

tour log



Front-of-house engineer Brian Speiser



Emily Saliers (left) and Amy Ray

PHOTO: JEREMY COWART

Indigo Girls

The Indigo Girls (Amy Ray and Emily Saliers) are back out on tour with front-of-house engineer Brian Speiser, who discusses the challenges of miking the duo's instruments.

"The Indigo Girls play some of the most beautiful-sounding Martin and Gibson acoustic guitars. The problem I faced was making the pickups in their guitars sound like the front of their guitars. I experimented with placing different boutique condenser mics in front of their instruments—clamped to their mic stands—but this was quite unsightly from an audience perspective. Even worse, I rarely had enough gain before feedback that would enable me to get the warm wood sound I was looking for.

"The [band] did a show in Alaska a couple years back and the house had a pair of Earthworks SR30s. While they were too big for our purposes, I tried them and was absolutely blown away by their capabilities. Their cardioid pattern provided so much headroom that I could turn the mics up louder without picking up as much crowd noise or much of the sound from the stage monitors. This discovery led me to investigate what Earthworks options might exist that would deliver comparable performance, but with a low-profile form factor, and this led me to the Earthworks P30/Cs.

"With the tight pattern and full range sound of the P30/C, I'm able to get a lot of clean guitar sound with very little bleed from other stage or crowd noise. These mics can barely be seen, and with their goosenecks I'm able to position them closer to the instruments than I've ever been able to in the past. I then blend the sound acquired with the P30/C with the sound coming from the guitar pickups. By combining them, I'm able to achieve a guitar sound comparable to those on their recordings."

H.O.W. Seminar Announced

If after reading the "House of Worship Install" stories on page 26 you've found yourself more intrigued by the systems that go into these installs, then sign up for the Worship Arts Technology Summit (WATS) on June 14 to 16, 2010, at the Biola University

be on hand for the in-depth three-day tracks that include Audio, Musician, Lighting, Media and Vocal. All skill levels are welcome, as the training will be presented in structured technology tracks, allowing attendees to begin with the basics and build upon them



campus (La Mirada, Calif). Sponsors include Yamaha Commercial Audio Systems, Elation Lighting, Shure and Media Shout.

The seminars will offer product and technical training to church technicians and musicians seeking in-depth technology training for audio, musicianship, lighting, recording and media presentation. Summit sponsor experts and leading worship musicians will

with a series of increasingly advanced class offerings. These sessions will offer hands on participation, focused teaching and certification.

Space is limited, so sign up early. An early-bird special is being offered for those who register before May 14. Find out more at www.youthbiola.edu/ministry/conferences/wats/

load in

For *The View's* new SR system, sound designer Dan Gerhard spec'd an L-Acoustics rental package comprising 26 KIVA enclosures split among seven arrays collectively processed and powered by four LA4 amplified controllers. Gerhard worked with PRG's Bob Rendon and Matt Bell.

Megadeth FOH engineer Doug Short jumped into the digital world by taking out a Midas Pro6 for the band's current tour...Foreigner vocalist Kelly Hansen on using Beyerdynamic Opus Series wireless mics onstage: "I don't want hyped midrange or narrowed spectrum to assist in feedback rejection; I want to hear what I'm putting out, and Beyer does that in a big, warm way."...College Hill Productions supplied the live sound services for the Auckland date of *Big Day Out*, which featured two main stages next to each other, enabling one act to perform on one stage immediately following the conclusion of another performance on the adjacent stage. FOH system engineers Kevin Bennett and Leon Dalton used a 96-channel Soundcraft Vi6 console with fiber multi-cores; a third was used by Groove Armada in the dance tent...Rihanna is out promoting her latest album, *Rated R*, singing through a Sennheiser SKM 5200 handheld with dynamic MD 5235 capsule.

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Radian Apex Monitors



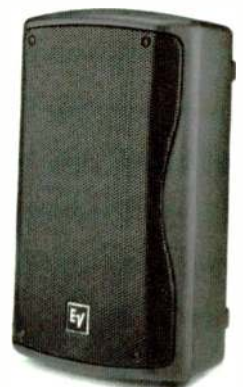
The Apex Series of ultracompact, passive two-way floor monitors incorporate Radian's top-end coaxial 12- or 15-inch neodymium loudspeakers with 2-inch exit-compression drivers. The low-profile enclosures are almost half the size of many conventional stage monitors and feature 500W RMS power handling, 13-ply Baltic birch construction and a hidden cable-management system to prevent accidental damage to its twin NL-4 connectors.

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www.electrovoice.com



ALL ACCESS

Photos and text by Steve Jennings

Killswitch Engage



While not playing with their original line-up—vocalist Phil Labonte

of All That Remains has been filling in for Howard Jones, who had to leave the tour to attend to personal matters—rockers Killswitch Engage still brought the house down, blasting out tunes from their latest self-titled offering. *Mix* caught up with the band and crew at San Francisco's Warfield Theatre.



On this tour, the opening acts and Killswitch Engage are all mixed on the same board, so front-of-house engineer Jordan Coopersmith opted for a DigiDesign D-Show. "I like the larger work surface, but the trade-off is a footprint as large as an analog console," he says. "We run two splits—one Killswitch Engage and one support—so everyone gets the inputs they need. The console is quite user-friendly and the processing versatility is unmatched."

Coopersmith uses the stock Fairchild and Bomb Factory plug-ins, and not much else because "I don't want to request a bunch of high-end stuff for my touring console and go to a fly date or festival and find that I

have a totally unsupported column of plug-ins. I prefer to have the consistency and a lot of the stock gear function well. For outboard gear, I run my matrix L/R to a Lake Contour system. Other than that, I use two TC [Electronic] 2290 delay units."

While the tour is not carrying racks and stacks (a Meyer Sound MILO system is installed at the Warfield, while Scorpio Sound provided the rest of the gear), Coopersmith is hauling along six d&b B2 subs. "In the Warfield we had to stack them angled outside the house subs," Coopersmith explains. "We were concerned we would have cancellation issues, but we got them timed right and it worked quite well."



Bassist Mike D'Antonio uses an Ampeg SVT-VR bass head. "We don't mike his cab anymore; we're currently using three DIs: an Avalon, a rackmount SansAmp and the DI on the bass head," says guitar/bass tech Josh Mihlek.



Fill-in vocalist Phil LaBonte sings through an Audio-Technica AEW T5400 wireless handheld with a condenser capsule.

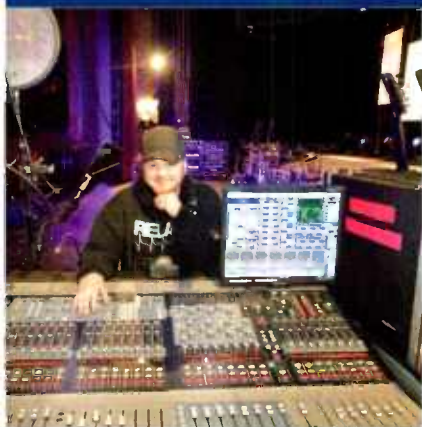
Guitarist Joel Stroetzel (above) uses a Splawn Nitro 100-watt head with KT-88 tubes for his main tone, and a Fuchs Clean Machine 1x12 combo (above, left) for his clean tone. "We are using an Audio-Technica AE 2500 dual-element mic for the dirty tone and an Audio-Technica 4040 for the clean tone," says guitar/bass tech Josh Mihlek (stage-right). "Joel uses a Maxon OD808 overdrive pedal and a Boss NS-2 Noise Suppressor on his Splawn, and Maxon AD-9 analog delay pedal and compressor/limiter pedal on his Fuchs." Stroetzel sings through a hard-wired Audio-Technica AE6100.



