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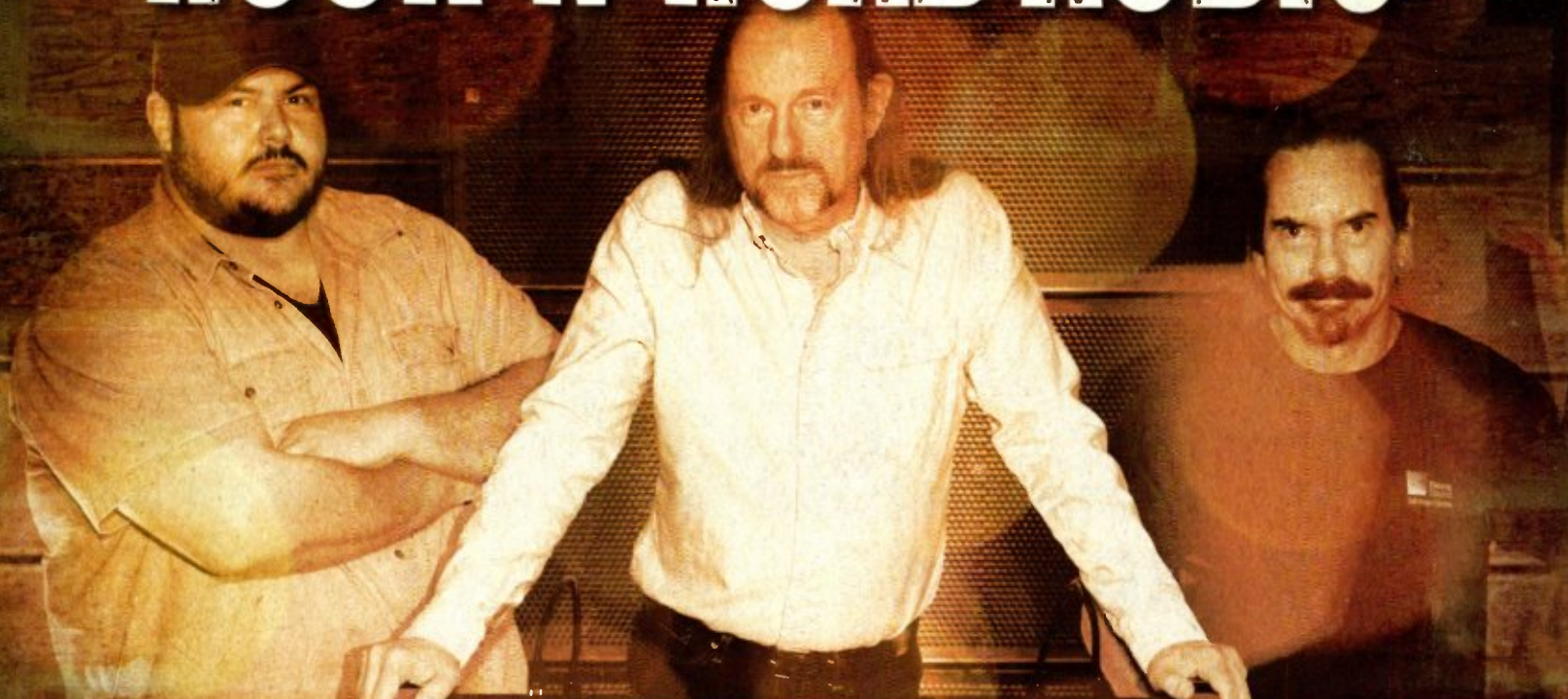
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I Need Treatment
BY KEVIN BECKA

On the Cover: Stage 1 at Technicolor at Paramount. Hollywood was designed by George Newburn and Studio 449, with acoustics by David Schwind of Charles Salter Associates. It features an Avid System 5 console, Pro Tools and JBL 7.1 monitoring. **Photo:** Ana Gibert. **Inset photo:** Murray Close.

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BEGINNING TO UNDERSTAND 7.1

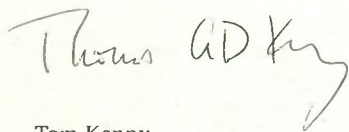
I freely admit that I didn't understand the drive behind 7.1 when people started talking about it almost a decade ago. I understood the appeal, with a Side Right and a Side Left to go with Rear Right and Rear Left, bringing a more immersive overall experience. But I couldn't see where it was headed on the consumer front. Outside of high-end home theaters, would the average viewer really upgrade amps and put side speakers in the living room? I was making the assumption that all developments in surround technology, from early Dolby Pro Logic through 5.1 and on into the future, had a consumer endgame in mind. Maybe that is no longer the case, and maybe I was looking at it in the wrong way. Perhaps home entertainment and exhibition are proceeding along parallel but separate paths when it comes to surround playback.

There's no doubt that 7.1 developers do have the consumer in mind, though as content delivery and viewership is increasingly taking place on laptops, tablets and mobile devices, the advances in playback systems may end up being more about headphone simulation rather than free-standing speakers. When Dolby showed up at NAB last year spotlighting its alliances with Dell and Nokia, you could almost see where the real money in licensing is headed. Certainly those devices can be plugged into high-end home systems, but if you take a look around any airport, commuter train or office building, you can see that viewing habits are changing, and it's becoming much more of a headphone world. Yes, simulation can be a dirty word, but you can't ignore it. And they'll still sell new speakers.

Meanwhile, the exhibition world seems to be moving toward "showcasing," boosting ticket sales by providing a high-quality, high-impact shared experience of seeing a film that you can't get at home. Just as re-recording mixers are getting comfortable with and enamored of the creative possibilities behind 7.1, manufacturers are looking ahead and exploring 11.1 and 13.1, with real-world products already being introduced. Compared to the upgrade demands on theater owners in the conversion to digital cinema, the cost and complexity of building out more surround channels can be seen as relatively minor. And while their reputation for spending money on B-chain audio upgrades is less than stellar, theater owners know that they have to keep upping the ante, in picture and sound, in order to keep filling the seats. It's safe to say that in the future we will be listening to 11.1 playback in premium theaters. But are manufacturers and developers counting on 11.1 in the home?

Cynics argue that 5.1 is just fine, and that the impetus for 7.1 is that the consumer electronics industry needs to push a new generation of receivers and players and speakers. But adopters point out that 5.1 digital debuted in the early 1990s and there hasn't been a truly significant surround upgrade since, while picture over the same period had jumped light years forward, from cameras to projection to digital delivery. Audio needs to advance, the theory goes, and 7.1 works.

You'll get no argument here. I'm just not sure where I'm going to fit those side speakers.



Tom Kenny
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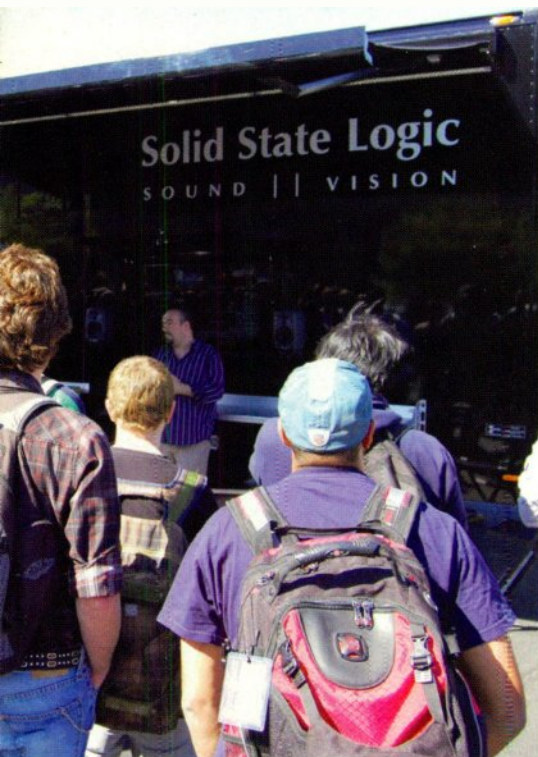
Current

COMPILED BY THE MIX STAFF

SSL ROLLS ONTO CRAS CAMPUS

As part of its continuing tour of the U.S., the new Solid State Logic Broadcast Equipment Demonstration Vehicle recently paid a visit to the Conservatory of Recording Arts and Sciences' Gilbert, Ariz., campus. The custom-designed mobile production vehicle features SSL's C10 HD Compact Broadcast Console and associated routing and I/O equipment, in conjunction with key audio and video monitoring and communications systems required for a modern broadcast production facility. The visit gave CRAS students the opportunity to experience an advanced broadcast production environment first-hand.

"We were extremely pleased with our visit to CRAS," says Steve Zaretsky, Vice President of Broadcast for SSL. "When we pulled up to the campus, more than 50 students initially greeted us to get in line to see the mobile facility. We stayed for several hours taking advantage of our external video monitor and speakers to keep the growing number of students waiting in line engaged."



Tom Tucker, Minneapolis Recording Legend, 63



Renowned recording engineer and educator Tom Tucker, who worked on best-selling records with such artists as Lucinda Williams, Prince, Johnny Lang and Soul Asylum, died unexpectedly on March 1, 2012, at the age of 63.

Tucker's career began as a singer/musician, working with IGL and for Motown on the Cadet label. He later became a founder of several very successful recording studios, including Triad Studios in Des Moines, Iowa, and Metro Studios and Master Mix Studio in Minneapolis. In 1989, he became the Director of Studio Operations and engineer for Prince at Paisley Park in Chanhassen, Minn.

His love for music took him in yet another

direction following the stint with Prince, when he became heavily involved in training the next generation of audio professionals. Beginning in 1996, Tucker served on the Board of Directors for McNally Smith College of Music. He then went on to co-found two private recording colleges, IPR and Masters Recording Institute. MRI soon became Minneapolis Media Institute, where Tucker remained on the faculty and as a student mentor up until his death.

Though his engineering work over the years garnered him multiple Gold and Platinum records, as well as a Grammy Award in 2003, he may be remembered most not only by the artists and professionals whom he worked with, but by the hundreds of students and young audio engineers he has mentored over the past decade.

Tucker is survived by his son, Tommy Tucker Jr.; daughters, Nicole Drilling and Jacqueline Tucker; and his grandchildren, Nicholas Drilling and Layla Tucker.

—Owen Sartori

The Pro Audio PIT at NAB

The NAB Show, to be held April 16-19 in Las Vegas, presents a dizzying array of product introductions, fueling the constant technological changes in the industry—from workflow to encoding to new wireless rules. Professional audio engineers, now comfortably operating in an all-digital infrastructure, need to stay on top of what's new, what's next and what's real. And they need a guide that takes them beyond the products on the show floor and into the real world.

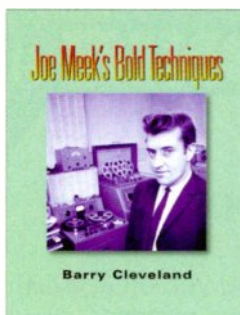
Located in the Central Hall, the Pro Audio Pit will feature 20-minute panel discussions on the current state of the art in Field Recording, Wireless System Setup, Encoding Multiple Audio Streams, Facility Networking and Audio Workflow/Storage Options, among a host of other topics. These presentations will provide attendees with the high-level overview needed to efficiently navigate the latest and greatest in Pro Audio.

Panels include Production Music and Reality TV; Field Recorders: Tips for Quality Recording; Wireless System Setup for Event Production; Test & Measurement; Encoding Multiple Audio Streams; Audio Workflow and Storage Options; and many more. For a complete list and schedule, visit nab.org.

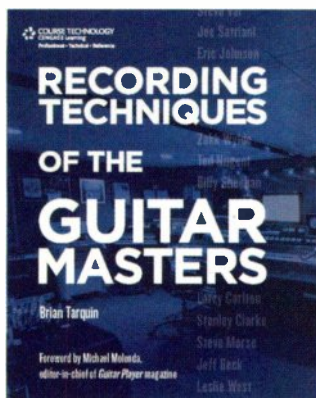
PRO
AUDIO PIT

'Joe Meek's Bold Techniques' Available as an eBook

Veteran music journalist Barry Cleveland (currently an editor at *Guitar Player* magazine) has published the second edition of his book about the career of an iconoclastic British recording innovator in the 1950s and 1960s. *Joe Meek's Bold Techniques* (barrycleland.com/meek.htm) is now available as an eBook for \$4.99 from Apple iBooks, Amazon and Barnes & Noble. The second edition updates the 2001 print edition, featuring a new introduction, an additional chapter, and a newly restored and remastered version of Meek's 1959 stereo album about life on the moon, *I Hear a New World*.



Meek is credited with many "firsts" in music production—at least in the UK. In 1951, Meek experimented with sound-on-sound overdubbing techniques; by 1954, he put microphones directly in front of—and sometimes inside of—sound sources, intentionally overloaded preamplifier inputs, printed "hot" signals to tape, and used compressors and limiters in creative, rather than corrective, applications. During his career, which ended with his death in 1967, Meek also recorded guitarists Ritchie Blackmore, Steve Howe and Jimmy Page.



'Recording Techniques Of the Guitar Masters'

In his new book from Course Technology/Cengage Learning (cengage.com), Emmy Award-winning composer, guitarist and producer Brian Tarquin reveals the recording equipment, recording and mixing techniques, and guitar and amp choices of 30 top guitarists. *Recording Techniques of the Guitar Masters* goes in-depth into proven studio techniques used by Tarquin and guitarists such as Steve Vai, Joe Satriani, Eric Johnson, Zakk Wylde, Ted Nugent, Billy Sheehan, Larry Carlton, Stanley Clarke, Steve Morse, Jeff Beck, Leslie West, Robin Trower and Tommy Emmanuel. Detailed interviews with these guitar greats offer practical advice for replicating the unique tone for which each is known. Tarquin also offers his insights into specific

gear used in the recording chain, building a great guitar room, using outboard gear in a guitar mix, and microphone choices and techniques.

MIXBLOGS



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Robair Report

Thanks to the work of artist Ben Gwilliam, we can now add "ice" to the list of materials used for storing and playing sound. For his work *Molto semplice e cantabile*, Gwilliam created a mold...

>>blog.mixonline.com/mixblog/category/robair_report



Ask Eddie

I have always tried to help people do more with what they have (and can afford). When one student brought the Fender Hot Rod Deluxe (HRD) in for a session, my own needs intersected with theirs.

>>blog.mixonline.com/mixblog/category/ask_eddie

SPARS Sound Bite

Fragmentation Is Good!

By Roy Machado

As we head off to another NAB, we find that media production in general is experiencing a tremendous amount of fragmentation—a trend that is likely to continue. There are countless numbers of cable channels, Websites, and both traditional and Internet-based radio outlets, which has led to fragmented audiences, as well. There's no complaint here. Fragmentation has been very positive for secondary media markets like Dallas, as well as for companies like mine, Dallas Audio Post.



In a nutshell, clients are looking for facilities that can handle a wide array of production services. They turn to professional audio facilities for services like editing and mixing cable TV shows on tight deadlines, recording groups of people for independent films, producing high-end internal corporate communications content, working with broadcast networks to feed real-time interviews, producing high volumes of content for political advertising, and creating content for training and live events.

Production is still a collaborative process at its core. Independent producers still shoot and edit their own content, but would prefer to come to a pro facility for things like music supervision, sound design and mixing—even if the project is destined for Internet or mobile distribution. Casual-game producers are often not set up for proper voice recording and would prefer to outsource that part of the production to a pro-level facility that understands project management.

The demand for all of these services has driven growth here at Dallas Audio Post. We have just expanded into our new 10,500-square-foot facility, which can provide the types of services that our clients expect. Part of this expansion has been the construction of our theatrical dubbing stage. This stage is custom built to meet the growing demand for theatrical film mixing services in this part of the country. With the fragmentation of media, the need for high-end facilities has never been greater.

ONLY at mixonline.com

Cool Spin:

Bruce Springsteen:
Wrecking Ball (Columbia)



Springsteen gave most of us our first taste of *Wrecking Ball* with a performance of Track 1, "We Take Care of Our Own," on this year's Grammy telecast. That song had

me by the throat by the second verse: "From Chicago to New Orleans/From the muscle to the bone/From the shotgun shack to the Super Dome..." By the time he repeated the lines "Where's the promise/From sea to shining sea," there wasn't a dry eye in our living room. When Broooooce and the E Street Band were done, I said, "Good Grammys this year. I could just turn this off now and it would be perfect." But don't anyone else stop there with *Wrecking Ball*. Read more online.

>>mixonline.com/cool-spins

SoundWorks Collection Update

The Hunger Games

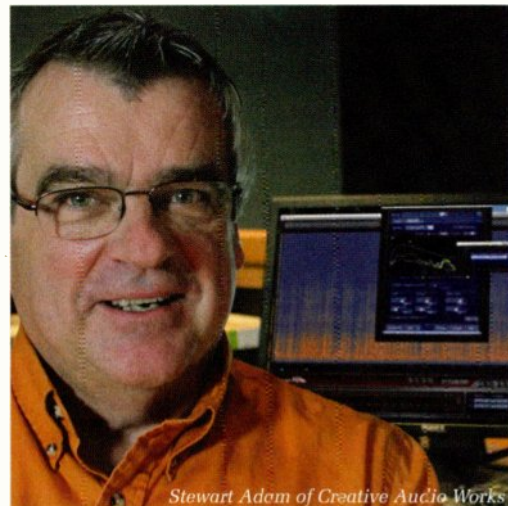
Author Suzanne Collins' best-selling novel, *The Hunger Games*, is the first in a trilogy that has sold more than 16 million copies in print in the United States alone, and has developed a massive global following.