Guitarist Adam Dutkiewicz plays through a Fender Twin combo amp primarily for clean tone parts only. Guitar tech Tom Cavanaugh (above right) mikes it with an Audio-Technica 4040. The main amp (dirty tone) is a Splawn Nitro that is powered with KT88 tubes. "Also in our rack is a Fender EVH III amp strictly for a backup, then a Straight Mesa Boogie Recto 4x12 guitar cabinet [top] loaded with Celestion Vintage 30 speakers," Cavanaugh says. The Mesa Boogie is found understage, miked with a Shure SM7 and a Heil PR 40. "We use an Audio-Technica 5000 Series wireless system, a Korg DTR-2000 rackmount tuner, a Furman PL-Plus C power conditioner and a rackmount Whirlwind multi-selector. The pedals are a ISP Decimator noise-reduction unit in the effects loop; then in-line, we use a Boss NS-2 noise suppressor pedal, a Maxon OD808 overdrive pedal and an AD-9 analog delay pro pedal, a Whirlwind A/B selector pedal and a Boss TU-2 chromatic tuner in which we run in the front for tuning if the rack is set offstage."



According to drum tech Sean McCall (right), Justin Foley's kit is miked with Sennheiser 901 and Heil PR40 (kick), Audio-Technica AE3000 (snare top/bottom, rack tom), AT4021 (hi-hat, ride), AT4040 (floor toms), 4050 (overheads) and Shure Beta 98s (cowbell, crash, china).



Monitor engineer Nate Moore mixes on a Digidesign Profile loaded with the standard VENUE Pack Pro plugins, including Smack! on vocal channels, BF76 on bass and Fairchild 660 on snare. "All the IEM outputs have the Digidesign EQ 3 for small tweaks and the impact to keep things under control," Moore adds.

The band uses Sennheiser EW G2 300 IEM units with Sensaphonics 2MAX molds. All wireless mics and instrument wireless are the Audio-Technica 5000 Series.



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I/O, DSP Explosion

Solid State Logic C100 HDS Version 2 Console

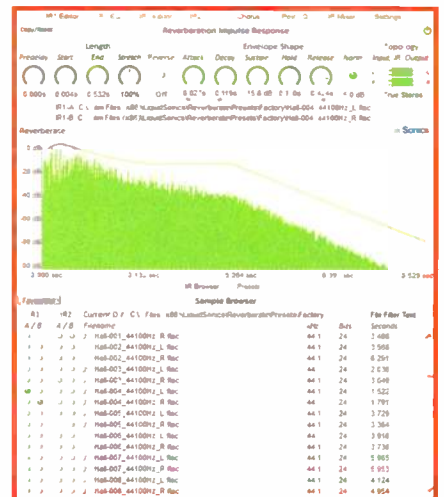
Unveiled at last month's NAB show, the C100 HDS V. 2 is SSL's (www.solid-state-logic.com) newest broadcast console upgrade, with a new processor option for the Blackrock processing unit and Blacklight, the company's new optical I/O format. The new higher-capacity CPU card greatly expands processing power to cover full DSP options to the increased number of regular channels available. The new interface delivers four times the channel count of MADI on a single connection, employing the same easy and familiar LC optical connector. A fully configured C100 HDS with the V. 2 upgrade (priced per configuration) is capable of delivering up to 512 sources to the mix bus.



Something Old, Something New

Milab DC-96C Microphone

The DC-96C (\$TBA) side-address, large rectangular-capsule mic from Milab (www.milabmic.com) is designed for both live and studio use. An upgrade of the DC-96 series that was originally released in 1967, the cardioid-only "C" features the capsule from the DC-196 and has a single-layer mesh grid. The transformerless design takes up to 144dB SPL, offers a switchable 12dB pad, and ships with a windscreen, stand adapter and lifetime warranty.



New, Inside and Out

ADAM AX Series Monitors

These four new AX-Series monitors from ADAM (www.adam-audio.com) boast redesigned cabinets, new woofers and amps, plus the company's X-ART ribbon tweeter. The line ranges from the ultracompact A3X (4.5-inch LF driver, 25W x2) to the high-performance A5X (5.5-inch midrange/woofer, 50W x2), A7X (7-inch midrange/woofer, 50W/100W) and A8X systems (8.5-inch midrange/woofer, 50W/150W). AX Series woofers feature larger voice-coils and more power for greater linear excursion and higher output. All models have beveled upper corners to minimize reflections and front porting. Retail prices for each speaker are A3x, \$299; A5x, \$449; A7x, \$599; and A8x, \$899.



Propagating Processor

LiquidSonic Reverberate

Reverberate (\$50) from LiquidSonic (www.liquidsonics.com) is a convolution audio processor offering true zero-latency operation for two separate impulse responses. It promises a more dynamic-sounding reverb by optionally modulating an amalgamation of two separately controllable, true-stereo IRs using an LFO. Impulse responses can be edited using ADSHR curves, pre-delay, cropping and re-sampling for precise envelope and length control. An integrated sample browser provides a rapid means of auditioning existing IR libraries, and the internal preset management helps to navigate the 48 supplied presets quickly. Reverberate is available for AU on Mac and VST on Mac and PC.



Near-Field Redux

Dynaudio BM5A MKII Monitors

The newly redesigned BM5A MKII (\$715) from Dynaudio Acoustics (www.dynaudioacoustics.com) features a new 7-inch driver, high-resolution soft-dome tweeter and a dual 50W amp delivering 117dB SPL. Three integrated analog room filters allow for adjustment and compensation at low, midrange and high frequencies, and there is also a (60/80Hz) HPF and a +4/-10 sensitivity switch.

I/O for HD/SD

Yamaha MY8-SDI-ED Interface Card

Compatible with all Yamaha (www.yamahaca.com) digital mixers and DME Series digital mixing engines, the MY8-SDI-ED (\$3,000) offers from eight to 64 I/O channels, and provides input and output of HD-SDI-embedded audio signals. Featuring one HD/SD-SDI input, two HD/SD-SDI outputs (same signal) and one through-output (re-clocked), each MY8-SDI-ED card is able to de-embed up to two of the four audio groups (four channels per group for a total eight channels), multiplexed in an HD-SDI signal, and can embed two audio groups into an HD/SD-SDI signal for output.



Virtual Manley

UA Massive Passive EQ Plug In

New for the UAD-2 platform is the Manley Massive Passive (\$299) plug-in from Universal Audio (www.uaudio.com). This virtual version of Manley's popular



2-channel, 4-band equalizer uses design strengths from choice console EQs, as well as graphic, parametric and Pultec EQs, and can provide radical tonal shaping, delicate vocal shading or subtle mastering enhancement. It's available as part of the new UAD Software Version 5.6 release, which also includes the EMT 140 Plate Reverb and the Precision Enhancer Hz plug-ins, as well as additional performance enhancements for all UAD-2 users on the Windows platform.

Fab Four

UA 4-710D Microphone Preamps

The 4-710D (STBA) from Universal Audio (www.uaudio.com) offers four Twin-Finity mic preamps with true-bypass 1176-style compression. Like the original single-channel unit, the 4-710Ds each allow for continuously variable tone shifts between 100-percent tube and 100-percent solid-



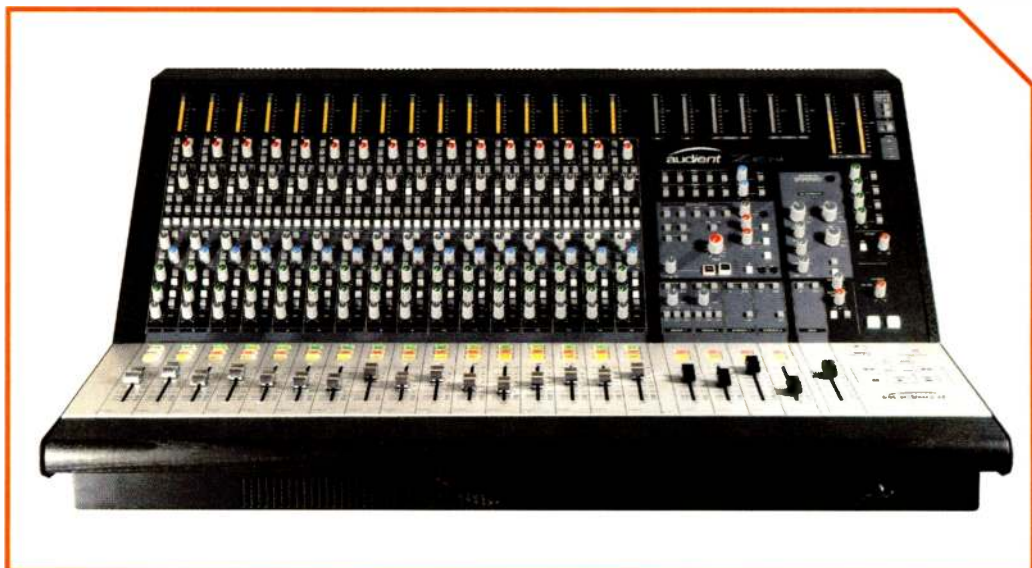
state amplification. The new unit also brings a newly designed 1176-style compression/soft-limiting circuit per channel, eight channels of 24-bit/192kHz A/D conversion, digital output via dual ADAT optical or AES/EBU DB-25, and balanced send/return inserts. III

Audient Zen Console

Analog Desk Offers Custom Options, DAW-Friendly Features

The all-analog Audient Zen is the little brother of the English company's large-frame, in-line ASP8024 console. David Dearden and Gareth Davies, the founders of DDA, designed both desks. The Zen console is purpose-built for DAW-based studios and retains many of the ASP8024's pro features, but at a much lower price.

Zen's powder-coated, all-steel case has a footprint of about 29 inches square and is 11 inches high. The top control surface is hinged and lifts up like a car hood for access. Zen has an internal switching power supply that's convection-cooled—no fans.



The Audient Zen offers 32 faders, an onboard VCA stereo compressor and many routing options.

Zen Options

The console's back panel is populated with quality XLR and TRS audio connectors—no DB-25 connectors here. If the back of the console is kept accessible, it is usable as a patch-bay with all inputs, outputs, insert points and monitoring connections readily available.

The Zen is a dual-input design with 16 100mm Alps faders; it accommodates up to 32 channels to the stereo mix bus via the DAW input and the Alternate Input path on each channel strip. It has 16 mic preamps and comes with/without HUI-based automation and 100mm motorized faders replacing the stock faders.

The 16 mic pre's offer switchable 75Hz highpass filters, direct XLR outputs and up to 66 dB of gain, plus an additional 15 dB avail-

able within the channel strip. They are the same Class-A preamps with discrete transistor input stages that are used in Audient's ASP8024 console and the ASP008 8-channel mic preamp unit. There's a stereo A/D converter option with both AES/EBU and S/PDIF co-ax and Toslink outputs. The ADC supports up to 96 kHz (or 192 kHz under external word clock). Zen is upgradeable to 5.1 mixing if you connect an Audient ASP510 surround monitor controller to the DB9 connector on the back of the console.

Pro Channel Strip

Each Zen channel strip features four direct channel-output routing options, individual channel VU meter select, polarity flip, insert in/out, channel line/DAW input flip and alternate input routing. This console has no onboard equalizers or globally switched pre-configured operating modes.

Parallel processing is possible on every channel strip through use of the always-active channel insert send output. This would connect to a processor input, with the returned processed audio routed to the alternate input

path to be summed with the original signal into the stereo mix bus.

Also standard are eight bus/group outputs: a stereo master mix bus, two additional stereo buses and two mono buses. All group/buses have inserts with a unique, switchable parallel summing mode where the unprocessed send signal is summed equally with the processed signal coming back on the insert return.

There are also four aux sends with full +4dB line-level outputs suitable for deriving additional mixes or feeds to pro gear. There are insert patch points available for all of the buses, as well as a back panel stereo mix bus. As Zen can simultaneously send and return audio to multiple designations, you do not lose a certain function at the expense of gaining another.

An onboard VCA-based stereo compressor/limiter is normaled across the stereo mix bus, but you can repatch it across any channel(s) or buses. Looking like the famed SSL bus compressor, this compressor is similar to those used in Audient's ASP8024 and Sumo products.

PRODUCT SUMMARY

COMPANY: Audient Ltd.
PRODUCT: Zen Console
WEBSITE: www.audient.com
PRICE: ZEN16MP, \$10,400; ZEN16MPMF, \$12,300

PROS: 32 channels to analog sum, HUI automation, flexible routing.
CONS: Uses MIDI for HUI.

The monitoring section has talkback with built-in mic, slate and cue/routing systems, and Solo in Place, AFL and PFL solo modes. The features continue with polarity invert, mono summing of the monitor speakers, L/R speaker mutes, four external stereo audio sources including a handy jack for an iPod, three different monitor speaker sets, adjustable dim and mute buttons, and a set of recessed trim pots for setting an 85dB SPL calibrated monitoring level switchable at the touch of a button.

Zen on the Work Site

I set up the console right on top of my existing Raxxess desktop table. The 100mm faders overhang the desktop with enough space for my QWERTY keyboard and trackball to reside underneath.

Tracking with the Zen is a breeze; it's clean, quiet and simple to set up and record any number of musicians. The 16 mic preamps let me record in the "1-track/1-mic" mode while using the remaining six buses for

mixing multiple orchestral microphones to stereo tracks. The 16 mic preamps sound good: They are quiet, clean, thick and warm. I found them especially good for drums, percussion and guitars.

I found that the stereo compressor would "vibe up" the sound as I cranked it up. With the Wet/Dry control, I could get just the right amount of stereo mix compression—or more for radical drum bus processing.

During the session, at a musician's request, I was able to do a mix plus "more me" directly from the mic channels, as any aux or cue send can also feed the mix bus.

Zen also has a DAW mix input that's useful for working quickly. If you pre-make cue/monitor mixes "in the box" for all songs, you can jump from song to song quickly when a musician's time is too precious to waste on stopping to make a new board mix for each song. Simply feed DAW 1-2 monitor outputs directly to the console's DAW mix XLR inputs.

For mixing, I was impressed with the

console's elaborate routing abilities. Simple button-pushes replace most patching. For example, you can route the two additional mono bus outputs and/or the two additional stereo buses into the main mix bus for parallel processing or for folding submixes (stems) back into the main mix bus. No additional channel strips are required.

Automation

I worked the HUI protocol-based set of 16 motor faders, Mute and Solo buttons, transport controls and the Automation On/Off feature to death. It is responsive, fast and accurate, and the Auto On/Off feature works great for auditioning, presetting fader positions and then dropping them all into the DAW mix automation on the fly. All of the DAW's capabilities—write, touch, trim, mute, etc., including graphical breakpoint editing—will be sent to the 16-channel motor faders in Zen.

Other console features include Solo Safe buttons that toggle between Solo Isolate

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(where selected channels remain unmuted when other solo buttons are pushed) and Automation Safe for locking a channel from any automation changes.