Movie director Gary Ross and his sound team, including Supervising Sound Editor Lon Bender (pictured), Re-recording Mixer Michael Keller, and Re-recording Mixer Mike Prestwood Smith spoke with the SoundWorks Collection to discuss their approach to creating the lush soundscapes for this highly anticipated film adaptation. (See Blair Jackson's story about the motion picture on p. 42.)

>>mixonline.com/post/features/video_soundworks_collection

PopMark Media Update



Stewart Adam of Creative Audio Works

So much of our professional focus involves looking straight into the future, with little time devoted to what lies behind us. It's good to plan, of course, but sometimes, a trip back in time is exactly what we need. Keeping that in mind, this month's "Confessions of a Small Working Studio" features studios that have built their businesses on mixing the old with the new. Specifically, they are using futuristic technology to breathe life into past recordings. Check out the April edition to find out how audio restoration facilities are not only helping to restore vintage albums and other music-related media, but also historic audio for museums and libraries, and even forensic audio to help aid in criminal investigations.

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On the Cover

By Mel Lambert

TECHNICOLOR AT PARAMOUNT



Photo: Alan Amato

Stage 1 with Avid System 5 console and JBL 7.1 monitoring.

Sometimes, when the rest of the world zigs, the smart money zags. Technicolor, the international media company that has quietly raised its stake in Hollywood over the past decade, just doubled down on its commitment to post-production with the opening of a state-of-the-art facility on the Paramount lot. Looking at the trends in facility design and the consolidation that has defined the audio post industry, it's not a stretch to say that these just might be the last of the big, theatrical-style re-recording stages to be built in town. And they're stunning—architecturally, acoustically and aesthetically. Stage 1, home to the re-recording team of Scott Millan and Greg P.

Russell, is pictured on this month's cover.

Representing a truly unique collaboration between Technicolor and Paramount, the new sound post-production facility was designed from the ground up to provide state-of-the-art editorial and re-recording services for today's filmmakers and TV production companies. "During the critical planning stages for this new post facility on Melrose Avenue, in the center of Hollywood, we knew that we had to pull out all of the creative and technical stops," states Tony Mazzei, head of Technicolor's West Coast sound services. "We had to set ourselves apart from the competition.

"First, our Talent is second to none," he con-

tinues. "We are very proud to have assembled some of the top re-recording mixers and sound editorial crews in our community. Technicolor has a high standard of Excellence and has spared no effort or resources in putting together the best design and engineering teams, lead by Mike Novitch, our chief engineer. Thirdly, our Creativity results from a unique combination of front-line talent and time-efficient workflows to fully optimize our filmmakers' creative processes. Lastly, Hospitality is the focus of taking care of our clients' needs. To be competitive in the marketplace, you must provide a full complement of resources and a relaxed, friendly environment. By design, that spells out



On opening night, March 6: Re-recording mixers Scott Millan and Greg P. Russell, Paramount's Randy Baumberger, Technicolor CEO Fred Rose, and re-recording mixers Terry Porter and Anna Behlmer.

TECH, which we consider to be at the heart of our post-production sound facility.”

Housed within the original footprint of Paramount's Crosby Building and Stage 10, the new Technicolor at Paramount complex was scheduled to be completed in two critical phases. George Newburn and Jackie McNaney from Studio 440 Architecture and Acoustics (studio440.com) coordinated architectural design of the building, interiors and furniture, working closely with David Schwind and Cristina Miyar from Charles M. Salter Associates (cmsalter.com), which served as acoustical consultants.

Phase 1, which came online in late 2011, comprised a pair of large re-recording theaters, four midsized stages that double as TV mix and theatrical premix rooms, two ADR rooms and an upgrade to the Foley stage in a building across the alley. Scheduled for completion by mid-2012, Phase 2 includes a pair of midsized theaters—Stages 3 and 4—and a large ADR3 Stage designed to accommodate larger animation projects, plus eight sound design suites, 16 sound editorial suites, six DVD/digital new media editing/encoding rooms, and three 7.1-channel HD video layback/transfer/quality control rooms. A compatible Avid System 5/D-Command/Pro Tools/JBL/Genelec equipment package is scheduled for installation (see sidebar).

ARCHITECTURAL AND ACOUSTICAL

“Our original plan was to convert the existing building,” recalls Studio 440's Newburn. “But once we had developed our initial designs for the multistage complex across two stories of the Crosby Building, we realized that to achieve the degree of sound isolation required for the various re-recording and ADR stages, another approach was necessary. As a result, after long discussions with

Paramount and Technicolor, we decided to level the wood-frame building and construct a steel-framed space within that footprint. We were also able to add a third floor for offices, and which now also holds a number of Paramount's video-editing suites.” Studio 440 also designed Technicolor's new video/film post facility and corporate headquarters at Sunset-Gower Studios, Hollywood.

“The new steel-frame building certainly solves a number of acoustic problems,” adds Schwind. “From previous experience, we knew that we would need massive walls to reduce sound transmission between adjacent spaces. With a tight footprint and the close proximity of playback

stages and ADR recording rooms, we knew that sound isolation and mechanical noise and vibration reduction were going to be very challenging. Technicolor also required that the project be LEED [Leadership in Energy & Environmental Design] certified, which verifies that the new complex was designed and built using green strategies, such as energy savings.”

Newburn and McNaney developed a plan with three of the medium-sized stages at the north end of the building's first floor and the two double-height Stages 1 and 2 at the south end, with ADR stages located on the interior of the building; the second floor houses the remaining stages, plus the planned corridor of sound editorial suites. Central areas on two mezzanine levels are reserved for a technical machine room that houses the various SS DSP engines, Pro Tools|HD workstations and support systems, and a climate-controlled media room that houses the facility's LAN-based servers and spinning media.

“The walls between the larger Stages 1 and 2—which each measure 52 feet wide by 75 feet long by 29 feet high—needed to have sufficient mass to reduce low-frequency sound transmission between these two critical spaces,” Schwind explains. “[The design team] opted for a double-wall construction of 16-inch thick, fully grouted CMU with a 2-foot air gap, creating a dense masonry sound isolation envelope completed by the build-

Photo: Ana Gibert



The Foley room at Technicolor

THE MIX TEAMS AND THEIR RIGS

In Hollywood, the talent behind the console tends to be the main selling point in a highly competitive market. Here are the mix crews put together for Phase 1. The teams for Stages 5 through 8 were relocated from Technicolor facilities at nearby Sunset-Gower Studios.

Stage 1: Scott Millan and Greg P. Russell, work to date on *Hansel and Gretel: Witch Hunters* with director Tommy Wirkola; currently working on *GI Joe: Retaliation* with director Jon M. Chu.

Stage 2: Anna Behlmer and Terry Porter, currently working on *Ted* with director Seth MacFarlane.

Major Gear: 80-fader Avid (Euphonix) System 5 consoles (746 available inputs), eight Pro Tools | HD systems, 64-channel rig for recording stems, print masters, JBL 5732 or 5742 mains, Genelec 8250 near-fields.

Stage 5: Andre Perreault and Ken Burton, a variety of TV shows, including *Vampire Diaries*, *Criminal Minds*, and *Army Wives*, in addition to independent movies.

Stage 6: Joe Earle and Doug Andham, re-recording for *Castle*, *Glee* and *American Horror Story*

Stage 7: Peter Elia and Kevin Roache, *Eastbound and Down*, *Revenge* and *True Blood* for HBO, Showtime's *Dexter* and *In Plain Sight*.

Stage 8: Adam Sawleson and Michael Colomby, mixing for *Rizzoli & Isles* and *The Secret Circle*, plus HBO's *Hung*.

Major Gear: 48-fader/368-input Avid (Euphonix) System 5 consoles, five Pro Tools | HD systems, 64-channel recorder, JBL 5732 or 5742 mains, Genelec 8250 near-fields, plus "toy boxes" for SFX and dialog/music mixers: 64-channel Pro Tools | HD systems loaded with plug-ins from McDSP, Waves, CEDAR, Dolby, Minnetonka, Soundtoys and Audio Ease.

ADR1 and ADR2: the latter helmed by mixer Judah Getz.

Major Gear: 24-fader Avid ICON D-Command consoles, 32-channel Pro Tools | HD rigs, JBL LSR6332 mains (control room), JBL3731 ScreenArrays (stage).

Foley Stage: Foley artists Alicia Stevenson and Dawn Fintor with mixer Scott Curtis.

ing's outer walls. Within this massive shell, interior isolated gypsum board assemblies at the walls and ceilings are supported from a steel frame with 48-foot spans. Wall and ceiling sound absorbing treatments are supported from the isolated gypsum-board assemblies. Each of the larger 3,900-square-foot stages sits on its own 18-inch concrete slab with a 4-inch floating concrete floor for added isolation from the rest of the building."

As Miyar recalls: "We developed mathematical models to evaluate vertical and horizontal sound isolation. A noise and vibration analysis of the ventilation system design was also completed for each room. Acoustical finish assemblies were developed next by calculating reverberation times at each octave-band center frequency. To achieve the project criteria for reverb time and maximize transferability of the room response amongst the stages, Studio 440 layered a system of acoustically transparent fabric over varied acoustical treatments on the walls and ceilings."

But the importance of a creative ambience throughout the new complex was not overlooked, Studio 440's McNaney stresses. "We worked hard to configure the new Technicolor complex as a welcoming piece of architecture," she states, "with a basic brown color scheme for the interior fabrics and wall coverings, accented by red, yellow, blue and green complementary colors. We keyed off the fact that the new Technicolor logo contains a rainbow of colors."

Continued on p. 85

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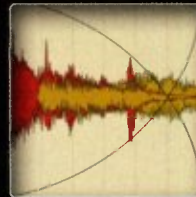
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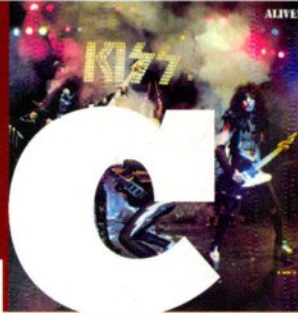
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MUSIC



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Photo: Matt Mindlin

BONNIE RAITT

Easing Into the *Slipstream* With Producer Joe Henry By Blair Jackson

It's been seven years since Bonnie Raitt put out a studio album. During that hiatus from recording, she continued to tour with her band occasionally and still gave her time to many good causes. But it was also a time of sorrow and reflection, as she processed the death of her parents a few months apart in 2004 and 2005, and her beloved older brother a few years later. The road to her new album, *Slipstream* (the first on her own label, Redwing, after many years at Capitol), began in the fall of 2010, when she

hooked up with producer/songwriter Joe Henry and engineer Ryan Freeland. Henry says he had wanted to work with Raitt for some time, and in the course of a three-hour phone conversation, "I suggested, 'Why don't you come to my house? I have a studio here and I'll put an ensemble together. Let's take a couple of days and see what we can discover. Either we can come up with something meaningful for you, or we won't. It could be a fun adventure.'" And it was. Henry assembled some of his

favorite musicians—guitarist Bill Frisell, steel master Greg Leisz, drummer Jay Bellerose, bassist David Pilch and keyboardist Patrick Warren—and convened with Raitt in the producer's basement studio, known as Garfield House, in South Pasadena. Over the course of two sets of sessions a month apart, the group cut three songs by Bob Dylan, five of Henry's songs that Raitt was particularly fond of, one that Henry wrote specifically for her, and one they wrote together. In the end, four songs from Garfield House made the final album: two Dylan tunes, both from his moody 1997 album, *Time Out of Mind*—"Million Miles" and "Standing in the Doorway"; and two by Henry—"God Only



Knows," from his 2007 CD *Civilians*, and "You Can't Fail Me Now," written with Loudon Wainwright III for 2007's *Strange Weirdos*.

As usual, engineer Freeland brought in racks of mic pre's, compressors, summing gear (he doesn't use a console) and a Pro Tools rig from his own Stampede Origin studio for the sessions, which, in keeping with his and Henry's (and Raitt's) preferences, were captured live with everyone playing together and Raitt laying down keeper vocals.

These days, Freeland favors newer "boutique" outboard gear, noting, "I worked with vintage gear for a long time, but I do so much live recording in the studio that if it goes down, it can ruin the take and that's the last thing I want. So I've been buying more of the newer pieces that are not exactly imitations of old stuff, but are built with the same philosophy behind them." Among the boxes Freeland employs are Retro 76s, BAE (Brent Averill Enterprises) 1073, 1272 and 312 pre's, Summit TLA-100A tube leveling amp, the Shadow Hills Mastering Compressor, Empirical Labs' Distressor EL8x, API 2500 compressor, 16 channels of API 8200A summing mixer, Apogee Symphony I/O, Apogee AD and DA 16X converters, and various pieces by Avedis, LaChapell and Millennia.

"You do a few takes," Freeland says, "and you pick the master take of the whole band

and then, for the most part, grab fixes from the other alternate takes that were done on the way to get the master. Usually I have enough material that I can go in and fix a vocal thing here and band thing there. Even with all the bleed, you can chop in little bits and pieces to improve the performance. There were also a couple of songs where we went in and overdubbed."

Adds Henry, "There were a number of things we recorded where Bonnie just wanted to sing. She had a lot fun focusing as a singer, and the musicians in the room were playing live takes, so being able to be the leader with her voice and really work with her phrasing was exciting for her."

After the Henry sessions, the action shifted to Ocean Way Studio B (with its custom Neve 8068/8088 console), where the rest of *Slipstream* was recorded. This time, Raitt herself produced, with Freeland again engineering. The band was Raitt's crack touring outfit—guitarist George Marinelli, bassist Hutch Hutchinson, drummer Ricky Fataar and new keyboardist Mike Finnigan—augmented on various tracks by percussionist Luis Conte, and guitarists Johnny Lee Schell (a Raitt band veteran) and Al Anderson (of NRBQ fame). Anderson co-wrote three tunes; others came from the likes of Randall Bramblett and Gerry Rafferty (a wonderful reggae-ized version of "Right Down the Line" was the first radio focus track).

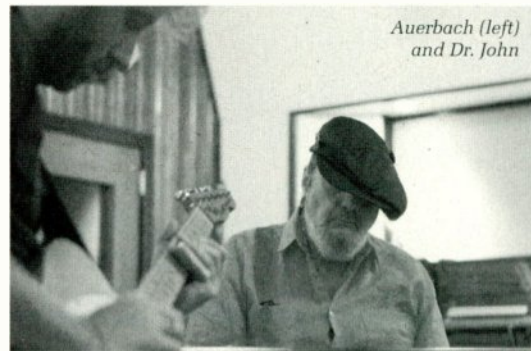
"When we went over to Ocean Way, that was all live, too," Freeland says. "Different band, different studio, but my approach was similar—capture what's going on in the room and get the best version of what the musicians are putting out." Since he was working on the Neve and using its built-in mic pre's and EQs and drawing on Ocean Way's famous mic collection, "I only brought in about half of my stuff, and to be honest I did miss having a wider variety of different pre's, which allows me to really paint the picture differently depending on how I want to do it."

In mixing the album at his studio, Freeland says he didn't do much to try to match the sessions from the two studios: "To try to make either one to sound like the other didn't make a lot of sense. There's something specific about the vibe with Joe, and the other is maybe more classically like Bonnie. But what comes through all of it is still Bonnie." ■

DAN AUERBACH AND DR. JOHN: LOCKED DOWN

Dr. John's hot, rhythmic new album *Locked Down* was produced by the Black Keys' Dan Auerbach, who brought Dr. John and other musical friends into Easy Eye Sound—Auerbach's personal studio in Nashville. The music is equal parts voodoo-funk and NOLA blues, with an edge.

"Each day we'd start live on the floor, all the guys on their instruments, and we'd just start improvising," Auerbach says. "We'd try to find something that was working, grab it, and eventually turn it into a song—without vocals. There would be a verse section, pre-chorus, bridges, intros, outros, and we cut 13 of those. About a month later I had Mac [Rebennack, aka Dr. John] come back by himself and work on vocals."



Auerbach (left) and Dr. John

Photo: Alysse Gafkjen

"The musicians playing opposite each other—all in the room together—was the biggest factor of the sound of it," says engineer Collin Dupuis, who captured all of the sessions.

Easy Eye is an (approximately) 30x30-foot room with 11-foot ceilings and mildly reverberant, mostly "neutral" acoustics, Dupuis says: "It's interesting that you can have everyone playing in the room and the bleed you get is minimal. And it's cool bleed; when you start compressing things, you get these interesting pumping sounds."