Zen uses two sets of MIDI connectors (eight channels per MIDI cable) to communicate HUI information to the host DAW. This requires a MIDI-to-USB interface box, such as M-Audio's MIDISport 2x2. I hope to see these MIDI jacks soon replaced with an Eth-

ernet connection.

I fed 16 channels at full level from my DAW interface to the 16 channel line inputs. If you have 16 additional (for 32 total outs) channels of I/O, you can feed the DAW inputs, switch to the Alternate Input path in the channel strip, and have 16 more inputs for effect returns and static track elements—things that change little or not at all during the mix. If needed, I'd use conventional "in-the-box"

automation for level changes on these.

I found another automation process good for mixes that I had already developed "in the box" but wanted them to gain the benefit of analog summing. I stemmed out my in-the-box mix to 16 outputs. Because stereo tracks, hard-grouped tracks or VCA-grouped tracks from the DAW are controlled by single faders, by carefully arranging groups and tracks, you can affect motor fader control over very large track counts. In this scenario, I fed the 16 audio tracks to the alt input path in each channel strip; the motor faders will not be passing any audio.

To set up Zen accurately and for perfect recall, I first sent a -18dB tone out all 16 channels so that I could individually adjust the levels of each channel's alt input that were sent to the mix bus to a -18dB level on the mix bus meters.

As a nod to the precision of the console's electronic design, manufacture and component tolerances, I saw that all of Zen's control knobs were in exactly the same place. With all 16 channels at unity, I was now ready to send the 16 channels of audio into Zen—this time, the 100mm motor faders were working only as controllers to set and ride levels inside of my DAW.

It's Changed Me

I've had the pleasure of living with the Zen console for more than a month now, and I've fully integrated it into my process. It's allowed me to return to analog console mixing, but I never felt like I had to adapt my process due to any hardware shortcomings or non-recallability.

I am constantly amazed at the difference the Zen console has made in the sound quality and precision of my mixes—it is not subtle. Individual track elements are more present, firmly locked in their panned positions, and my mixes seem sonically 3-D in the way they "leap out" of my monitor speakers.

I'm enjoying the advanced technology of DAW music mixing with complete recall and plug-in processing, using vintage analog processing and getting that indescribable "mojo" that happens when analog audio signals sum and mix within superb electronics. III

Barry Rudolph is an L.A.-based engineer. Visit him at www.barryrudolph.com.



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Focal CMS SUB

Low-Frequency Extender Adds Big Sound to Near-Fields

The CMS SUB is Focal's companion subwoofer to its CMS line of active pro audio monitors. For this test, I paired the CMS 65s with the CMS SUB. The CMS SUB's light, rigid, 11-inch Poly-glass cone woofer is made from a layer of hollow glass spheres on top of a paper cone. This sturdy, 50-pound, 17.1x14.4x17.3-inch (HxWxD) sub has a 300-watt amp producing 113dB SPL peaks at three feet, with a response that is accurate within ± 3 dB from 30 to 250 Hz. Left and right ins/outs and an independent LFE input are on balanced XLRs. Controls include continuously variable rotary level adjustment, polarity reverse, variable phase control, mute switch, mute footswitch port and variable lowpass adjustment.

Get Smært

I used Rational Acoustics' Smært software to align the CMS SUB with the CMS 65s. I first mounted the L/R monitors on a sturdy I-beam shelf over the meter bridge of an SSL 4056 E/G Series console. The medium-sized control room has a large window at the front and bass traps at the back. Due to a lack of options from traffic and space, I placed the CMS SUB under the back of the console with the speaker firing at the listening position and removed the protective metal screen. I connected the console's control room outs into the CMS SUB and then out into the CMS 65s. To start, I set the sub's lowpass to 90 Hz, set the level at 10 o'clock and engaged the mute, leaving the phase and polarity switches alone until I got Smært involved. The CMS 65s have 45/60/90Hz highpass filter options, plus desktop shelf and high/low-shelf options. I set the CMS 65s at 90 Hz and left everything else flat.

The crossover points looked close but the phase was significantly misaligned compared

to the CMS 65 traces. The speakers were tested one at a time and traces stored. The traces showed a considerable dip at 700 Hz, so the speakers were removed from the console and placed on Sound Anchor stands behind the desk at the same height to reduce the dip by taking the console's reflection out of play, which did improve the response. The L/R speaker positions and stands were adjusted until the Smært traces were in near-perfect alignment. (Go to the "Mix Media" section at mixonline.com to see Smært traces.) Next, the CMS SUB was isolated and traces were stored in Smært. The crossover points looked close, but the phase was significantly misaligned as compared to the CMS 65 traces. The variable phase control and lowpass filter on the CMS SUB brought phase into alignment and the system was dialed in. It's important to use Smært or something similar to set up a control room in this fashion. The difference—before and after Smært—is substantial.

Finding Bottom

I used the Focal 2.1 system for playback of pre-mastered material and during tracking sessions to analog tape and Pro Tools. I was looking for a seamless transition between the sub's extended bottom and the near-fields, and I found it. There were times when I'd have to walk back and raise or lower the overall volume of the sub, depending on my application. For instance, for tracking I'd lower the volume of the sub until I was satisfied that the bottom end sounded realistic. But during listening tests from various prerecorded and mastered sources, I found I needed a bit more bottom to flesh out the system in the room. The overall balance of any subwoofer is highly subjective, but the beauty of this system is that you can adjust the LF depending on your sources. In all cases, I had a centered, cohesive sonic picture instead of two speakers with a thundering



The CMS SUB features polarity reverse, rotary phase adjustment, lowpass filter, remote mute gain and gain control.

rhino under the desk. I loved the additional bottom on my bass, kick drum and tom tracks. The low end was solid, punchy—never over the top or muddy.

I also auditioned the system for various engineers whose ears I trust. Seeking uncolored first impressions, I purposely did these "guest" listening sessions with as little intrusion of my opinion as possible. All of the engineers confirmed my findings, remarking how well the sub integrated with the near-fields.

Should You Go Low?

Honestly, I'm not a sub lover, having been disappointed with past experiences. But after living with this setup for an extended period, both with and without the sub, I would strongly recommend it in a situation where the room is big enough to handle the extended low end. In my tests, the bottom was punchy and full without being overbearing. I would like a means of remotely altering the sub gain. The remote mute switch is handy, but not as useful as a remote gain control. That said, Focal has created an able and great-sounding sub that pairs perfectly with its CMS line of speakers. III

Kevin Becka is Mix's technical editor.

PRODUCT SUMMARY

COMPANY: Focal
PRODUCT: CMS SUB
WEBSITE: www.focalprofessional.com
PRICE: \$995

PROS: Easy setup, foot-switch and local mute; sonically excellent integration with existing CMS system.

CONS: No remote volume control.

PreSonus Studio One Pro 1.5

Major Upgrade Adds Video, SoundCloud, Workflow Enhancements

Last year, when I heard PreSonus was releasing a DAW, I wondered, “Why get into the DAW game now when major players like Digidesign and Apple have spent years tweaking and retooling their already-popular products?” But when I got the first release of Studio One, I was impressed. The company’s “all muscle, no bloat” slogan carried through on the promise of powerful features without extraneous functionality to slow the software down. The 1.5 update offers powerful new features that fill the holes in the original release. It’s as if PreSonus took everyone’s favorite features from the industry’s standard DAWs, packaged them together and then pushed the whole thing forward with major technology innovations.

Under the Hood

Studio One’s state-of-the-art mix engine features 64-bit, double-precision, floating-point math. The software’s been engineered to perform at this resolution, even within the confines of a 32-bit operating system. To accommodate this mix system, PreSonus includes 25 proprietary 64-bit plug-ins that process in high resolution. And when using third-party VST or AU plug-ins, incapable of 64-bit operation, the intelligent mixer automatically reverts to 32-bit, single-precision, floating-point math. In every scenario I tested, this created an incredibly powerful summing architecture, with pristine quality and generous dynamic range. Additionally, the mixer provides complete automatic delay compensation on every channel. One included plug-in—Pipeline—lets the software treat a hardware insert as a plug-in, with manual delay compensation. A built-in ‘scope makes delay calculations simple and user-friendly.



Studio One Version 1.5 adds video support and improved workflow to its feature set.

Focus on Workflow

Version 1.5 speaks the project studio’s language where a song is typically carried from composition, tracking, mixing and mastering—all on one platform. To that end, V. 1.5 has a powerful mastering suite that focuses on deliverability. Finished mixes from the Song side of the software can be exported directly into a mastering Project. Here, all of the songs on an album can be trimmed, timed and metered with the K-System (a standard devised by mastering guru Bob Katz); treated with the same 64-bit plug-ins and processing from the mixer; and then assembled into a finished package. If a song is already part of a mastering Project and the mix is revised in the Song page, the mastering Project will update to reflect the new mix.

Tracks can be stamped with metadata tags (song titles, artist names and copyright info) through a clear and easily accessible pane. Tagged files can then be exported as MP3s for Web publishing. The software can also burn a Redbook reference copy without needing third-party software. Once the cli-

ent is satisfied, Studio One can create a disc image to send off for duplication.

Studio One now offers Sound Cloud, a third-party, Web-based service that allows for the sharing of audio by uploading to a remote server and delivering access points to collaborators or clients. The packages range in price, the most basic being free. In each case, you are allowed a certain number of minutes of audio storage, unrestricted in bit rate; you are limited by time, not file size. The Studio One interface for uploading files is very slick and easy to use. As always, files can be dragged and dropped into the window, embedded with the metadata song info and even album art, which will be transmitted with the file.

To further enhance workflow, preset keyboard shortcut templates based on Pro Tools, Logic and Cubase quick keys map common key commands to those with which you are already familiar. In V. 1.5, you can build on those presets by customizing every keyboard shortcut in the software. The software also borrows a useful Nuendo feature that provides a gain control on each individual audio region. This time-saver pushes the necessity for automation to the tail end of the mix, as you can level out a vocal without having

PRODUCT SUMMARY

COMPANY: PreSonus
PRODUCT: Studio One Pro 1.5
WEBSITE: www.presonus.com
PRICE: Free upgrade for existing users; \$449 new

PROS: Stable, intelligent, intuitive operation. Great sound from 64-bit operation.
CONS: No strip silence feature. Different edit tracks/mixer channel names can be confusing

to ride the fader. At the same time, some exciting new innovations such as Control Link™ allow easy mapping of any software parameter to a hardware controller. Click the parameter, touch the hardware control, click "Link" and you're mapped.

Let's Get Comfy

Getting comfortable with this simple and intuitive software was a breeze. The interface is visually oriented, with slick-looking graphics. For example, the audio configuration pane operates similarly to Pro Tools' I/O setups, but is easier on the eyes. The combination of visual ease and advanced functionality also proved convenient in the Mix window. Any of the proprietary Studio One plug-ins provided a set of basic controls and meters right within the channel strip. Subtle tweaks were a snap, and the workspace wasn't cluttered with plug-in GUI panes.

The keyboard-mapping feature is excellent. Other software lets you define key commands, which is helpful, but requires knowing the terminology of the new DAW and ends with manually replacing key commands, which can be tedious. Choosing the Pro Tools preset keyboard configuration found me quickly navigating between windows, initializing transport commands and zooming. I felt right at home in the software immediately. I like V. 1.5's new keyboard shortcut editor. The presets still exist, but they can be modified and saved as user presets. Where the Pro Tools preset keyboard shortcuts fell short, particularly with regards to the new video-related features, the shortcut editor picked up.

I had some minor complaints about editing in the original version. This is improved in V. 1.5 with a row of tooltips just below the toolbar, which displays possible key + mouse combinations that can be used for additional editing functions. Some of these are similar to the Logic/Nuendo secondary tool, but with a different approach. Learning the proper edit functions of the software using the tooltips is easy, ultimately leading to efficient editing.

There still is no "strip-silence" function. I also hit a few snags in the relationship of the Mixer and Edit windows. Similarly to Logic, edit tracks and mixer channels didn't necessarily have the same names and often appeared in different orders between the two windows. This proved a bit distracting.

Sound for Film

One of the more exciting improvements of-

fered in the V. 1.5 update adds post-production functionality. You can playback QuickTime movies within the software and offset the movie from the timecode start of the session. This is a notable improvement, and makes scoring to picture a reality. Even sound effects editing takes place with some ease. I'd like to see synchronization to external devices in future versions, and surround sound would be another welcome addition.

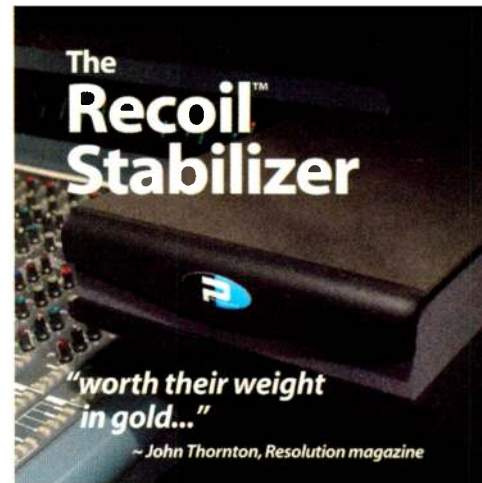
Can It Swim With the Big Fish?

Studio One feels professional with clear metering, flexible routing options, well-conceived plug-ins with plenty of controls and high-quality summing. Solutions to classic problems like control surface mapping and hardware insert delay compensation are made simple. Throughout the software, there's a consideration on the importance of metadata. In addition to tagging files with song info, Broadcast WAV files are used exclusively as they have a metadata time-stamp. Touches such as these make this software a beneficial part of a working studio environment.

Studio One also offers a good amount of virtual instruments, a few dozen plug-ins, an innovative mastering suite and 64-bit operation (which has a very impressive sound). Cubase 5 is about the same price, but trades the mastering and 64-bit processing for surround capabilities. Logic 9 prices out about the same and actually offers quite a bit more in terms of software than Studio One. Surround sound, mastering, more additional programs like Compressor and Mainstage, more instruments and full-on post-production functionality are all included. That said, I know people who have been using Logic for years and still don't feel like they know what they are doing.

If you're seeking an efficient, pro means of creating and delivering music in modern times, Studio One is a great choice. You'll move from start to finish with a great sound and smooth operation. I would certainly suggest Studio One Artist to someone shopping for his/her first DAW, and would definitely recommend Studio One Pro to professionals looking to improve their summing quality or ease their workflow. With the growth demonstrated in V. 1.5, it seems that this software will continue to evolve, only improving upon the solid foundation already established. III

Brandon Hickey is an audio engineer currently working on an independent film and other projects.