Dupuis captured the sessions to an Ampex MM1200 analog machine, using Pro Tools as a safety. He says another key to the inventive sounds he and Auerbach get in Easy Eye is their frequent choice of dynamic over condenser mics: "To me, you pick a few choice pieces of gear: tube equipment, old American-made mic preamps, dynamic microphones," he says. "Dan and myself like to work really fast, and get the sound right in the beginning," Dupuis says. "We don't spend a whole lot of time mulling over snare drums and guitar tones. Our aesthetic is just to create a vibe and capture sounds right away."

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Read more about the recording of Bonnie Raitt's *Slipstream*. mixonline.com/april_2012



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ALVIN'S JUSTIFIED SONG IS PART OF EXPANDED ALBUM

Dave Alvin is set to re-release his recent electric blues record, *Eleven Eleven*, in a deluxe edition that will include a concert DVD, a nine-track live CD and three previously unreleased bonus tracks. Recorded in Winslow Court Studio (L.A.) by Craig Parker Adams, album highlights include the opening track, "Harlan County Line," which was written for the gritty, original FX TV show *Justified*. Music supervisor Greg Sill took an inventive approach to commissioning original music for the show: "I talked to the writers and producers about...why don't we have actual performers perform the songs?" Alvin—who plays onstage in a bar where two characters meet up—became the first musician to perform in an FX show, and Sill says, "The song is so good that we ended up using some of it as underscore." —Barbara Schultz



SPRING STANDARDS FUSE "YELLOW" AND "GOLD"

The Spring Standards' full-length *Yellow/Gold* is actually two EPs combined

to form an album. Both were recorded by engineer/producer/musician Dan Molad. "Yellow," the more acoustic half, was built piece by piece in Pro Tools LE in Molad's personal studio, Sounds Like a Fire (Brooklyn, N.Y.), while the more electric "Gold" was tracked in GodelString Studio (Park Slope; godelstring.com). One of the hottest "Gold" songs—think Cars meets Buzzcocks—is "Here We Go," which is also the only song to have been tracked live in the studio. With James Smith on guitar, Heather Robb on B3, James Cleare on drums, and Molad playing bass, the band turned their typical deconstructionist approach on its head. "They're usually splitting up responsibilities—even splitting up the drum kit—and they always find unique, unconventional ways of playing," Molad says. "But playing live forced us to make choices on the spot, and that's something I'm passionate about: committing; finding a sound and saying, 'Let's do this.'" —Barbara Schultz

DAYNA KURTZ: TWO TAKES ON AMERICAN ROOTS

This month, vocal powerhouse Dayna Kurtz releases *American Standard*, a record of mostly original rockabilly songs, and an album of jazz/torch songs, *Secret Canon Vol. 1*. Both were co-produced (with Kurtz) and co-engineered (with Sal Mormando) by Randy Crafton, primarily in Crafton's Kaleidoscope Studio (Union City, N.J.) and captured to an Otari MTR-90 2-inch machine. "Canon is a fairly straight-ahead jazz recording," Crafton says. "It was faithfully recorded, with minimal coloring from the equipment. There is some EMT40 plate reverb on the vocal, some tape echo here and there, but not much in the way of effects. On *American Standard*, doing things 'wrong' became a big part of the sound. The plate is still at play, but so is tape saturation, extreme compression, intentional distortion from the mic pre's, drastic EQ, tape delay, etc. There was nothing passive about the use of gear for this recording in tracking, or mixing." —Barbara Schultz



Photo: Merrri Cyr



Photo: Andrew Lepley

POP GOES PIZZARELLI ON NEW DISC

The great jazz guitarist and singer John Pizzarelli combines jazz and pop on his latest album, *Double Exposure* (Telarc; May 15), which finds him tackling such tunes as Tom Waits' "Drunk on the Moon" paired with Billy Strayhorn's "Lush Life," and diverse nuggets by Elvis

Costello ("Alison"), the Allman Brothers ("In Memory of Elizabeth Reed"), Neil Young ("Harvest Moon") and others. The album was recorded by Bill Moss last fall at the Jacob Burns Film Center in Pleasantville, N.Y., using Heil microphones exclusively. Moss captured Pizzarelli's 7-string Moll classical guitar with a combination of an internal pickup, a Heil PR35 "just off the strings aiming toward the f-hole, and another PR35 on his [Jazzkat] amp." His vocal mic was a Heil PR30. After an initial solo session one day, a full band with horns helped out for three other days. Moss and Pizzarelli mixed at Nola Recording (New York City) —Blair Jackson

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Classic Tracks

By Alison Richter



KISS

“Rock and Roll All Nite”

In 1975, *Wheel of Fortune* made its television debut, Saigon fell to the communists, Lyme disease was discovered, there were guilty verdicts in the Watergate trials ... and Kiss recorded their breakthrough *Alive!* album, which in fact wasn't really live at all—or not much of it. No matter; the two-disc set, recorded by Eddie Kramer and spearheaded by the anthemic “Rock and Roll All Nite,” with which Kiss still closes its concerts almost 40 years later, volleyed the band into the stratosphere of rock stardom. *Alive!* became the first Top 10 album for Kiss and their struggling label, Casablanca Records.

Kramer's relationship with Kiss—which at that time included the original lineup of Peter Criss, Ace Frehley, Paul Stanley and Gene Simmons—began when he recorded their demo at Electric Lady Studios in New York City in March 1973. He later saw the band perform at the Hotel Diplomat and immediately recognized that they were destined for greatness. Their legendary manager, Bill Aucoin, secured their deal with Neil Bogart's Casablanca Records, and in a leap of tremendous faith, financed their early tours on his American Express card, keeping Kiss on the road

and building a loyal fan base—the “Kiss Army”—that remains with them to this day. The decision to record a live album not only propelled Kiss, but it also gave the record label a much-needed shot in the arm.

“At that particular point, Casablanca Records was not in good shape,” says Kramer, whose well-documented career before that had included most of Jimi Hendrix's recorded output, plus albums by Led Zeppelin, Traffic, The Beatles, John Mayall and dozens of others. “In their infinite wisdom, they decided to do this double-album of the *Johnny Carson Show* and they printed, I think, a million albums in advance and virtually all of them came back, so they were on the edge. They needed a big hit. There were a couple of things going on—disco was bubbling up in the background. I got this phone call from Neil Bogart one day. I was at home in upstate New York, and he said, “Do you want to record Kiss live?”

Kramer, at the time, was contemplating producing Boston, whose demo was on his desk. Deeming the tape perfect already, he declined that project and opted to take on Kiss. “I thought to myself, Kiss is a hell of a challenge. They can't really play in time or in tune or anything like that. They're running around with these huge heels on and jumping up and down, with fireworks and bombs going off and God knows what else, so it's very difficult for them to do that,” he says. “They were at the beginning of their career, and musically, things weren't, shall we say, totally proficient at that point, so for me, this was the challenge. I said to Neil, ‘Okay, I'll do this, but it's going to take a bit of work.’”

Kramer recorded the band live in Detroit, Cleveland, Davenport, Iowa, and Wildwood, New Jersey, using two 16-track Stephens machines and a custom console housed inside a converted aluminum bread van. “It was bloody good-sounding,” he says. “I used it for so many live shows at the Fillmore East and all over New England.” He remembers the New Jersey gig as particularly eventful: “It was just insanity! It was at a small club on the boardwalk. We went into this gig thinking that it was all prepped and ready to go. There was no P.A. system for the band, so the roadies and the crew went to a building site and stole the scaffolding to support the P.A. They definitely had some serious problems afterward, apparently, with these heavy-duty guys saying, ‘Hey, you stole our stuff!’ At the gig itself, Bill Aucoin was in the dressing room with the manager of the event and he wanted his money up front. The kids were screaming, they were about to riot, and Bill Aucoin said, ‘I want the money now, in cash, or the band doesn't go on. You'll have a riot on your hands.’ So the guy caved in and we were able to record the show. This was normal; you have to remember this is the 1970s, when all this kind of crap went on.”

With the shows recorded, Kramer and Kiss returned to Electric Lady to begin mixing, only to find that the results of their work were greatly lacking. Kramer and Simmons reviewed the set lists for order of songs, selected the best takes from each, transferred them to a 16-track master reel and the band began overdubbing. The entire process took about

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two weeks, according to Kramer's estimate. "Most of the vocals were redone, most of the guitars. Pretty much the only thing left was Peter Criss' drums and one of his vocals," he says. "We overdubbed a lot of stuff, using basically the same microphones, [Shure] 58s and 57s. The mixing was through the board, using every trick in the book that I could pull: compression, EQ, reverb, delays, all kinds of stuff. It's a standard mixing thing for a live record. You fatten it up as best you can. It's mixed down on quarter-inch tape and it's all 15 ips. It's pretty simple.

"The only thing that was tricky was getting all the loops of tape running. When we were mixing, we had multiple tape machines actually going into the studio with long loops—100-foot loops of quarter-inch tape with various types of applause. It was almost like a movie mix. We'd bring up a fader or two faders, and we'd have cheers and screams. We had six or seven tape machines running constantly with different kinds of sounds just to fatten it up and make it sound better. One or two of the sides [of the double album] I had to remix because it wasn't big enough, but in the end it was very successful. We knew the album was going to sell maybe 200,000 or 300,000 copies and this would be great. We had no idea that all of a sudden it was Gold and then Platinum and then double- and triple-Platinum. Basically, it saved Casablanca from going under."

Alive! features tracks from the first three Kiss albums: *Kiss*, *Hotter Than Hell* and *Dressed to Kill*, which included the original studio recording of that landmark anthem, "Rock and Roll All Nite." For whatever reason, however, it took *Alive!* to turn the band into an unstoppable rock 'n' roll

"WE KNEW THE ALBUM WAS GOING TO SELL MAYBE 200,000 OR 300,000 COPIES AND THIS WOULD BE GREAT. WE HAD NO IDEA THAT ALL OF A SUDDEN IT WAS GOLD AND THEN PLATINUM AND THEN DOUBLE- AND TRIPLE-PLATINUM. BASICALLY, IT SAVED CASABLANCA [RECORDS] FROM GOING UNDER."

— EDDIE KRAMER

force. "Obviously, with a band like Kiss, they get quite pumped up and excited when they're performing live," says Kramer. "There's obviously a live vibe to what they do on the recordings I've done with them. From the success of *Alive!*, I did seven albums with them. I tried as far as I could to incorporate some of that live feel into their studio recordings after that, and I think I was fairly successful in that endeavor. A band like Kiss was tricky



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[early on] because we had to concentrate on keeping the rhythm section as tight as we could and that was sometimes a little bit of a challenge. You have to remember that these guys were used to playing live, where the tempos would float up and down and it wouldn't matter. But in the studio, I had to make sure that I stayed on top of it to make sure that Peter stayed in the pocket. I figured out a way of him looking at me, and me hitting a stick on a box—we couldn't use a click track because he wasn't going to be able to play to a click—so it was me banging a cardboard box with a drumstick, which helped keep it all together. My job as a producer and the engineer, as well, was to give them a great sound in the studio and also make sure that their live vibe did not dissipate in the studio, so therefore, the 'Rock and Roll All Nite' studio version, which I did not record, probably was a little on the sterile side. That's my analysis of it."

As for why it took a live version of "Rock and Roll All Nite" to create a classic track, Kramer offers this theory: "I think it comes back to the concept of a live album. When you have a track that's recognizable, as that track was, it became the party song, and to hear fans screaming in the background made it come alive. I guess Kiss was not played on the radio that much, but whatever stations they were able to get on, the fact that there was a live track must have propelled the sales of the record. That's my guessing of it." For the record, he notes, "A good percentage of that track was overdubbed. Everything, pretty much." (Kiss' management, McGhee Entertainment, did not respond to requests for comments from Simmons and/or Stanley about the making of *Alive!*)

The 1970s were a popular time for live albums, when fans were eager to purchase vinyl memories of bands in concert. Kramer says he recorded "loads of live albums," including Kiss, Peter Frampton and Humble Pie. "I guess you could look at how people referenced FM radio," he says. "Every major city had a great FM rock station that you tuned in to and that became your lifeblood. So when a band did a studio record, then went out on the road, fans loved the live performance—'It's live, man! It sounds cool!' I don't know what the mindsets of folks were, but I'm just guessing they dug it."

Then along came concert DVDs and, of course, YouTube, with its incessant uploads of point-and-shoot and mobile-phone-captured performances, recorded with or without artists' blessings. This and the practice of recording direct into the board on tour have depreciated the value of what producers and engineers such as Kramer perfected. "I think people will still buy a live record, but they're going to download the clips that they like," he says. "It's so easy now, unfortunately, for someone to drag a Pro Tools unit to every live show, and then you have so much live stuff. Anybody can record live now, whereas before, it was a special event. You brought a truck in, you picked the two dates you were going to do, you prayed that the performances would be great. That's why you always did one or two shows or three shows—to make sure you got it all. But now it's easy. You just plug the damned Pro Tools unit into the back of the P.A. board and away you go. Then you mix it afterward, as opposed to taking the time and the effort to plan the thing, prepare what you're going to do and think about the sounds and create the sounds. Recording a band live is almost like baking bread now." ■



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Live



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Blues legend B.B. King performs with an all-star cast at the White House on February 21, 2012.

Photo: Rex Features via AP Images

RED, WHITE AND BLUES AT THE WHITE HOUSE

Music Mix Mobile Captures It All Live By Barbara Schultz

There are a lot of reasons not to envy President Obama's job. But as he told a packed East Room on Presidents Day this year, "...and then there are nights when B.B. King and Mick Jagger come over to your house to play a concert."

Before introducing King, the first artist to perform on a program called "Red White and Blues at the White House," the president told his invited guests the story of Alan Lomax recording Muddy Waters in 1941 for the Library of Congress. In payment, Lomax sent the now-legendary artist two pressings and \$20. Mr. Obama said this illus-

trates the blues' "humble beginnings," rooted in the history of black slavery and oppression.

Then B.B. King took the stage with Jeff Beck, Susan Tedeschi, Derek Trucks, Warren Haynes, Trombone Shorty, Shamekia Copeland, and a house band led by Booker T. Jones. Later performers included Jagger, Buddy Guy and Gary Clark Jr. And with Mr. and Mrs. Obama sitting front-row-center, the blues didn't seem so "humble."

On hand to capture the audio for the live stream on whitehouse.gov and for a later PBS broadcast was the Music Mix Mobile crew in their Voyager truck, which is fitted with Avid

Pro Tools mixers/recorders and a 24-channel D-Command surface, Aphex 188 preamps and Genelec DSP monitoring. When *Mix* contacted Music Mix Mobile two days after the event, veteran engineer Jay Vicari was feverishly remixing the music, with an hour to go till he had to deliver files to Ken Erlich at AEG Productions—a process Vicari had started on Amtrak en route from D.C. back to New York City. Joel Singer, Music Mix Mobile's technical director and co-owner, offers this inside look at what goes into a night of music at the White House:

"We roll in the day before setup for the show.



Photo: Courtesy Music Mix Mobile

Music Mix Mobile's black Voyager truck pulls up to the White House.

First we have to pass the security checkpoint, which is a couple of blocks away from the White House. We open up the entire truck and give the Secret Service and their dogs the ability to go through it all: unload the belly carriers, open up cases, etc., so we can then roll into the secure part of Pennsylvania Avenue.

"We go through the Northeast Portico, and that process is a challenge in itself. All the ornate cement work leaves literally 108 inches for us to pass through, and our truck is 102 inches wide; that's a very slim margin. The driveway has a 5-percent grade, too, so we have to level our trucks next, and then once we get power from their generators, we can start doing our cabling and put our preamps inside.

"Then it becomes a really surreal event, because you're walking in and out of the White House like it's the front door of your own home. There's a guard there, of course, and everyone who goes through has already been prescreened. You get a special tag that has a sensor inside of it, so at any given time, they know exactly where you are.

"Once we get our pre's inside, we get connected up to the P.A. that's been installed by

East Shore Sound, Bill Saltzer's company. There's limited room in there; you don't bring big desks, and you don't bring any gear you don't need. That first day, we do all our checks to make sure our lines work—all the stuff that we're doing from the room, and truck to truck with the video company, and once everything is set up we can go into rehearsals.

"We had everybody but

B.B. King and Warren Haynes there on that Monday, so we were able to run through most of the numbers the day before.

"Everything at the White House starts ahead of time; if your call is 8 o'clock, you've got to be there by 7:30 so you can go through the security screening and get your tag for the day. We got in there about 10:30 on the day of show and got in a full dress rehearsal in the room.

"The East Room is a great room with a historical vibe. It is a little tight for an audience of 150 or 200. We keep a lot of stuff out on the roof that's to the left of the East Room because you can't fit everything. There are wood floors, hard surfaces, so there's a little reverberance, but it's a good-sounding space. They use the Blue Room next to it as kind of a staging area, and the Green Room as a meeting room, so they do give us a good section of the east side of the White House to do these shows.

"This program was only supposed to be 80 minutes, but it lasted two hours. Ron Reaves mixed the show [for the house]—the same guy who mixed the Grammys with us—and Mike Bove mixed monitors, and these are seasoned pros, but with something like nine guitarists onstage, a lot of it becomes a reinforcement gig and not a mixing gig.