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(The Rolling Stones, Bonnie Raitt, Jackson Browne, Eric Clapton)



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~ **Elliot Scheiner**
(Steely Dan, B.B. King, Fleetwood Mac, Sting, The Eagles, R.E.M., Aerosmith)



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Josephson Engineering C715 Microphone

Studio Condenser Combines Transparent Sound, Unique Features

Josephson Engineering is a boutique microphone company that takes a no-nonsense, audiophile approach to manufacturing, where a no-compromise signal path and build quality are everything. The company's latest offering is the C715, which combines notable features—both inside and out. The C715 comes in a matte-black finish, and its most striking aspect is what Josephson calls the “hard, open-cell metal alloy foam” basket that surrounds the capsule. Closely resembling semi-transparent foam, the cage acts as an effective pop filter while providing electrical shielding and mechanical protection for the capsule. The strength of the basket negates the need for an internal housing or supports that can cause reflections within the structure.

The C715 has a mechanical pattern-changing baffle at the back of the capsule that was borrowed from the '60s-vintage Sony C-37 FET. It's continuously variable between cardioid and omni and adjustable via an included mini screwdriver. The mic's electronics are derived from Josephson's e22S “lollipop” mic, featuring an all-discrete Class-A cascode FET front end driving a custom Lundahl output transformer. The mic creates polarization via a new electrostatic circuit designed by Josephson that negates the need for external power supplies or oscillators. The adjustable stand mount and the 12.5-foot cable are integral. The mic ships in a sturdy, locking, foam-lined, watertight Pelican case.

Into the Studio

My first experience with the C715—while recording hand percussion—was revealing. When using it on softer sounding material, such as

shakers, I had to give the preamp quite a bit of gain to bring in an acceptable level. For this session I was using a Digidesign C24 controller, which has preamps that are adequate for most jobs, but quite noisy at the top of their range. Wanting to be sure the mic was operating properly, I placed a call to the manufacturer and was given the inside scoop on the design philosophy.

The reason for the mic's low output is the C715's Lundahl output transformer, which is purposely wound down so the output signal travels at lower voltage and more current. This reduces line loss and also keeps the possibility of overloading the preamp to a minimum. The caveat to all this is, you must have an adequate preamp to gas the mic to proper levels on softer material.

Next, I listened to the mic placed about a foot off the bridge of an upright bass run through Neve VR preamps. Like the first experience, the preamps didn't have enough gain so these were swapped with a Rupert Neve-designed Summit Audio MPE-200. The results were much better, as the bass's plucked attacks sounded full with plenty of attack, low end and “fuff” from the player's hands on the strings.

When placed in front of a screaming Fender Supersonic amplifying a Telecaster, the gain issue was not a problem. The preamp on the Neve VR was all the way down and the mic handled the substantial SPLs without a hiccup. The C715 was very transparent, with the track sounding exactly like the amp in the room.

On a male vocal powered through an SSL 4000 Series preamp, the mic was an excellent performer. Most interesting was the lack of need for an external pop filter. The basket deftly contained the plosives. The output was slightly compressed via SSL's compressor and the sound was beautifully balanced and full, with an uncluttered bottom and midrange and silky top end with T's and S's perfectly rendered.

Easy to Love

This mic was a joy to use and excelled in most applications. My least favorite use was as a room mic, placed 12



The C715 has an open-cell alloy windscreen.

feet behind a drum kit, which was disappointing both times that I tried it. Up close, this mic brings new meaning to the word “intimate,” revealing detailed nuances on vocals, hand percussion, as a mono overhead for drums and on tenor saxophone. The top end is silky—never sibilant—and hits reverbs perfectly, rendering luxurious articulations.

My only real gripe was that the integrated cable was always too short for most uses in a larger room, necessitating the use of a second cable. Stringing cables together is one of my pet peeves and is a potential problem for clean transmission of signal and phantom power. Other than that, I give this mic high marks, placing it among my large-capsule condenser favorites, like the Brauner Valvet X and Korby Red. III

Kevin Becka is Mix's technical editor.

PRODUCT SUMMARY

COMPANY: Josephson Engineering Inc.

PRODUCT: C715

WEBSITE: www.josephson.com

PRICE: \$3,495

PROS: Pristine, open and un-hyped sound. Works very well across a wide range of applications.

CONS: Attached cable is too short for larger-sized rooms. Pattern changing baffle is difficult to recall between hard omni and cardioid.



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Taming the Bass Beast

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Low-frequency energy management is my personal sonic soapbox. From live sound to broadcast and recording studios, taming bass can free up sonic real estate and simplify solutions that might be “overly complicated” or worse, ineffective.

Let's Start With Dinner

The Shure SM58 is perhaps the most copied vocal mic of all, with many variations on the theme. An internal bass roll-off circuit, combined with a robust pop filter, compensates for proximity effect. (See Fig. 1 for frequency response.) Back in 1966, when the SM58 was introduced, psychedelically loud onstage instrument levels made it hard for vocals to cut through—hence, the upper midrange “presence lift” to improve intelligibility.

Despite the built-in highpass filter, the SM58 and its offspring can still let through ample low and low-mid energy. “Mud” radiating from the back of the P.A. stack can cloud the mix, and while it's cool to hear the human voice resound through the hall like thunder, it is rarely appropriate. Success is often based on the ability to work quickly, so many of our fixes that turn into habits are those that get the job done. Live engineers don't have the studio engineer's luxury of time. These days, it's fairly easy to record a live performance as a multitrack session and play back individual mics for analysis—preferably on the house system, which is time well spent.

Trimming the Fact

A highpass filter is the most obvious fix. Simply raise the roll-off frequency upward until it affects the frequency range that wants to be pre-



Figure 3: Composite screen from the McDSP ML4000 multiband processor being used to gently limit by about 3 dB (note the red vertical bars). The spectrum has been divided as follows: bass up to 164 Hz, low-mid (164 Hz to 814 Hz), high-mid (814 Hz to 6.18 kHz) and treble (6.18 kHz and above). Threshold, ratio, attack, knee and release can be optimized for each frequency band. EQ can be tweaked via output levels.

served, and then back it down. Highpass filters typically have continuously variable frequency and fixed-slope options that range from a gentle 6dB/octave (first order) to the more severe 24dB/octave (fourth order). When choosing highpass filter frequencies, it's helpful to know what musical octaves are being affected—a bass guitar's open-E string is about 41 Hz, while a guitar's open-E is about 82 Hz.

Shelving EQ may be more appropriate on kick, for example, making room for bass guitar while still preserving the kick's punch. Figure 2 shows how bandwidth (Q) affects the slope of the shelving curve. See how the 42Hz highpass filter works with a shelving equalizer. Narrow bandwidth (Q of 2) preserves the lowest usable mids around 200 Hz, while the wide bandwidth (Q of 0.10) affects frequencies beyond 1 kHz! (Attenuation is -2.9 dB and -6 dB, respectively.) These settings minimize bass competition in the first two octaves (above open-E) from other sources, such as drums, vocals and in-

struments.

Studio and broadcast engineers use compression and limiting to narrow dynamic range, raising low-level signals for challenged consumer systems and their even more challenging (and noisy) environments. Despite venue noise (from HVAC and the audience), live engineers do not need to make their sound feel bigger on small speakers, and they have the ultimate cure for background noise. That said, the primary struggle is variable acoustics—venue-to-venue, as well as empty house to full house—and onstage levels, which are slowly being tamed by in-ear monitors and offstage amplifiers.

Ouch!

Designing “presence” into a microphone was an easy fix to compensate for low-frequency mud. But so many mics applying this cure to systems that have ample clarity and power can result in a painful buildup of upper-midrange presence, which happens to be the frequency range where the ear hears very well at all dynamic extremes. Unlike broadcast or

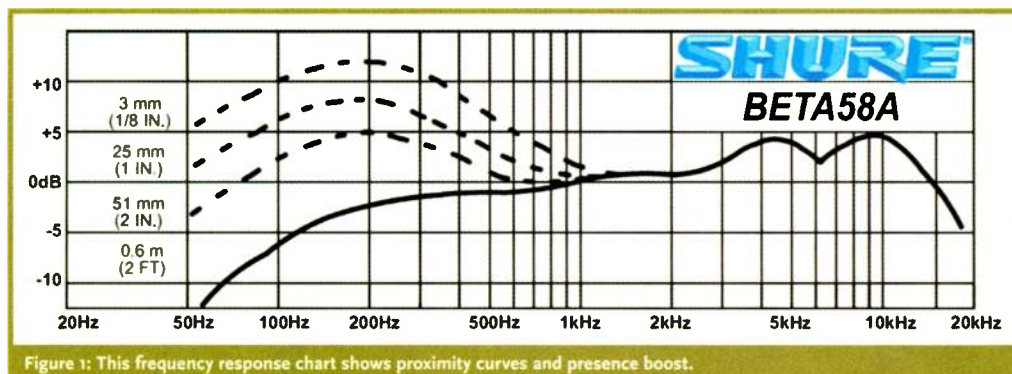


Figure 1: This frequency response chart shows proximity curves and presence boost.

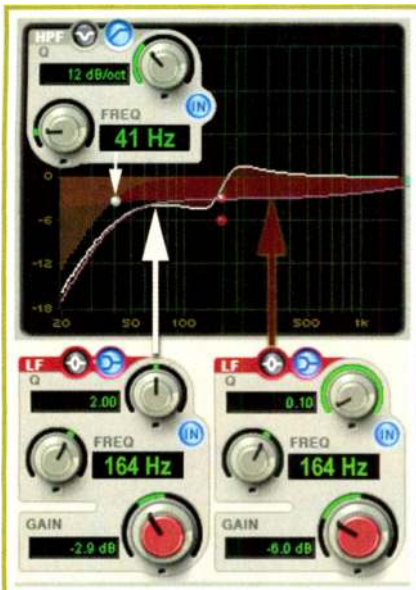


Figure 2: Combining highpass and shelving EQ. Notice how a narrow Q setting (2) with a -2.9dB cut makes a sharp transition at 164 Hz, while a wide Q (0.10) with -6dB attenuation affects frequencies beyond 1 kHz.

studio engineers, live engineers need *limiting* more than compression to keep the power to inflict pain in check.

Limiters can be full-range or frequency-specific. A de-esser limits high frequencies only (or limits based on sidechain EQ). I am a fan of multiband signal processors because they can do a great job of gluing all of the sounds together. If mixing is a puzzle, a multiband processor can help airbrush the edges of disparate pieces so they seem as one instrument. For me, that happens on the drums and bass submix.

A multiband processor's divide and conquer approach is useful across the board—in broadcast, studio and live applications; on the mix bus and on submixes (like vocals and instruments); and taming the presence region and limiting the potentially painful upper-frequency region (Fig. 3).

The Finale

The two primary differences that should make "live" issues easier to detect and resolve are frequency response and dynamic range.

While most venues wouldn't qualify as anyone's acoustic dream space, the number of low-frequency-capable drivers and the power behind them makes detection easy, as compared to what most broadcast and some mix engineers have to accurately assess as low-frequency energy.

The ability to optimize microphone choice, apply equalization and signal processing are fundamental to all aspects of the audio biz. In live sound, speed and efficiency are key to being, and staying, employed. Experience also plays a huge role, as does disposition and education—whether from a boss, a mentor, a teacher, a book or the manual. No matter how far along in your career, there should always be time for a little sonic woodshedding—sometimes referred to as "doing stuff the hard way." It's also one of the best ways to learn. III

Eddie recalls the days when multiband processing meant misusing Dolby-A noise reduction. Visit him at www.tangible-technology.com. Facebook and Twitter.

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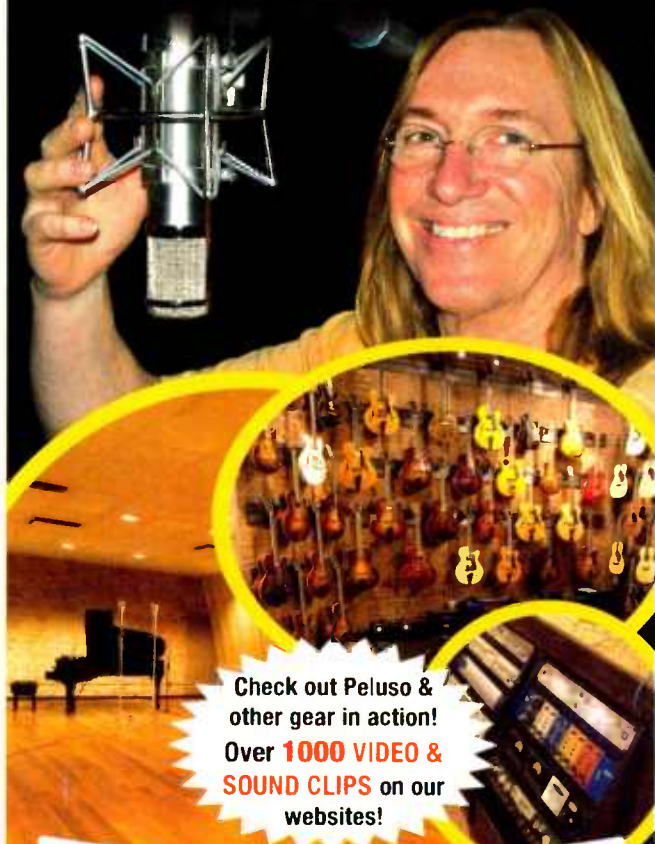
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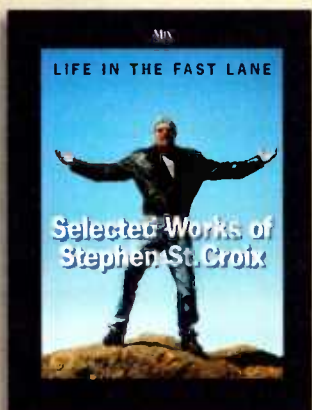
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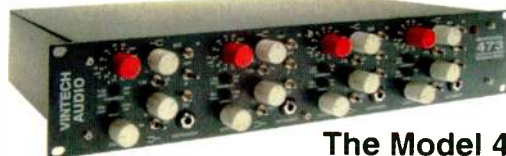
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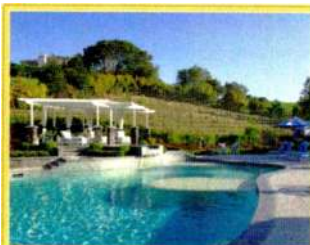
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Apple iMac

The all-in-one that's one of a kind.

Apple introduced the first iMac more than a decade ago. And the design philosophy remains the same: an all-in-one computer that's as powerful as it is beautiful. A 21.5-inch or 27-inch display with edge-to-edge glass covers nearly the entire front of the unified enclosure. This latest iMac has a 3.06GHz Intel Core 2 Duo processor and comes loaded with 4GB (up to 16GB) of RAM and a 1TB hard drive. It's the perfect all-in-one centerpiece for your MOTU studio.

MC Transport

MC Control

MC Mix



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MOTU



MOTU UltraLite-mk3 Hybrid

The world's first hybrid FireWire•USB2 I/O

Connect to any current Mac or PC via either FireWire 400 or hi-speed USB2 and enjoy the same pristine audio quality and zero-latency on-board mixing performance either way. Includes classic reverb, modeled analog EQ, vintage compression, and advanced signal analysis tools including a full-screen real-time FFT display, a spectrogram "waterfall," an oscilloscope, an X-Y plot, and phase analysis.