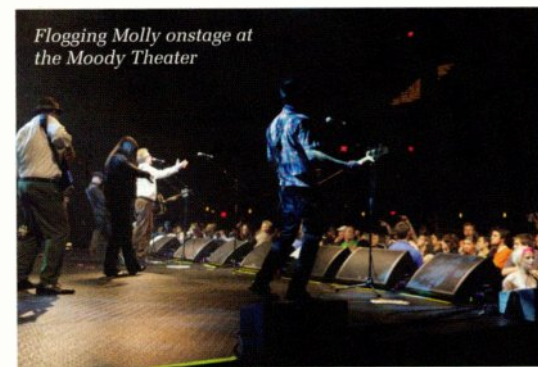
"And then you have surprises like what happened with Trombone Shorty. He used a clip-on mic, so he could have freedom of movement, and he swung the horn one way, and that mic went flying a good 12 inches, so it was no longer pointing at his instrument; it was pointing at the band. But that's why we have a talented remixer like Jay Vicari, who is digging it out of the mix and he'll make it sound as good as it can sound." ■

POLLSTAR AWARD FOR AUSTIN CITY LIMITS

The Moody Theater, where *Austin City Limits* relocated almost a year ago, has won *Pollstar's* award for Best New Venue 2012.

Working with BOKA Powell Architecture, veteran acoustician Steven Durr (stevendurr.com) designed the house and studio facilities with the experience of the audience and performers in mind:

"The first thing we always do is make sure the artist is going to feel comfortable onstage," Durr explains. "The quality of a live performance is almost totally dictated by the emotional state of the artist. I spent a lot of time making the stage, as well as the house, sound great, so when an artist steps on stage, the reverb tonality and decay in the room is very pleasant; sounds come back to the artist with a very warm feel."



Flogging Molly onstage at the Moody Theater

Photo: Earl McGehee

The 2,700-person-capacity theater is fitted with a Meyer Sound P.A.: Two arrays of eight MICA loudspeakers each, as the main clusters and two arrays of 10 Melodie loudspeakers for the side seating areas, plus 600-HP subs, and a variety of other Meyer speakers for fills and delays. Onstage are 12 Meyer MJF-212A stage monitors. *ACL* currently has an analog Midas desk in house but often rents front-of-house and monitor consoles to the artists' preference.

Austin City Limits will tape about 45 dates per year in the new venue; the rest of the time, the Moody is a concert hall that can be used for other performances.

The theater was christened by Willie Nelson with an orchestra. "It sounded amazing right off the bat," Durr says. "You can do all the drawings and predictions in the world, but you never know until you hear."

For a list of pro sound reinforcement industry winners, visit mixonline.com/mixline_live/pollstar_concertindustryawards_2011.

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Watch a video of the rehearsals for Red, White and Blues at the White House, with artist interviews. mixonline.com/april2012



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"We set up a pair of [NEXO] N-12s to the left and right of Ray," says Davies' monitor engineer, Chris Wibberley. "Of the pair to his left, the outside one is on its own mix, giving a discrete mix to guitarist Bill Shandley, with the remaining three delivering Ray's mix. When Bill isn't at the front, I can just mute the mic inputs that go into his mix and use all four wedges to give complete coverage to Ray. The N-12s are so phase-coherent that I can flick between the two modes. Because of the way the units couple, the N-12s act as a single source. If Ray, by himself, wants more of anything, I can put it into Bill's wedge. Or I can put it into acoustic mode, turning down Ray's bits and turning up the Bill bits; any of Ray's bits that Bill wants to hear will be completely in sync with Ray's wedges."



Photo: CM Photos

SAW DOCTORS: VOCAL IS KING



Photo: Steve Gullick

Irish rock band the Saw Doctors are Stateside, visiting clubs and theaters along with their longtime FOH engineer, Paul Keegan. The group uses mainly house-provided or locally rented production, but they carry their own mics and DIs. "Shure Beta 57As for vocals gives us more vocal and less backline spill than you get with SM58s," Keegan notes. "The vocal is king, especially because so many of their songs are story-based. This requires leaving enough headroom to push the vocals over the backline levels when needed, so I tend to keep levels in the room to the minimum needed to give some low-end punch and clarity, and let the dynamics of the music take it up or down from there."

MUMIY TROLL: ARENA SOUND IN THE CLUBS

It's a long way to America from their home in Russia for rock 'n' rollers Mumiy Troll, so their touring engineer, Alex Dakoglou, says the band travels with only "their instruments, suitcases and vodka. On recent dates with L.A.-based band Run Run Run co-headlining, the two bands shared the same backline, transportation, accommoda-



Photo: Michael Mallar

tions, tour manager, and sound engineer—myself. They even crewed for each other. It was the ultimate in collaboration and teamwork." On mixing the group some call the "Stones of Russia," Dakoglou says, "Having done arena tours all over the world, Mumiy Troll's American club shows tend to have arena-type energy regardless of how big the venue is. I find it is better to use their big stage sound as part of the mix, rather than to try and fight with the P.A. The trick is to keep the lead vocal and the softer-sounding instruments like synthesizers from getting buried." Look for Mumiy Troll's U.S. debut album, completed at The Village in L.A., this month.

INNSBRUCK CELEBRATES GAMES AND MUSIC

During the first Winter Youth Olympic Games, held January 13-22, 2012, Innsbruck, Austria's city center was transformed into a party zone. The P.A. was an L-Acoustics Kara/Kiva system comprising nine Kara cabinets left and right, four SB28 and four SB18 subs for each side, four 12XT coaxials for in- and outfill. Nine LA8 amplified controllers in LA-RAKs powered the system. The delay system included seven Kiva cabs and two Kilo low-frequency extensions for left and right hangs. The system was used for victory ceremonies and music, as the Games coincided with the Innsbruck 2012 Music Festival, which features performances of Austrian folk music, hip-hop and rock.



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THE FRAY



Vocalist and keyboardist
Isaac Slade

Denver-based rockers The Fray—touring behind their third studio album, *Scars & Stories*—played to a sold-out crowd at the Fox Theater in Oakland, Calif.



FOH engineer Chris Rabold (left, with system tech Kevin Lehman) is mixing on a DiGiCo SD10 console. “This is the first time I’ve had a console running at 96k,” he says. “Pretty jaw-dropping. I enjoy using plug-ins live, but I wanted to get back to doing a run with just a great-sounding console and some great-sounding outboard gear. No plugs; it’s been a blast.”

Rabold’s rack has Empirical Labs Distressors and DerrEssers, which, he says, “help not only to keep sibilance in check, but they keep any errant frequencies from exciting the room” when frontman Slade stands in front of the P.A. He’s also carrying compressors from Empirical Labs, Crane Song and API, a TC Electronic System 6000 processor, and an old Studio Technologies AN2 stereo processor: “I send a mono guitar bus to it, and it creates a stereo spread of that signal,” Rabold says. “It’s fully mono-compatible, too, so it never folds when it’s summed to mono. That’s the secret weapon piece.”



Drummer Ben Wysocki (behind kit) is pictured with **drum tech John Jackson**. Drum mics on Wysocki’s kit are a Shure Beta 91A and a Heil PR48 on kick; Shure SM57 and Telefunken M80 on snare, Neumann KM184s on hi-hats and ride; Earthworks DP30/Cs on toms, and Earthworks SR40 overheads. Rabold says he uses an API 2500 “as the main drum bus compressor, and the Fatso is used to squeeze the hell out of another drum group that sits just under the main drum bus in the mix.”

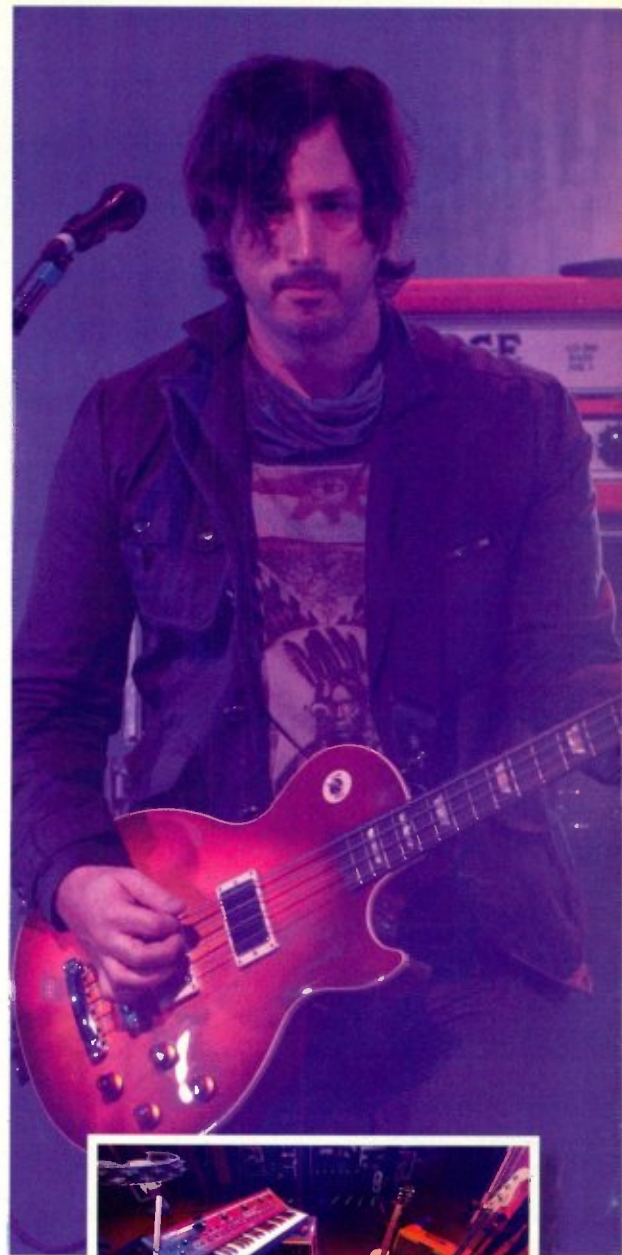


Guitarist Dave Welsh's amps (at left, with guitar tech Adrian Sanchez) are miked with a Royer 121 and 101, and a Sennheiser 409. "The ribbon mics all go through True Systems' P-Solo Ribbon mic pre's," Rabold says. "This ensures that the ribbons see a high-impedance input at the preamp."



Keyboardist/percussionist Jeff Linsenmaier is surrounded by instruments: an 18-inch floor tom, glockenspiel, Nord Stage 2 keyboard, Novation Nocturn 25 and a Nocturn Launchpad. Both Nocturns are used to trigger tracks and control MIDI sounds in Ableton Live.

Guitar tech Josh Gaunt says that **guitarist Joe King** uses amplifiers from 65 Amps (a Landon Pro head with a 65 Amp 2x12 cabinet housing a Celestion Alnico Blue and a Celestion Vintage Series anniversary loudspeaker). He also uses a Vox AC30 30th anniversary limited-edition. The amps are miked with a Sennheiser 906 and an Audio-Technica 4081.



Bass and keyboard player Jeremy McCoy uses an Orange AD200 Mk3 bass head and Ampeg SVT-810 AV cabinet. He also occasionally plays guitar through a Victoria 50212 Combo amp.



Monitor engineer Jamie Landry is mixing on an Avid Venue Profile. "I use plug-ins on some of the more high-profile channels—lead vocal, piano, etc.—as well as on a couple of the outputs on the ear mixes," he says, "mainly Focusrite EQs, Purple MC77 and Impact compression, and Revibe reverb. Most of the bandmembers are on in-ears. "We're in the process of switching from a variety of different brands to getting everyone on JH Audio [in-ears]," Landry says. "Most everyone will be on JH16s, except for Isaac, who is on JH11 ambients. Isaac really likes to hear the natural sound of the room and crowd, which is why he prefers the ambient IEMs; it's also why he likes to take one ear in and out. I supplement his and Joe's ear mixes with a pair of d&b M2 wedges, and Dave just uses wedges. In addition to his IEMs, Ben also has a pair of d&b Q subs and a thumper."

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Photo: Christine Alicino

John Loose, standing, with Kevin Perry, left, and Jurgen Scharpf

DOLBY MIX A

Mastering-Quality Space for Multichannel Mixing

By Tom Kenny

With all the attention focused on 7.1 mixing over the past year, it's easy to forget that the format really got its start in home theater with Dolby Pro Logic IIx. John Loose of Dolby remembers; he was part of the team that launched the company's initiative more than a decade ago, and he's been mixing in 7.1 since 2002, figuring out the busing and panning issues and focusing on the creative. But until a few months ago, he

did many of his bigger projects up at Skywalker Sound and in other facilities because he never really had a true pro-level room to call his own.

"At Dolby, we have some of the finest speakers in the world set up in different environments," says Loose, senior manager, AV and media production. "And we have a Presentation Theater that is one of the best in the world. But creatively, my team had been working in the same square footage space since 1999, doing demo DVDs for

our new technologies and trade show videos. It was basically a square conference room with some treatment. The bass had a 10dB shift, the noise floor was scandalous, but we made it work. I had been asking for an upgrade for about ten years now, and, after a visit to Skywalker and a look at their rooms, the executive team came up with the money."

With budget in hand, Loose started visiting rooms and soliciting input. A friend, Ken Felton at Sony Computer Entertainment, brought him by the PlayStation rooms in nearby Foster City, Calif., for a listen to their Chris Pelonis-designed edit suites and mix room, which include Pelonis Signature Series monitors. "I loved the sound of the rooms," Loose recalls. "Super tight. I'm a drummer, so I like that tight punch. And they were extremely accurate and true, dead flat, which is extremely important to us."

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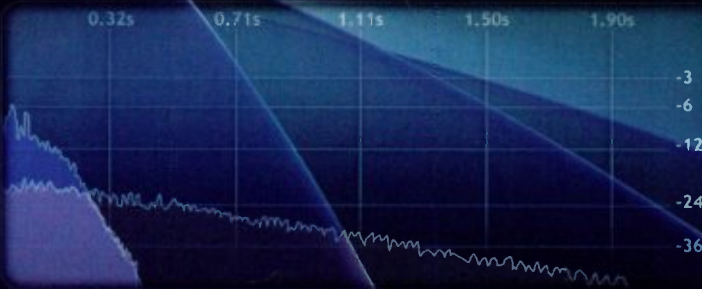
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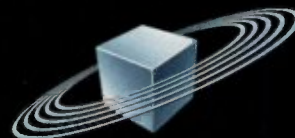
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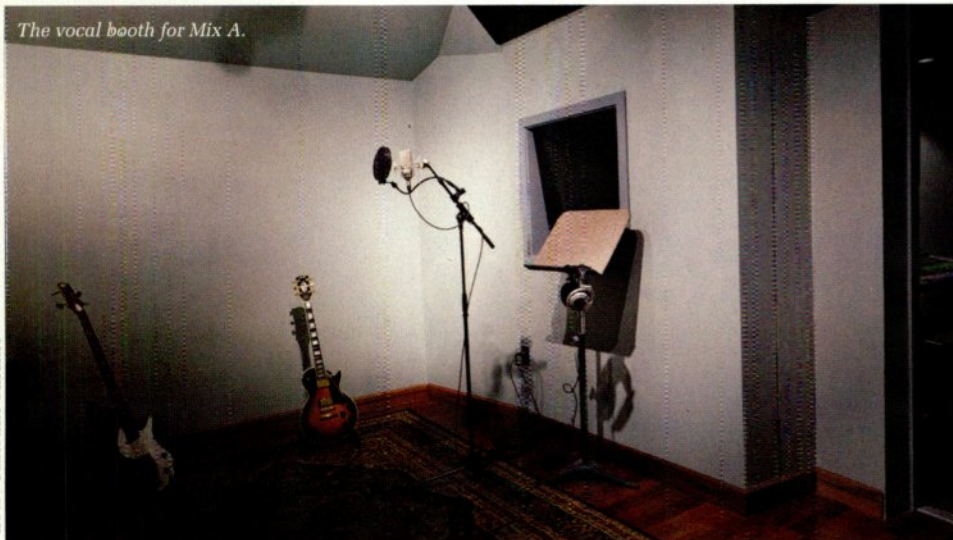


Photo: Christine Alicino

Pelonis got the gig, and on his first visit, he made it apparent that they would need volume to achieve the isolation required and to meet the creative needs of working in 7.1 to picture. The footprint had to stay the same, so they looked to the ceiling. “We have tall, sometimes double-high ceilings in the Dolby offices, and there was dead space above our room, mostly filled with conduit and HVAC,” Loose explains. “So we ripped out the roof, moved as much as we could and pushed the ‘acoustics’ of our ceiling up about five feet.”

“We had to re-route some of the HVAC and work around some of it,” Pelonis adds, “and with roughly 5 feet to work with, we ended up with essentially a three-layer ceiling that at the top is a layer of QuietWood, then spring isolators for the drop ceiling, holding up a layer of QuietRock, then another gap that we filled with insulation and Bonded Logic absorption material, then another layer of QuietRock. On the actual ceiling, then, we have RPG Skyline Diffusers and BADD Panels. When I know I can get more room in the ceiling, I like to go for it.”

Along the back wall, where the sides taper into single-wall construction, Pelonis installed his patented Modex Edge traps in the corners and sealed the projection window. Along the front wall he provided some low-frequency relief in the corners. Noted San Francisco Bay Area contractor Dennis Stearns built the room, receiving high praise from both Loose and Pelonis.

Besides going into the walls, Loose and his team—re-recording mixer Jurgen Scharpf and systems engineer Kevin Perry—used the opportunity to completely update their equipment package and streamline their workflow.

“We told Chris at the outset that we would

be making a transition from a room with a lot of outboard gear to a room that was more of a mastering space,” Loose says. “We wanted a modern console, and we wanted to get rid of the credenza behind the mix position. The outboard gear was mostly Dolby real-time units, and we do most of that in software these days. We put all of that gear in the machine room, though we kept a few select pieces, like the DP564 and the LM100, and a Dolby Lake Processor. Then we put in a 32-fader Avid D-Control ES, upgraded our Pro Tools rig and put in seven Pelonis Model 110P two-way passive reference monitors, which we are really using in the midfield.” They kept their Velodyne Model DD15BG 15-inch sub.

One of the simpler but most dramatic changes had to do with picture, where they replaced a large LCD TV, which had been positioned up high to accommodate the center channel, with a TruVue Vango 1080p projector and 62-inch Seymour Screen Excellence Enlightor 4K microperf screen, with the center speaker behind it. Only a tiny bit of EQ was necessary to compensate.

“We do a lot of Dolby demo discs, introducing new technologies, so we aim very, very high in sound,” Loose says in summary. “Then we also get the opportunity to work on some real inventive projects, like the recent *Art of Flight* (see the December 2011 issue of *Mix*) and a couple of 7.1 music video remixes we have coming up, from the original tracks—sort of our own version of a remix, done tastefully and creatively. When you work in a room like this your studio becomes your sanctuary. As soon as you close the door, you’re in a beautiful space and it sounds awesome. You forget about the clock.” ■

MOVIE STUDIOS

In the fall of 2010, the movie *The Vow*, the first film of this year to pass the \$100 million mark, was shot in both Chicago (where the story is set) and in Toronto. It’s a tearjerker date movie involving accidents and memory loss, starring Channing Tatum and Rachel McAdams, but the interesting angle for the *Mix* audience is that the Tatum character is owner of a recording studio, Roar Sound in Chicago. But this is Hollywood, so the studio that stars in the film is actually Phase One Studios in Toronto.

“No music was recorded with us, but it was fun to have movieland visit,” says Phase One owner Barry Lubotta. “We had all the trailers outside and the attendant crew, who were all very nice and treated our studio with respect. And the catering was first rate!”



The set at Phase One.

The engineer in the movie was “Lily” (Tatiana Maslany), and when she first got in contact with the staff at Phase One, “it was obvious she had no knowledge of what an engineer was supposed to do,” Lubotta explains. “So we invited her to come by ahead of time, on a quiet day, and our staff taught her the ins and outs of being an engineer, which she picked up very quickly. We thought she really nailed it in the movie, and it was nice that her shoot was on her birthday.”

During that pre-shoot visit, Lubotta and his team had a conversation with Maslany while she took notes. When the movie came out, the real-life engineers found that some of their lines had been used verbatim. “Engineer Mike Smith ‘wrote’ one of the best lines in the movie when he talked about why large studios are still relevant—something about the slapback of a guitar going through analog tape,” Lubotta says. “I chirped in with, ‘You just can’t make any money in the studio business anymore,’ and that was also used in the movie! Who knew?”

Phase One has been around since 1974, and owned by Lubotta since 2000. The movie was shot in Studio A, which was designed 38 years ago by George Augspurger. There are two other rooms featuring API and SSL consoles, and a smaller fourth room that has an Avid/Digidesign Control 24.

—Tom Kenny

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SURF SOUNDS

There's a reason that most video or film coverage of surfing relies on post-produced sound: Saltwater is hell on electronics. Tim Denmark, an RF engineer for NFL broadcasts and an avid surfer, knew some of the excitement and rush from inside the wave and set out to capture it. As owner/operator of Leucadia, Calif., based H2audio, he designed a system that fits in a wet suit, based around Countryman lavalier mics and a Lectrosanics wireless package.

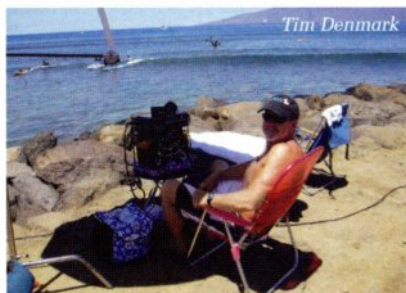
"The process of wiring a surfer for audio involves a specially made Lycra shirt, or rash guard, that has a pocket on the inside middle of the back," Denmark says. "Sewn into the rash guard is a channel that extends from the pocket up to the collar. With the Lectrosanics MM400 wireless transmitter secured in the back pocket, both the transmitter's antenna and a Countryman B3 lavalier microphone with a water-resistant capsule extend up the shirt's channel to the collar. The antenna is attached to the back of the shirt while the B3 microphone is affixed to the front of the collar. This setup enables me to capture every audible sound as the surfer rides, and through it all, my MM400s and B3s have performed beautifully."



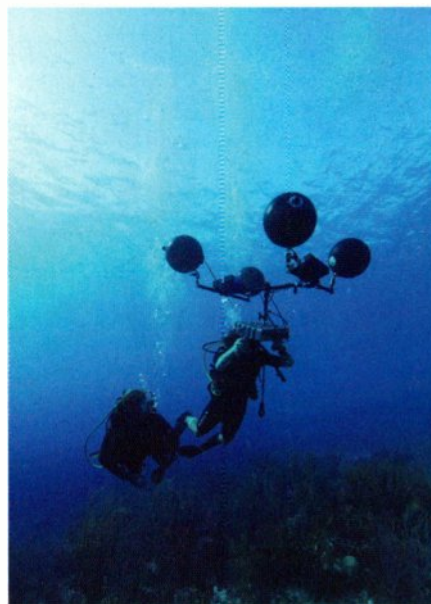
When he did audio for ABC's *X Games* a few years back, between surfers, coaches and their crews, Denmark would regularly employ a dozen B3 mics and up to 24 Lectrosanics MM400 A and B Series water-resistant transmitters, and 10 UCR211 UHF receiver systems. Recently, he worked on the Volcom Pipe Pro surfing event at the Banzai Pipeline on the north shore of Oahu.

On a recent shoot for the upcoming film *Of Men and Mavericks*, he added in some more ambient sounds. "There's a company called H2o Audio that makes waterproof accessories for sports enthusiasts," he says. "I use the Countryman EMW [Omni Classic Lavalier] attached to an H2o Audio armband that has been modified to hold a Zaxcom ZFR100 audio recorder. This enables me to capture ambient sounds that can be inserted into a film during audio post-production. I can send someone who's been 'wired up' out to record the sound of breaking waves."

For additional information about H2audio and Tim Denmark, visit the company online at h2audio.net.



UNDER THE SEA



It turns out that there is a whole lot of sound going on beneath the ocean waves, and German company Ambient Recording has developed a special recording system for the first-ever commercial documentary to feature underwater surround sound. Recorded off the Caribbean island of Bonaire in November 2011, the documentary is titled *The Cannon Crackers of the Pistol Shrimp*. As one of the loudest animals on the planet, pistol shrimp live in colonies of up to 16,000 and snap their claws so

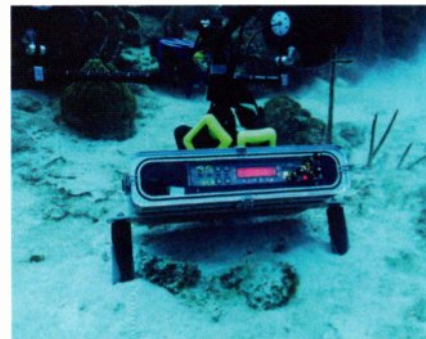
fast together the water around them vaporizes. They also create bubbles, which implode with a loud cracking sound.

"The underwater world is not a silent one," says Timo Klinge, marketing manager of Ambient Recording. "Coral reefs are filled with millions of sounds, just like a jungle or a summer meadow. We knew we wanted to use Sound Devices recorders when we created our complete surround underwater rig because they are extremely compact, very rugged and have excellent sound. We created the underwater housing in order for the 788T to operate efficiently underwater."

The Ambient Recording housing, designed for all Sound Devices 7 Series recorders, is made out of hard anodized seawater-resistant aluminum, which is then PTFE-coated, giving it the highest possible durability and stability. The top is made out of 4cm thick Plexiglas to offer a perfect sight

on all meters and displays for all Sound Devices 7 Series recorders. Power, Record, Stop and Volume functions can be controlled through the housing, which is waterproof up to 100m and weighs 10 kilograms, including the recorder. Beneath the water its buoyancy is just slightly negative, which can be adjusted by additional buoyancy bodies.

In addition to the two Sound Devices 788T recorders, Ambient Sound used a Sonar Surround RS5 underwater surround rig attached to the Sound Devices underwater 7 Series housing with four Sonar Surround DS30 directivity spheres, each equipped with an Ambient TC4042 hydrophone. Three Ambient TC 4013S hydrophones were attached to one of the camera housings and one Ambient TC4032 hydrophone was used to record far-off sounds.



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Photo: Murray Close

TER

BY BLAIR JACKSON

With the highest first-day advance ticket sales in history and an enormous worldwide fan base certain to fill seats for weeks to come, *The Hunger Games*, based on Suzanne Collins' mega-popular Y.A. (young adult) novel about a 16-year-old girl's fight for survival in a brutal dystopian future, is poised to become a rare early-spring blockbuster. It would seem to have all the ingredients a youthful audience could want—an attractive and determined heroine, action and enough violence to earn a PG-13 rating, a smattering of romance, and intriguing futuristic fantasy elements. Yet, talk to the film's sound crew, and you'll hear that director Gary Ross consciously tried to avoid making a summer popcorn movie, instead delivering a more nuanced story rich in character development.

Ross, who is best known for writing and directing *Pleasantville* and *Seabiscuit*, and for writing such other films as *Big, Dave* and *The Tale of Despereaux*, took his cue on how to translate *The Hunger Games* to the screen by enlisting Suzanne Collins to co-write the screenplay with him and sticking to the book's approach—which is to say, the story is told almost entirely through the eyes of lead character Katniss Everdeen (played by Jennifer Lawrence). A girl from an impoverished area called Section 12 in apost-apocalyptic North America known as Panem, Katniss becomes one of 24 young "tributes" who will fight to be the last person alive in an annual televised event called The Hunger Games, staged by Panem's fascist Big Brother regime. The lethal Games take place in an enormous, many-square-mile region of the country (called "the arena") that appears to be outdoors, but is actually under a massive dome and totally under the control of the Gamemakers, who keep the games interesting for TV viewers by imperiling the combatants with extreme weather changes, forest fires, venomous genetically engineered wasps, and more.

"I think there's an assumption out there that this is an action movie, and it's not," comments supervising sound editor Lon Bender from his studio at Soundelux in Hollywood. "It's really a visceral personal story that's almost like a documentary of this one girl's experience going through this whole quest for survival. That's how the production design went and how the

sound design went, and in every case we made that our primary mantra—'What would Katniss be experiencing?'

"There's very little emphasis on sonic extravagance," he continues. "The muscular nature of the sound is very subdued, in particular because this isn't a spectacle—it's a story about a girl who's a freedom fighter. She experiences things in a personal way. This movie has some great sound sequences in it, but they're all knitted together in a way that stays with her, which is what Gary Ross wanted. He wanted the audience to never be distracted by the sound or visuals."

As an example, Bender cites a scene before the Games begin in which Katniss demonstrates her skills with a bow and arrow before the judges: "[Visually] we're very close to her, so we hear all the details of her fingers handling the arrows and the bow. When she pulls the bow string back and the tension increases right next to her head, we hear these very subtle catgut-type single clinks of tension of the string. Then we cut to the judges and a shot that pans along them, but what you hear are three specifically placed 'tinks' of that bow, so you're staying with her even though you've cut to this point of view. Then, when you come back to her, she releases the arrow and it's like you've totally been with her the whole time."

Adds dialog and music re-recording mixer Mike Prestwood-Smith, "This film has some of the most intimate camera work that I've seen; literally, you're on her nose and her lip with the

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Photo: Murray Close

bow string right there, so the sound had to reflect that sort of proximity. With the breathing and the Foley, it's very intimate-sounding."

Effects re-recording mixer Michael Keller elaborates on another instance where Katniss' POV determined a different approach to a scene. "There's a big shot of the forest burning, and of course my instinct was, 'Let's play it as huge fire.' But that's not what Gary Ross wanted. He wanted Katniss to be so shocked by it that it's kind of a surreal fire moment. He wanted to start with a quiet rumble that wakes her up, and then that continues through that giant fire shot, where in any other movie you'd go full-on loud sound effects. But in this one it stays very subtle and muted and muffled—it was mainly a subwoofer and some wood stress [sounds]. Then, once she figures out what is happening and she realizes, 'I gotta get out of here!' then it opens up [sonically] and it's more like what you might expect it to sound like."

The fire forces Katniss to flee toward her foes, as orchestrated by the Gamemakers. Later, another explosion causes her to lose her hearing in one ear.

"The familiar high-frequency ring of tinnitus, combined with the confusion one would experience, were combined in the sequence," Bender says. "The goal there was to have the audience experience the same thing—the tone made almost painfully loud and the dialog and sounds muted, as an analogy for her confusion over what she is perceiving."

With environments ranging from Katniss' dirt-poor, Appalachia-like District 12 (the movie was shot entirely in North Carolina) to the gleaming Capitol, with its magnetic elevated trains, hovercrafts, high-tech interiors and the Gamemakers' sophisticated control center, Bender, his sound design team and the mixers had plenty of opportunities to paint evocatively with sound. Bender made a couple of trips to North Carolina to collect natural sounds (including the region's distinctive cicadas, great for slightly discomfiting background ambience) and even did some large-group 5.1 recordings on set with a DPA 5100 microphone. Mark Weingarten was the production mixer for the exterior scenes; Carl Rudisill handled the in-



teriors, some of which were shot in an old, abandoned Philip Morris distribution center outside of Charlotte.

The Hunger Games turned out to be a fairly Foley-intensive movie (the ubiquitous Gary Hecker was the supervising Foley artist), and because so much of the movie takes place outdoors, Bender decided to try something that was new for him—having some of the Foley recorded out in nature instead of on a traditional Foley stage (though there was plenty of that, too, shot at Todd-AO West/Lantana). “I wanted the footsteps to have a really organic quality to them so I came up with a system to record them in a natural setting,” Bender explains. “We ended up going to a canyon in the San Gabriel Mountains with our wonderful Foley artist, Catherine Harper. We brought along a couple of production recordists to capture the film’s perspectives, and we actually did footsteps to picture in the forest. We also got some great material in this incredible oak tree, for when Katniss climbs various trees. What we came up with really does have an amazingly organic sound, and we were able to have a lot of variation all the way through using that material exclusively in the arena.”

FX mixer Keller was impressed. “The Foley was fantas-

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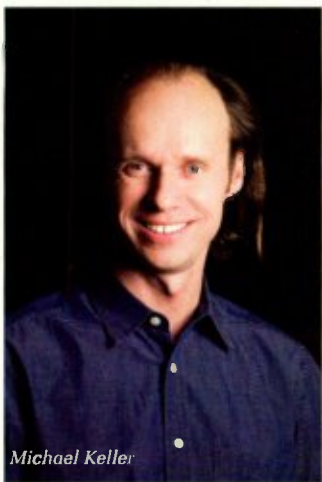
World Radio History





Lou Bender

tic, probably the best I've heard," says the veteran of more than two decades of work in almost every film genre imaginable. "They had a close-up mic on the walker and also a boom mic [both Schoeps], so I always had those two tracks going. So when I pre-dubbed the Foley, I could run the boom mic for her being distant and then crossfade it on to the close-up mic to get the snappy and crinkly leaves and whatnot. It made a huge difference being able to change the distance of the microphone, which you normally can't do in Foley. I also needed less background because I had it in the Foley."



Michael Keller

Bender makes a point to lavish praise on two of his principal sound designers/editors, William Dean and Kris Fenske. "Bill dealt with the 'tribute parade' [where the fighting contestants are unveiled as a group] and the big interview sequence [in which the tributes talk about themselves on TV], so he did some great crowd work. He also did the mag lev train and other sequences."



Mike Prestwood-Smith

Fenske "was responsible for developing the tracker jackers and the mockingjays, and the fire sequence."

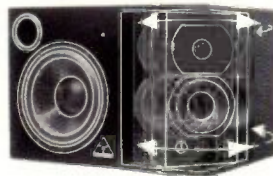
Ah, yes, the tracker jackers and the mockingjays—two of the strange creatures that inhabit the forests of Panem, and also among the first effects tackled by Bender and his team.