PreSonus BlueTube Dual Path

2-channel tube preamp

Looking for a versatile preamp with lots of character? The BlueTube DP gives you two sonic colors in one box! This stereo microphone/instrument preamplifier delivers dual path technology, enabling separate control between a transparent solid-state preamp stage and a tube preamp stage, for a wide range of sounds from pristine and clear to fat and warm.

The BlueTube DP is the perfect tube preamp complement for your MOTU desktop studio.



Neumann TLM 102

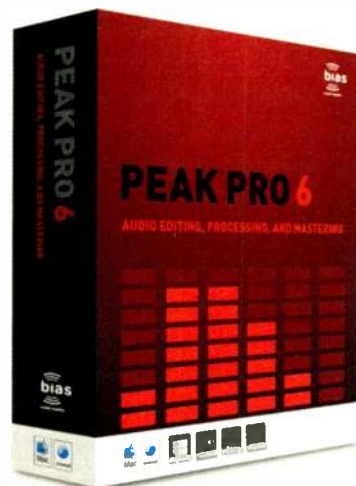
Sweet little microphone — huge Neumann sound

Don't let its small size fool you — only 4.5" tall — the new TLM 102 large-diaphragm microphone makes a perfect addition to any studio, from project to professional. Featuring transformerless circuitry, a foam-lined grille to reduce "p" and "s" sounds and an SPL rating of up to 144 dB, the TLM 102 brings the legendary Neumann sound home at a price everyone can afford.

BIAS Peak Pro 6

Evolution of an award-winning standard

Whether you're a musician, sound designer, audio editor, multimedia producer, or mastering engineer, Peak Pro 6 offers more creative potential than ever before. Used side-by-side or launched directly from within DP7, Peak Pro 6 streamlines your workflow with industry-renowned sonic quality and precision. For additional mastering, restoration, and DDP 2.0 delivery power, step up to Peak Pro XT 6.



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Bob Heil

Live sound pioneer, inventor of the famed Heil Talk Box, microphone manufacturer and audio maverick speaks out.

How did you get involved in making live sound mics?

Joe Walsh was the guy that pushed me into this. We've been building mics for communication and the ham radio industry since 1980. In that market, it's all about articulation. When an ambulance goes down the road and someone's speaking into a headset, they want to know if an address has a "b" or a "p," or an "s" or an "f," and hear that clearly, especially when lives are at stake. Articulation is golden. Joe Walsh knew that because he's an avid ham operator. He said he wanted to take our Gold Series (communication mic) on tour with him, and I told him he was crazy. I had been out of the live sound biz for some time and I was shocked when I started looking at the quality of available mics for live sound. When I opened the mic Joe had been using on tour, I gasped. Then Joe and I started working on new technologies—based on large-diaphragm dynamics.

Last year, Kansas did its tour with a live symphony [Washburn University Orchestra] for the band's 35th-anniversary DVD release, recorded without a single condenser mic—it was all Heil microphones. They sound great and have 40 dB of rear rejection. I can sit one beside an oboe player and not hear the trombone player two seats away. The polar pattern is what I call a Heil pattern—almost omnidirectional in the front, and behind it, it's 40 dB down.

What's wrong with condenser mics?

I hate condensers. They're too sensitive, they pick up everything, they're brittle on the top end. And people use them because of ego so somebody can say, "I have a con-

denser." They were great years ago when they were hand-built, but not anymore—they're brittle-sounding and all sound alike to me.

How do you get a condenser-type sound from a dynamic?

The PR 30 sounds like a condenser and doesn't have that brittle top end. It's from the diaphragm itself and how it's set in there—and it can take 140dB SPLs. Walsh and I—two silly ham radio operators—figured it out, so you can blame ham radio for that. The first one I made for Joe was called the Gold Line Pro. It was a balanced line, 600-ohm version in the same body as our ham mic but had a completely different element. I only built that for Joe, but after a few people heard it and liked it, I formed a new division to make pro mics, and that model became the PR 20.

How did the drum mics come about?

In the drum mic market, you'll find a lot of Chinese plastic stuff. Look inside some very expensive kick drum mics, and you'll find a common \$2 Chinese capsule. We took a German large-diaphragm element and put in a thicker diaphragm with a longer voice coil that has a cast zinc mic body and gets down to 30 cycles. Then we measured some well-known drummers on live stages and found that 50 to 100 Hz is the peak of most kick drums. So I put in a 10dB passive peak that adds 10 dB from 50 to 100 Hz, then added another peak from 4 to 6 kHz to emphasize the beater attack. The word I get from users is that they now only need to use one mic on kick—the PR 48.

Where do you see live sound heading in 10 years?

It's getting more automated all the time. I hate it when I see these kids who've pre-mixed their shows on a MacBook before getting to the arena. It scares me that automation is going to take over the process of listening. It's a scary thing. And sound systems are getting smaller and smaller. We're not getting the midrange vocal ar-



tication because we're not carrying the big drivers anymore.

You started off using Altec A4s—they were big, but didn't sound so good.

They were huge, but then I discovered Olson bins. *That* was a subwoofer. Then we started building radial horns and front-loaded 15 [with JBL 2205s] cabinets in our own Fiberglas shop. And we used 64 [JBL] bullet tweeters—32 per side in a column array—it was a big hi-fi system. I miss those tweeters and big drivers.

What was your first gig for a major artist?

It was put on by Contemporary Productions around 1969 in St. Louis, with Jimi Hendrix, Iggy Pop and Janis Joplin. It was a big deal, with 48 Altec A7s—24 per side. McIntosh amps. Crazy stuff.

Were you mixing on Altec 1567s?

Exactly! Rotary knobs, and with two of them stacked for 10 channels! No EQ, no nothing, just a bunch of microphones and speakers. It wasn't great, but it was loud.

And that inspired you to think this could be better?

Every job was like that. It goes back to my ham radio experience. Give me a soldering iron and I can be dangerous. "No" is not in my vocabulary. III

George Petersen is Mix's executive editor.



Ten Good Reasons Why Lynx Aurora Converters are the Tools to add to your Pro Recording System.

Well, maybe 11.

As an owner of a professional recording system, you have made a significant investment to provide world-class audio production for you and your clients. The single most crucial factor is the quality of the converters you choose. In developing the Aurora 8 and Aurora 16 converters, we had your needs in mind. We would like to point out 10, 11, maybe more reasons why Lynx is a great choice for you.

Of course we can't give you all of these reasons in this ad. But, here is just one...

Reason #1 Aurora 16 offers 32 simultaneous channels - sixteen channels of analog I/O and sixteen channels of digital I/O at sample rates up to 192 kHz.

Okay, maybe one more...

Reason #6 The sound / audio quality - Rich, open, transparent. Let your ears give it a try.

So whether you are just starting out, adding channels or upgrading the system, you'll have good reason to try out Lynx Aurora converters.

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To see the entire list, please go to <http://www.lynxstudio.com/10reasons>.



HYBRID TECHNOLOGY

The UltraLite-mk3 Hybrid delivers another industry first from MOTU: Combined FireWire and USB2 connectivity in a single audio interface. The result? The most versatile audio I/O ever made. For both Mac OS X and Windows 7/Vista, the UltraLite-mk3 Hybrid gives you innovative engineering, pristine audio quality, powerful mixing/processing, rock-solid performance, and native 32- and 64-bit driver support for all your favorite audio software.

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