The tracker jackers are a type of genetically engineered wasp whose sting causes insanity-inducing hallucinations and is often lethal. Bender's initial sonic inspiration came when he was with his son at a mountain bike race "and all the kids were warming up on their trainers, and there was

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this incredible buzz of all the tire treads. I quickly grabbed my Zoom recorder, which I always have with me, and I recorded them. I couldn't use those recordings because there were people talking, but later on we engaged with some mountain bike pros and we recorded all kinds of sounds, using different kinds of treads and different tires and different elements rubbing on the treads. So the tracker jackers are made up of some real swarms of things, but also some of these bike treads."

As for the mockingjays, "Those are birds that can mimic what people say, sing or whistle," Bender explains, "so there are melodies that the characters sing and whistle, and our task was to make birds that sound totally real follow these melodies. We used two elements that worked together: We listened to different birds and then took single tweet elements, or a small portion of the voice of a bird, and put those together in different sequences that represented the notes of the melodies. We used Melodyne to pitch them into the melodies and then, in sync with that, we did some whistling and put those in the same pitches. Those things together gave you this sense that the birds were real."

Keller and Prestwood-Smith mixed the film's plethora of Pro Tools elements on Stage 2 at Todd-AO Hollywood on an Avid System 5. "Working on the System 5 gave us a lot of flexibility because it can control Pro Tools directly through the EuCon protocol. Now that it's one company, they opened up the code so you can pretty much access any parameter in Pro Tools through the System 5. The workflow never changed, except I had to deal with the

and music. Keller adds: "I was not aware before of what a difference it is to have the side speakers decoupled from the rears. What's interesting is once you don't play a sound effect in a rear speaker, and you only play it in the side speakers, it becomes way more apparent, since the ears face forward and sideways. When we took the 7.1 print master and folded it down to a regular 5.1, some of the detail in the surrounds disappeared. I assume it's the reflections you get from the surrounds that shoots off the screen and back at you. That diffuses the whole sound field and it gets muddied. You can't hear single birds or twig snaps."

Prestwood-Smith also worked with an eclectic music score, which ranged from composed elements by James Newton Howard and T Bone Burnett (working independently) to a deconstructed opus by the Chemical Brothers, and tracks of voices by a Russian composer that were added to one of Burnett's pieces.

"One of the ways music in film works is it can emotionally change your perspective without you being aware of it," Prestwood-Smith says, "so a lot of the music was designed to play Katniss' point of view and to almost take over what we would be hearing at that point and go with her feeling."

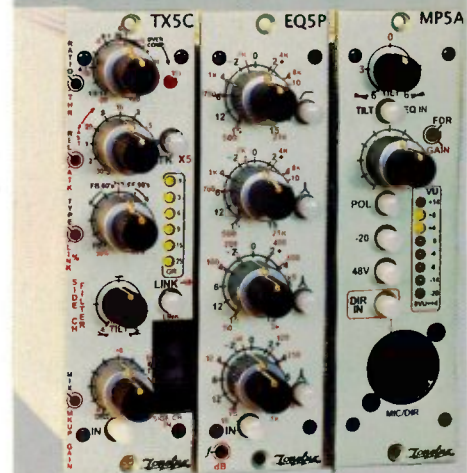
"It always came down to her," Keller adds. "Whenever the music played a driving Hollywood-style scene of typical 'chase' music, Gary didn't like it and we downplayed it and stripped it down to make it more simplistic. He always wanted to support Katniss' feelings or make the music reflect her curiosity about what was about to happen. But never state the obvious." ■

Pro Tools automation modes, vs. the console automation modes. But the flexibility we had was fantastic because it was easy to take a [composite] sound and strip out single elements—mute parts of the clip—and not replace the whole thing. We could try things out that way until Gary liked it."

This was the first 7.1 film for Prestwood-Smith, and he considered it a "serious jump ahead of 5.1," in that the side speakers widened a lot of the atmospheres

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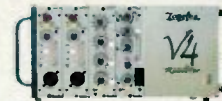
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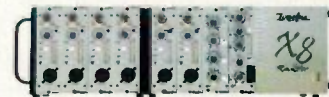
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The Newsroom

Communication Is Key in Multiroom Set

By Blair Jackson

Riding high since winning an Oscar last year for writing *The Social Network*, and being nominated this past year for *Moneyball*, Aaron Sorkin is plunging back into television—where his greatest success was the multiple-Emy winning *The West Wing*—with another socially conscious series beginning in June, HBO's fast-paced new drama *The Newsroom*.

Sorkin evidently likes the “backstage” milieu, having previously explored a cable sports network on *Sports Night* and a late-night comedy sketch show on *Studio 60 on the Sunset Strip*. Now he takes us behind the scenes of the fictional cable network ACN (Atlantis Cable News), from on-air talent to the control room crew to reporters out in the field.

The show is mostly shot on Sunset Gower Studios Stage 7 in Hollywood, on an enormous multiroom set that includes the news broadcast set, the adjacent faux control room, a “green room,” a “bullpen” area for the ACN writers and such, and nearby, within the same stage, “remote” locations for live reports that might come in from New York or elsewhere.

Part of what makes the show so visceral is that much of the action takes place in real time, with multiple cameras in different locales on the set, as well as moving cameras, capturing what's going on simultaneously in different parts of the operation. A typical scene/take could be as long as ten minutes and involve several different locales—not an easy flow to accomplish.

What that has meant on a technical level is a uniquely complex situation where actors in different rooms and environments must constantly be aware of what's happening in the scene in other parts of the set. In other words, one continuous take might involve the newscast on the set, switch to the control room, move down the hallway to the bullpen, and even incorporate a “live” remote feed into the simulated newscast. The timing and the rhythm of the dialog is everything, whether it takes place in a single room, or in several rooms at once as it often does in *The Newsroom*.

“It's Aaron Sorkin, and his dialog comes like machine gun fire,” laughs veteran production mixer Jim Stuebe. “One of the production sound mixer's



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- > Choice of analogue or Firewire/ADAT interface modules
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biggest hassles is overlapping dialog and trying to control it so the editors can work with it later, but the rule on this one is you don't stop anyone; you let them overlap. Fortunately, the actors have gotten really good about knowing when to stop so somebody else can get in."

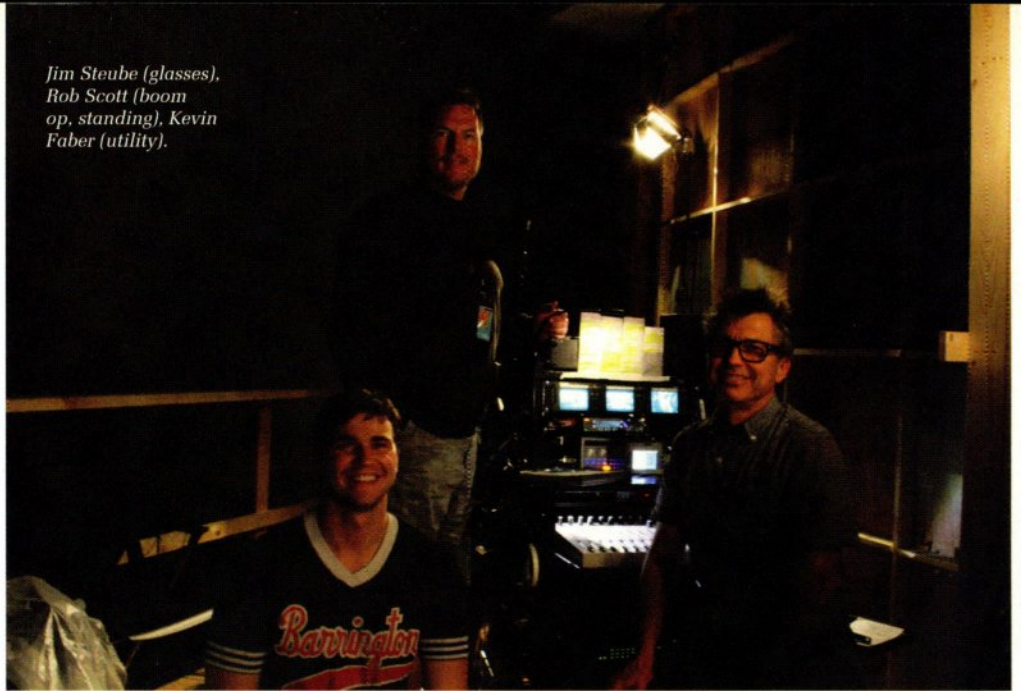
Stuebe has done his share of TV work in the past, including episodes of the HBO hits *Six Feet Under* and *Sex and the City*, but has mostly plied his trade in features, working on such films as *3:10 to Yuma* (for which he earned an Oscar nomination), *Gone Baby Gone* and *Anchorman: The Legend of Ron Burgundy*. Even so, he says, he's never worked on a show quite like *The Newsroom*, which has stretched his production rig to the max and required a whole other layer of involvement on the comms level.

Situated behind one of the set's walls, Stuebe's rig is dominated by a Zaxcom Deva 5 digital recorder, the Deva Mix-12 digital control surface/mixer, plus a Cooper 106 mixer. He follows the action on video monitors. "It's an incredibly complicated show and it takes a lot of planning to make sure everything is covered in those big scenes," Stuebe says. "The Deva is a 10-track, but you can function eight microphones. When I'm doing my track assignments on a big news day [on the show], I will end up using all 10 tracks because I might be doing two separate mixes—a mix for what we call the 'control room,' which is all the producers and everyone sitting in there putting the news show together, and a mix for the studio portion, which would be our anchor, [actor] Jeff Daniels, sitting there and also incorporating all the feeds that would be coming to him, like if he's talking to a correspondent in New York or somewhere else. So I'm actually performing two different mixes at once, and those two other tracks become like the production mixes, and then I can run up to eight iso mics, or seven and a boom mic."

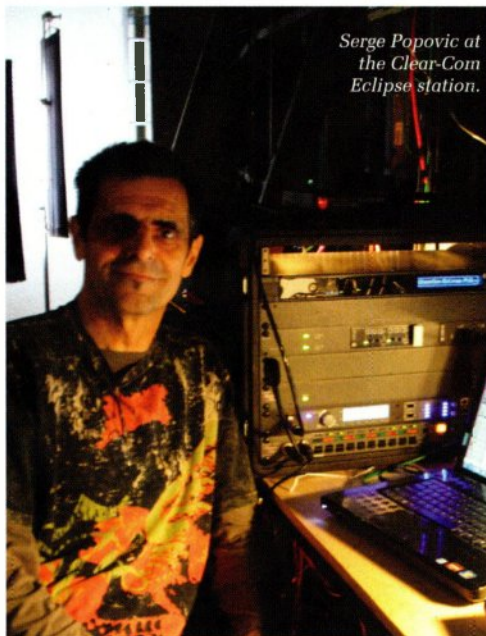
With three sets frequently going simultaneously (in one episode it was five), Stuebe has to make hard choices about how to allot his mics. "I've learned how to squeeze it all down to eight, sometimes capturing more actors on well-placed booms, and if I have to, I'll do submixes on the Cooper—like if we have three correspondents sitting at the desk in the studio and they're all doing interviews, I'll do a submix of them so I'm only taking up one fader or one track when it finally gets to the Deva. We pull every trick out of the book I've learned over all the years."

Stuebe's mics of choice include Sennheiser MKH 60, MKH 50 and Schoeps MK21 for inte-

Jim Steube (glasses),
Rob Scott (boom
op, standing), Kevin
Faber (utility).



Serge Popovic at
the Clear-Com
Eclipse station.



rior booms; a vintage MKH 816 and/or MKH 416 for exteriors; Sanken cos-11DPT and Sennheiser MKE 2 for lavs; and for the radio mics, Lectrosonics SMV transmitters and Lectrosonics UCR 411A receivers. Stuebe's boom operator is Rob Scott, and his utility is Kevin Faber.

Because of the complexity of so many scenes on the main set—with actors in different rooms—another key part of the show's technical setup is a networked intercom system supplied by Clear-Com (Alameda, Calif.). Now, it's common for tech personnel in live sound environments to communicate through simple intercoms—to have, say, the front-of-house, the monitor mixer and the lighting director all hooked-in together. But *The Newsroom* is taking it up a notch by having

the Clear-Com Eclipse Matrix System allow actors to hear what's going on in different rooms on the set, to stay in the flow of the scene as it progresses, and even receive instructions—through the headsets so many of the characters conveniently wear as part of their on-screen jobs—and comments from the actual director of the episode (as opposed to the actor playing the director in the faux control room). Equipping the shooting director and his crew with Tempest 4-channel wireless belt packs provides added mobility to everyone's communications.

"That's the main reason they're able to shoot these scenes in real time," comments Rom Rosenblum, head of Applications Engineering at Clear-Com. "In their world, where they're shooting a scene in the control room and on the news set and other places, they can have everyone hearing everybody so they can do it all in one take instead of: 'Let's shoot the control room first, and then we'll go into the news set and feed the actor the line,' and then he has to imagine the emotion in the original actor's voice and the timing. It's hard to synthesize that doing each scene separately. And the director—not the guy who's playing the director—can actually talk in their ears and give them direction: 'Hang on a second... Give it a beat, give it a beat... and go!' It's really helped with the rhythm of the scenes."

Rosenblum was an A1 (audio operator) in live TV for two decades before joining Clear-Com, so he knows that world intimately. In the past few years, however, intercom routing that once went exclusively through jackfields and required time-consuming wire patching, is now often facilitated through a combination of wireless digital hardware and software options. In the case of *The*

A photograph of Jimmy Douglass, a man with long dreadlocks, sitting on a large JBL LSR Series Studio Monitor in a recording studio. He is wearing a black t-shirt with 'DC 10:3' and 'JBL' on it, and dark pants. The studio has wood-paneled walls and several other JBL LSR Series Studio Monitors are visible in the background.

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World Radio History



The monitor wall in the fictional ACN newsroom.

Newsroom, the Eclipse PiCo Matrix System is the heart of comm setup, which is run by an on-set A2 named Serge Popovic (who is also responsible for putting lav packs on the actors, etc.).

Rosenblum explains, "Serge has got his little spot where he sits, and he's got the ECS—Eclipse Configuration Software—open, and if actor 'X' needs to hear actor 'Y,' he just clicks on a page called Local Advanced, where he can send one panel's mic locally to another panel, and they can all elect who they want or need to hear. If Serge wants to, he can also go to a cross-point map and make a mix: 'I want to hear this guy a little more, this guy a little less.' It's all point-and-click." Production mixer Stuebe will also route a mono mix of the main characters in a scene to Popovic that he can send out as part of his Clear-Com feed to the actors and tech crew.

Matt Morrissey, the show's Video Coordinator, was looking for a comms system to replace the pilot's RTS system, and sought a bit more flexibility and more modern-looking intercom panels for the set. When Jaz Wray from Clear-Com approached him with the idea of putting the Clear-Com system in, and he described some of the flexibility of the system, Morrissey saw the potential and never looked back. When Clear-Com first got involved with *The News-*

"THE THING THAT THE CLEAR-COM REALLY DID FOR US IS IT TOOK ALL THE STUFF WE NEEDED OUT OF THE REMOTE-TRUCK PEOPLE'S HANDS AND PUT IT IN OUR HANDS."

— JIM STEUBE

room—on the first episode after the pilot—there were even experiments in which actual communications through the Clear-Com matrix were being included on the production track. Stuebe says he liked that it had "that tech sound," but ultimately it was decided not to use the actual Clear-Com headset microphone in the live mix; instead, cleaner radio mics are being used to simulate the Clear-Com communications.

Still, Stuebe notes, "The thing that the Clear-Com really did for us is it took all the stuff we

needed out of the remote-truck people's hands and put it in our hands. I can't tell you what a great thing Clear-Com is and what it's done for our show. In the beginning, we were all a little intimidated because it's not something we normally work with, but it became such a tool for us so fast, and everybody on this show is so technically savvy—it's all way-experienced people working at a very high level—that everybody just embraced it and took off with it."

Although the day-to-day production on a show like this can be quite grueling, Stuebe says that it's all gone surprisingly well, both technically and artistically: "I've been so impressed with the actors. It's the hardest dialog I've ever seen, but they come in here having memorized eight or ten pages for these scenes." How many takes will there be of these complex scenes? "Depending on the director, we'll do three to eight. The thing with the dialog is, it's so complicated you don't want to burn out the actors. They're incapable of doing it 15 or 20 times and then going to the next setup and doing it again. You'll lose them if you do that.

"Technically, it's one of the most challenging shows I've done," he adds. "But we've evolved it down to a science and it's running very smoothly." ■



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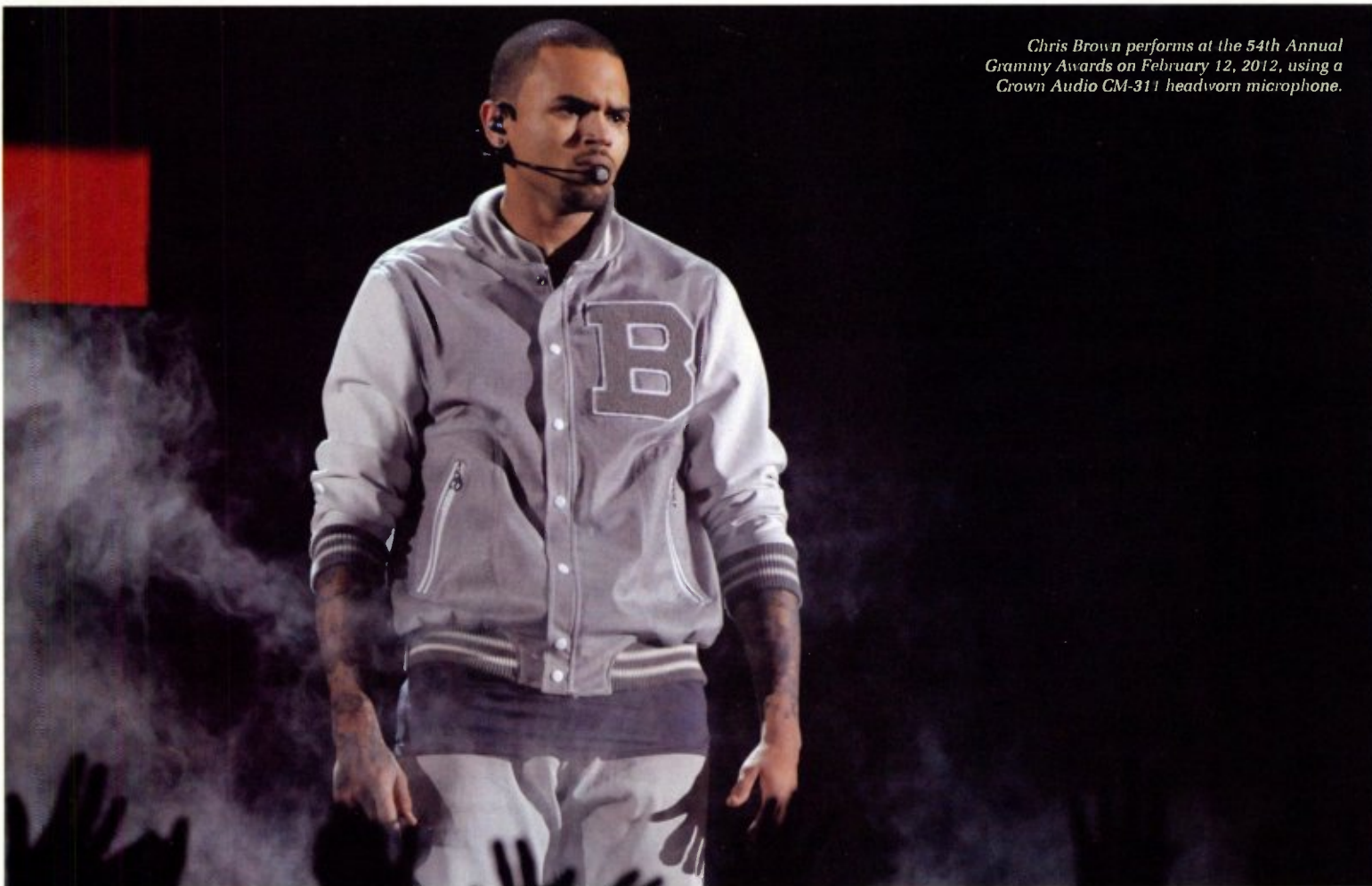
By Steve La Cerra

THE POST 700MHZ WORLD

More Wireless Audio, Less Available Space

There's no doubt that when the FCC auctioned off the 700MHz UHF band several years ago, the pro audio industry took a hit. That range—which is technically 698 MHz to 806 MHz—had provided RF operators and coordinators a fairly large space within which to work without interfering with UHF-TV broadcast. When the Federal Communications Commission was bombarded with objections from the pro audio industry and major content providers such as NARAS, the NFL, Broadway League and Disney, it responded

by providing “safe haven” areas for exclusive use by wireless operators, varying by region. Two TV channels are reserved for use without license in every major market; these are the unused channels nearest to TV 37 (one above and one below) that are not occupied by licensed broadcasters. It's certainly helpful, but the bottom line is that pro audio must work within a reduced spectrum, while productions are using more devices (particularly for communications) and require a higher channel count. Here is how several major events are coping with the changes.



Chris Brown performs at the 54th Annual Grammy Awards on February 12, 2012, using a Crown Audio CM-311 headworn microphone.

Photo: Kevin Mazur, courtesy of The Recording Academy@WireImage.com © 2012

The Shure BETA 87A capsule



Michael Abbott has served as Audio Coordinator for the Grammy Awards since 1998 and cites the Grammys as “one of the more complicated shows that I do on a year-to-year basis,” he says. “The Grammys had approximately 22 performances this year, plus there were a lot of multiple performances such as the Beach Boys, Maroon 5, and Foster The People—all performing at the same time. Each act has distinctly different needs, so I start by compiling a list of information for each act including production contacts, stage plots, input lists and information on the act’s wireless gear, whether they’re bringing it or we’re providing it. For example, one artist requested a Shure Beta 87 capsule on a Sennheiser evolution Series 2000 handheld transmitter. So we provided that.

“Once we have each act’s stage requirements we can start RF coordination, which is simultaneously an ever-expanding yet diminishing field,” he continues. “More people than ever are using RF for vocal microphones, in-ears and instrument systems, but we have less spectrum than in years past. I work with our vendor—Soundtronics Wireless out of Burbank [Calif.]—to create a scheme for managing RF to accommodate our acts as well as our technical crew. That provides the matrix of all the RF requirements, so that at any given moment over the course of the days on-site, we know what RF is going to be fired up and what is compatible, so that it won’t step into the communications RF. Communications require roughly another 200 frequencies for production personnel. It is a fairly complex template with upwards of 240 channels total.”

Working with Abbott on the Grammys is Dave Bellamy, RF Coordinator of Soundtronics, who

Wireless—Next Steps

Bob Green, Director, Digital and Technical Wireless Engineering, Audio-Technica

“Audio-Technica’s SpectraPulse system operates in the 6 GHz band, which is outside of UHF-TV broadcast and all ISM bands. It’s pulse-based transmission with ultra-wideband (UWB) modulation and an occupied bandwidth of 500 MHz. We’re allowed to operate between 5 and 10 GHz, giving us 4 GHz of bandwidth. We are currently using only a small fraction of what is available, so there is a lot of room to expand. The pulses are transmitted at extremely low levels—40 nanoWatts—and can be encrypted for security purposes. We have a SpectraPulse system in production for boardroom use providing up to 14 channels of digital audio in a part of the spectrum that is untouched by any of the white space, broadcast or ISM issues.

“Obviously 14 channels are not enough to accommodate everybody’s stage all the time. That’s why we are continuing development of new technologies in the UHF band, and we even just released our System 10 digital wireless system that operates in the ISM band at 2.4 GHz. We have to spread our research and development dollars among all these technologies to be ready for whatever happens in the future.”

Karl Winkler Director of Business Development of Lectrosonics

“When the 700MHz spectrum was sold, Lectrosonics stopped making systems in those bands for the U.S. but added bands at 470 to 532 MHz to maintain the amount of available spectrum for our users. The ability to tune over a wider range of frequencies gives our users a lot of flexibility. Our receivers—the Venue, for example—are modular. The frame is wide-band—it tunes almost across the entire legal TV band—but the modules are only 25 MHz wide. We feel narrow band is an advantage because it rejects out-of-band information, provides greater range and more resistance to dropouts.

“Our Quadra IEM and D4 systems operate in the 902 to 928 MHz ISM (Industrial Scientific and Medical) band. We get terrific audio performance because it’s wideband digital transmission. We also have versions of the Venue and IFB systems for use in the band between 944.100 to 951.900. It’s only 8MHz wide but it’s set aside for licensed broadcasters only, so it’s safe from everything else and it is possible to fit six or more channels for a news crew or TV studio.”

Joe Ciaudelli Director, Advanced Projects & Engineering Services, Sennheiser USA

“Sennheiser’s latest generation of 5000 Series transmitters have a low IM (intermodulation) mode,

making them more spectrally efficient, packing 10 or 12 wireless mics in the same space where traditional systems fit six to eight. This mode reduces the output power and feeds the spared current into the RF amplifier providing increased headroom and lower harmonic distortion. By decreasing distortion we can put the frequencies closer to one another and be a bit less conservative with frequency coordination. The range is reduced, but in theatrical applications you don’t need a lot of range. The challenge in theaters is IM distortions where you typically have a lot of transmitters on the stage, all very close together. This is one of the innovations we have come up with to pack more wireless mics within the same space and is a design criterion for our products going forward.

“With available UHF spectrum shrinking, the re-emergence of VHF equipment becomes more likely. I also envision more products to be introduced outside that core TV band, but they will be very application-specific. We’ll also see an increase in the production of digital wireless. The best digital system will have a balance between improved audio quality, latency, spectral efficiency, compact transmitter size and battery life.”

Erik Vaveris, Category Director for Wireless Products at Shure Inc.

“Our PGX Digital system operates in the unlicensed spectrum in North and South America from 902 to 928 MHz,” explains Vaveris. “PGX Digital is tailored to individuals seeking to operate a small number of channels simultaneously, but require a professional level of audio quality and performance.

“Our newest systems, Axient and ULX-D, both operate in the UHF band and offer a significant leap forward in terms of spectrum efficiency. Axient incorporates several innovations, one of which is interference detection and avoidance. This allows the system to recognize RF interference and automatically change to a clear frequency. Axient also employs what we call Frequency Diversity Mode, whereby the system transmits audio on two separate frequencies simultaneously. If one frequency is experiencing interference, audio from the second frequency is automatically used.

“The ULX-D is a fully digital wireless system that performs at an extremely high level, delivering sound much like a wire. A user can run up to 14 ULX-D systems in one 6MHz TV channel with 48kHz/24-bit audio. Reliability and range of the system is outstanding, and because the transmission is digital, it offers the benefit of encrypted transmission for private events.”

—Steve La Cerra



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Dave Bellamy at the Grammys.

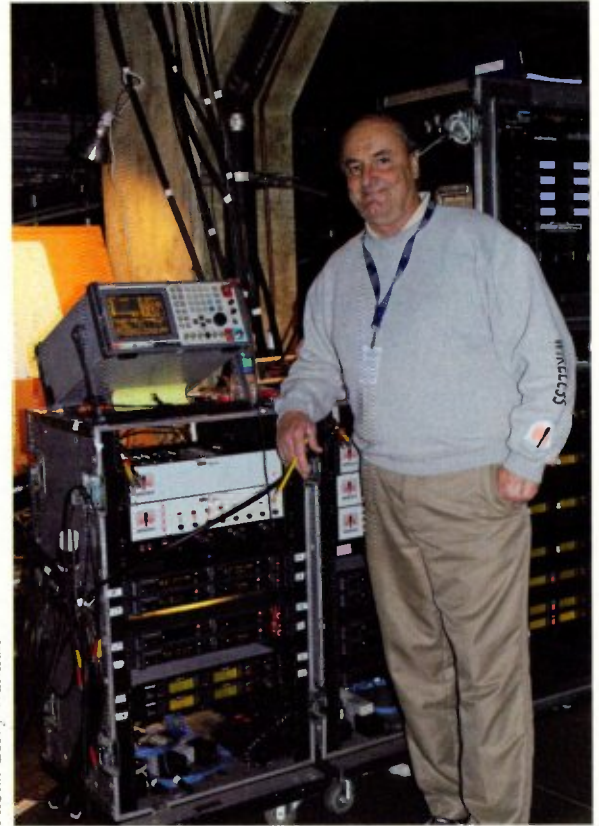


Photo: Corey Walthall

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handles RF Coordination for the show. "I approach RF as a system in which the antenna system forms an environment for the wireless mics, separate from the environment in which the other RF devices live," Bellamy says. "Certain parts of the set design and construction may be RF transparent or may reflect RF, and that affects our system design, how much cable we need, where we can hang the antenna and so forth. We incorporate our antenna (Window, Dominator and Sidewinder) into the set so that you can't see them. In fact, you have probably seen our antenna but they are camouflaged so you wouldn't realize it.

"In addition to wireless mics, ears and instrument systems there are a lot of communications channels: IFB [Interruptive Fold Back], RFPL [RF Private Line]. Our ability to furnish a variety of channels has decreased after we had to vacate the 700MHz band, which represents a third of the spectrum, so we have to plan carefully to accommodate all those aspects while ensuring that the artists are satisfied. We also might use VHF for a few IFB or RFPL channels for our own communication when we're setting up on a show."

Abbott explains that one of the issues at this year's Grammys was that "the LED screens serving as a backdrop to the set were emitting RF, which interfered with our wireless systems. Dave [Bellamy] came up with a way of controlling that."

"The company that brought the LED displays had a fabric that could be draped over most of the rear of the screens," reveals Bellamy, "and it cut down the problem

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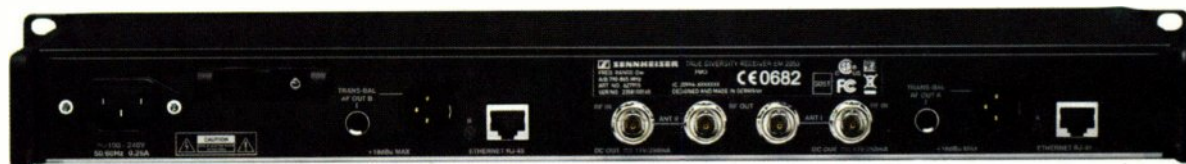
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[by] about 60 percent, which made it just barely manageable. That's one of the reasons we are developing an inventory of different fabrics that can be used to quickly isolate and shield such devices."

HELLO CLEVELAND!

Tony Bandelato, president and owner of Audio Intercom Services in Brooklyn, N.Y., has worked as RF coordinator for the Rock and Roll Hall of Fame Induction Ceremony, Miss Universe, Miss USA, and numerous Presidential Inaugurations. "The Rock and Roll Hall of Fame Induction Ceremony was always filled with a lot of bands," Bandelato begins, "but like any other awards show they want to make it bigger and better each year. That's extremely challenging because we've been squashed into a much smaller range of frequencies, yet still have to accommodate the requirements of each band. We also have to maintain a consistent level of audio quality for the artists, whether wired or wireless. To get that sound without the cable, we have been using the Audio-Technica Artist Elite 5000 Series Wireless with AEW-5400a transmitter in combination with the wired AE5400 mics for the past few years at the Rock and Roll Hall Of Fame Induction Ceremony.

"One of the issues that comes up frequently is the use of Motorola radios carried by band production crews," he adds. "These operate in the high 400s [MHz], so we often have to coordinate around them. The tricky portion is that you don't often know about them ahead of time. People just show up with these things and operate in an area of the spectrum we are now using due to loss of the 700MHz band. The Motorolas transmit at 2 to 5 watts. We're only licensed up to 250 mW—nothing compared to them. And it's not a constant-transmit device. It's a push-to-talk, so when we perform a frequency sweep we won't see them unless they are actually transmitting at the moment.

"Another source of unexpected RF," Bandelato continues, "is local ENG crews. For example, we do the Miss USA and Miss Universe shows, both of which attract local news crews. They'll arrive right around the time the show starts without informing anyone that they are using RF gear, and just turn it

The Lectrosonics Quadra system



on. All of a sudden I am seeing RF that did not exist during setup. The ENG crew might have a wireless system that scans and shows an open frequency, but a lot of the communications devices that we use are set in 'push-to-transmit' mode, so the device transmits only when a user pushes the button to talk. I do that so that I can fit more frequencies into a

coordination without constantly transmitting intermodulation products throughout the day. As a result, another scanning wireless device may not see activity on a channel I am already using for comm purposes. All of a sudden the ENG mic interferes with comm or show RF.

"One of the ways that we have been able to deal

with these issues is by using RF systems that allow finer-tuning steps. For example, we've been using the Audio-Technica Artist Elite 5000 Series with the AEW-5400a transmitter, which allows tuning in 25kHz steps. That gives us more flexibility in the coordination, plus the guys in the truck mixing the show have been very happy with the sound quality."

LIVE WITH A NET

It would appear that the most important concern of RF coordination is ensuring that a featured artists' microphone or instrument isn't stepped on by interference. Yet under the surface lurk far more serious issues.

According to James Stoffo, whose credits include RF Coordination for 14 Super Bowls, Cirque Du Soleil, and the NBA All-Star Weekend, "When I was working Super Bowl entertainment, the pre-game show had their own [wireless] ears and mics, and the halftime show had its own ears and mics. Since vacating the 700MHz band, the NFL has asked us to cut our channel count in half so we have to use the same exact frequencies for the pregame show as for the halftime show. Whoever

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is singing the national anthem is long gone by halftime, so I can assign those channels for use by somebody else. That doesn't really complicate anything. Even if we have an RF hit [i.e., interference] on a 'national anthem mic,' it's going to be really terrible, but you can always go to a track backup.

"When it comes to intercom, things get a little more complicated because now you're talking about life safety issues," Stoffo continues. "Let's say you are putting together a stage for the Super Bowl Halftime show. You have six minutes to do it. The stage is rolling out onto the field and somebody falls in front of a wheel. That stage manager has to be able to immediately key up and stop the movement of the set piece before someone gets hurt. Or, for example, I did the RF install for all of the Cirque Du Soleil shows in Las Vegas. The comm is raised on the priority list quite a bit because these shows all have life safety issues. You cannot share frequencies where safety is concerned. That is one of the reasons I'm concerned about the possibility that the FCC will allow white space devices [aka TVBD's, Television Band Devices -Ed.] to operate in the 512 to 698MHz range. When these devices are allowed into a venue—whether it's a small venue like a Cirque or a large stadium—they will definitely begin to create RF interference on mics and intercoms."

As of now, the vast majority of pro audio RF activity remains in the overused spectrum between 512 and 698 MHz. Complicating matters further is the fact that venues often have in-house RF systems for wireless mics or security personnel as well as wireless video, and more devices may be allowed to enter the range. When faced with the challenge of vacating the 700MHz band, pro audio manufacturers responded. Now we have threats in the 512 to 698 MHz range, and no doubt pro audio manufacturers and wireless coordinators will respond again.

Steve La Cerra is a New York-based live sound and recording engineer.



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ONE WITH EVERYTHING, PLEASE



By Gino Robair

Innovation involves risk. So-called disruptive technologies—products that establish or exploit untapped markets in some way—come from people who are passionate enough not only to suggest a new paradigm, but also to fight for its survival. Apple changed music distribution forever with a major gamble called iTunes. And in the MI sphere, one only has to look at Propellerhead Reason and Ableton Live to see two examples of honest-to-goodness game changers. Both products redefined the concept of the digital audio workstation by providing new tools and workflow that made sense for modern music making.

However, as music creation and consumption continue to evolve, it's clear that sound and picture are becoming increasingly inseparable for the next generation. I see it in my recording students who simultaneously create imagery as they work on their music, whether it's stills panned with the Ken Burns effect or their own footage from whatever inexpensive video device they can find: mobile phone, Flip camera or the built-in lens on a computer. They're not waiting for high-resolution delivery formats to appear or worrying about long-term archival strategies. They have ideas they want to share right now and will use whatever means they have to realize them.

Remarkably, there also seems to be an emerging trend from the major software developers to dumb down their products. So while we are capable of capturing 96kHz audio and high-definition 1080p video on, essentially, consumer devices, software developers act as if they don't believe customers will take advantage of all that technology has to offer. So where are the affordable pro-level tools for the multimedia producers of tomorrow?

BACK TO THE FUTURE

Two years ago, I wrote an open letter to Avid that included a plea for an all-in-one program that offers a truly professional working environment for sound and picture. It seemed like a no-brainer: Avid already has the know-how with Pro Tools and Media Composer. Why not combine them into one killer app that offers fully integrated editing capabilities in both media (including MIDI and music notation—two absolutely essential technologies for musicians scoring to picture)? The program should be completely self-contained and easily support all of the popular media formats. And the user shouldn't have to re-render or convert project assets using secondary apps.

The three A's—Adobe, Apple and Avid—are all capable of doing

this in the relative short term. For this type of product to become a reality, the developer must adopt a long-term view of its customer base rather than think only in terms of quarterly profits.

Furthermore, in order to revolutionize content creation the way that Steve Jobs did with content delivery, the product should be ridiculously affordable—as in \$99. It should be so inexpensive that it's impossible not to own, like all those 99-cent apps on your smart phone. Price it so that every high school and college kid could afford it, as if it were a game for the Xbox, Wii or PS3.

WHO WILL STEAL THE CHEESE?

I can already hear my colleagues in the industry saying that no one can sell such a powerful product so cheap. But we're talking software here, which can be delivered inexpensively over the Web at orders-of-magnitude cheaper than boxes containing a thousand-page manual and several DVDs. There are no up-front costs in terms of printing, duplication, packaging, warehousing or shipping. The biggest cost is development, followed by marketing. Innovation comes from R&D, and that requires investment. Who is willing to invest in a future measured in years right now?

People in our industry will give you a million excuses why such an app cannot be created. They'll say there is already serious feature-bloat in most production software today. "And now you want them to combine several applications into one?" Yes, I do. Just a few years ago, Final Cut Studio pointed toward a united multimedia app by including Soundtrack Pro, among other things, in one package. Sure, it was a lot to deal with, but people figured it out. My students already have facility in multiple high-level programs—pick any combination of Logic, Final Cut, Premiere, Reason/Record, Live, Cubase, Max/MSP, Pro Tools and so on. They've already proven that they'll invest the time it takes to learn a multifaceted product if it satisfies their needs.

The challenge is to design something that meets the requirements of tomorrow's content producers in a holistic fashion, rather than simply repurposing the production paradigms from the past. The winning developer will come up with a user-friendly interface that fully integrates sound and picture, rather than viewing them as separate entities. And it won't force the user to rely on third-party software because the developer is pushing some sort of proprietary-format agenda. It needs to be a bulletproof product that cannot be touched by anything else in terms of ergonomics and efficiency. And it must be low-cost. For real. ■



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Tech // new products



CABLE TECHNIQUES PRODUCTION ESSENTIALS SERIES

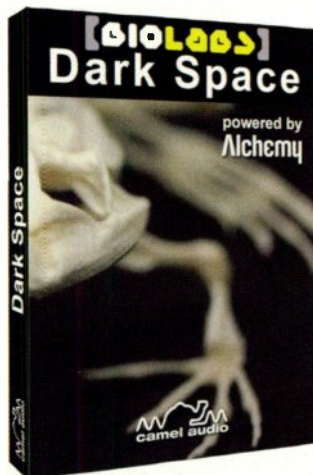
Interconnects for Production Sound

The new Production Essentials Series from Cable Techniques (reddingaudio.com) offers needed interface cabling, solving problems for audio mixers using only the highest quality materials (priced per cable). Extra care is given to small details and the use of quality components, including genuine Canare and Mogami cable, as well as Neutrik connectors. The series includes ultra-tough microphone cables, "Y" cables, coiled boom pole-to-mixer cables, Sound Devices and Lectrosonics connectivity cabling, and timecode cables, to name a few.

GLYPH GPT50 DATA STORAGE UNIT

Advanced Cooling, No Warts

The GPT50 from Glyph (glyphtech.com) is based on a 3.5-inch 7,200 rpm hard drive and features a sturdy metal enclosure with an internal power supply and smart-fan. It uses an industry-standard IEC power cord and pro-quality internal power supply for the most efficient and reliable power source possible. Users can transfer data over the fastest interface available on their computer by using the unit's onboard eSATA, FireWire 800 and USB 2 ports. Other features include a temperature-controlled fan, which makes it quieter overall than previous designs, while still offering excellent cooling. The GPT50 is available with capacities of 500 GB (\$199), 1 TB (\$239), 2 TB (\$299) and 3 TB (\$399), with a 4TB model available soon.



CAMEL AUDIO SOUND LIBRARIES

Three for All

Camel Audio (camelaudio.com) has released three new sound libraries that are "powered by Alchemy," each of which works as a stand-alone software instrument when used with the included free host Alchemy Player. Dream Voices (\$59) is a 150-preset, 1.3GB sound library (with 1,200 variations) comprising a haunting medley of angelic solos, choral washes and intricately woven vocal gymnastics. Himalaya: Vintage (\$59) is another 150-preset sound library (with 1,200 variations), this time tapping into funk, fusion, old school electronica and synth pop; with nearly 600MB of new samples, it offers instruments with an authentic vintage vibe and playability—ARP Solina, Hohner Clavinet, Mellotron, mini Korg-700, Moog Minimoog, Oberheim OB-Xa, and Roland VP-330 Vocoder. Last is Biolabs: Dark Space, a nightmare blend of science fiction and horror. It features an extensive collection of moody and twisted soundscapes, tortured machines, a host of distressed hits, scrapes and evolving impacts, possessed basses, freaky effects and disembodied voices.



ADAM A3X AND A5X

Desktop Power Players

[Ed. Note—These products were left out of our March 2012 feature on Desktop Monitors.] ADAM's (adam-audio.com) smallest and most affordable monitor, the A3X (\$329 each) is ideal for desktop and near-field monitoring situations (9.9Hx5.9Wx7.2D inches). The A3X includes an X-ART tweeter, a 4.5-inch mid/low frequency driver with a very light but stiff carbon fiber diaphragm for absolute transparency, and two 25-watt amplifiers to power each driver. The A3X also features Stereolink, a pair of additional RCA connectors that allow the user to connect both speakers with a single cable so that the volume for both speakers can be controlled from the Gain control of either. If you're looking for something larger, the A5 has been reborn as the A5X (\$499 each), with the X-ART tweeter, a 5.5-inch mid/woofer that reproduces frequencies below 2.5 kHz, and twice the power (25W tweeter and 50W). The speakers feature 110dB max peak SPL per pair. XLR and RCA connectors are provided, along with a 5-year warranty.

LINDELL AUDIO 500 SERIES MODULES

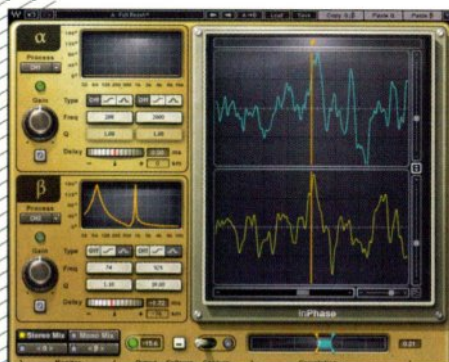
Preamp, Compressor and EQ

Sweden's Lindell Audio (lindellaudio.se) has jumped into the 500 Series game, releasing three new modules (\$TBA) at the Musikmesse show in Frankfurt. The PEX 500 is a single-channel, transformer-coupled Passive Pultec Equalizer featuring an all-discrete design based on the great 990 amplifier. The three stages each feature three frequency choices offering 15dB of gain and a true hardware bypass. The 6X 500 is a single-channel transformer-coupled microphone preamplifier and passive 2-band Pultec equalizer with 12dB boost. Other features include switchable 48-volt phantom power, polarity reverse and a five-stage LED meter. The 7X 500 is a single-channel compressor/limiter offering an FET (field effect transistor) design that incorporates some new and exclusive features such as a High-pass Sidechain Filter and Mix Knob for parallel compression.



WAVES INPHASE PLUG-IN

Fix Your Shift



Designed to restore phase coherence, Waves (waves.com) InPhase plug-in (TDM \$149, Native \$99) features high-resolution dual-waveform displays; phase-shift filters with adjustable frequency and Q; and an intuitive correlation meter that shows you just how much your tracks are in—or out of—phase. You can move your waveforms manually or by using the delay control, and even align them in rela-

tion to a sidechain input. InPhase includes mono, stereo and dedicated live components, plus InPhase LT, a simplified version that gives you easy access to creative phase manipulation.



LE MASQUE DELAY PLUG-IN

The Evolution of Time

Available in 64- and 32-bit versions, Le Masque: Delay (xiils-lab.com; 59 Euros or approximately \$78 U.S.) is a Mac/PC-compatible (AU, VST, RTAS) polymorphic timeline-driven delay effects plug-in; it can behave like a regular digital delay or allow users to perform hitherto unheard of delay-based effects. The plug-in lets users accurately specify the part(s) of the dry signal—based on their time position and/or frequency content—that will be processed by the delay itself (available from within the Grid view); its associated LFO, envelope and filter components (via the LFO & Envelope view); and various modulators (within the Time & Mod view), which are masked zones within the grid area that are processed by the delay while any audio data outside those masked zones remains untouched.

ROYER LABS SLING-SHOCK

Isolating Mic Mount

The new Sling-Shock from Royer (royerlabs.com; \$295) provides excellent isolation between a microphone and mic stand, and accomplishes this with a revolutionary design that is essentially maintenance-free. The mount uses a two-part mechanism comprising non-resonant nylon cord and damped tensioning springs. It is designed to work indefinitely with no loss of performance or function, requiring nothing more than minimal adjustment. Featuring tension balance compensation that is user-adjustable, the Sling-Shock will improve the performance of any microphone in any environment where vibration is a concern.



ACOUSTICAL SOLUTIONS SUSTAINABLE SERIES

Easy Being Green



The Sustainable Series line of acoustical products from Acoustical Solutions (acousticalsolutions.com) includes Wall Panels (\$48), Ceiling Tiles (\$21), Cloud Mount Panels (\$97.50), and Baffles (\$35). They all use Ecosse Fiberglass inserts, which are made with post-consumer

bottle glass and are 100-percent recyclable, and covered in a Sustainable Eco-Fabric, the industry's first "no-compromise" eco-friendly wall-covering platform. Sustainable Series products do not skimp on aesthetics, functionality or price. They are just as affordable as traditional acoustical treatment, and the fabric is available in a true, clean white, as well as many other patterns.



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A Designs EM-EQ2

Presenting the rack-mount version of the acclaimed EM-PEQ 500 Series equalizer, with a sonic nod to the famed Pultec EQP-1A.



Retro Instruments Doublewide Tube Compressor

The Retro Doublewide packs all of the rich tube tone, versatile dynamic control and superior build-quality you've come to expect from Retro into a solid two-slot 500 Series module.



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Inward Connections The Brute Limiter

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INWARD CONNECTIONS



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Solid State Logic



Lynx Hilo Two-Channel Converter

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Acme Opticom XLA-3 Optical Audio Limiter

"This is a breathtakingly great-sounding limiter. The warm characterful sounds always seem to engulf you in a warm fuzzy feeling and raise a smile." - George Shilling, Resolution



Focal Twin6 Be Three-Way Active Monitors

"These are by far the most accurate and transparent monitors I've ever heard or tried!" - Dan Goldman, Future Music



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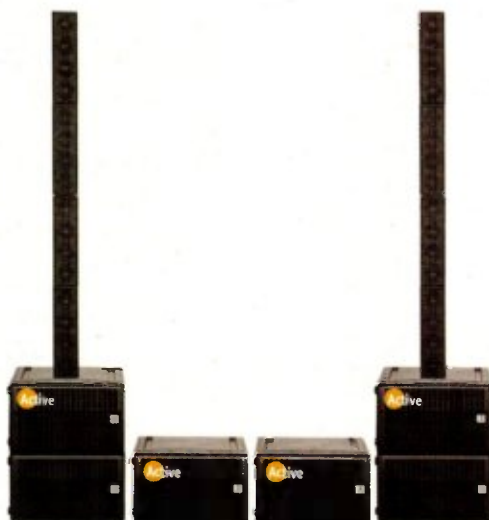
Quality Live Mic

Building on the success of the DPA reference standard cardioid 4011 microphone, the company has created the d:facto, a pre-polarized condenser, handheld stage microphone (dpamicrophones.com; \$TBA). Promising superb definition, the d:facto features excellent separation as well as exceptional isolation from handling noise, a robust three-stage pop protector and high SPL handling. Other features include a switchable -10dB attenuator, frequency range of 20 to 20k Hz, and supercardioid pattern. It is available as a microphone head with a wired handle but can also be used with the Wiscom wireless microphone system.

JBL VTX LINE ARRAY SERIES

Fixed or On the Go

Designed for both portable and fixed-venue applications, JBL's (jblpro.com) VTX Series includes the VTX V25, a full-size, three-way, high-directivity line array element. It features two 2,000-watt, 15-inch Differential Drive woofers mounted in die-cast aluminium baffles, with four eight-inch Differential Drive mid-range transducers and three D2 Dual-Diaphragm Dual-Voice-Coil Compression Drivers mounted on a third-generation waveguide and patented RBI Radiation Boundary Integrator assembly. JBL's patented Radiation Boundary Integrator combines the high frequency and midrange sections of the V25 so that the transition across each band is uninterrupted. A patent-pending, tuned resonant absorption chamber (TRAC) is integrated into the waveguide itself, effectively eliminating throat-related cancellations due to back pressure from the midrange section. VTX's RBI waveguide implementation is also aimed at providing improved horizontal coverage.



HK AUDIO ELEMENTS MODULAR ARRAYS

Lightweight, Portable, Full-Range

For the first time in the States, HK Audio (hkaudio.com/us) is now offering its Elements sound reinforcement packages, which enable users to put together a system suitable for every situation using six components that are easy to combine. The E435 (\$549) houses four 3.5-inch broadband speakers, the EA600 (\$839) has 600W speakers, offering enough power for four midrange/high units, or one passive sub and two additional midrange/high units. The E45 (\$249) is stand fitted and has extendable feet, serving as a solid base for midrange/high units, amp modules or the EP1 mounting pole (\$139). Bringing up the bottom is the E110 SubA 10-inch subwoofer (\$1,499) with digital Class-D power amp providing 600 watts for itself or the E110 passive subwoofer (\$999).

HOSA PRO SPEAKER CABLES

Quality Interconnects

Hosa's (hosatech.com) new Pro Speaker Cables feature 14 AWG Oxygen-Free Copper (OFC) conductors for enhanced signal clarity and a black PVC jacket for durability, flexibility and low visibility on stage. With both loudspeaker and 1/4-inch TS connectors available in the product line, users are assured of a superior product with the right connectivity options. Hosa Pro Speaker Cables are available in 3-, 5-, 10-, 25-, 50-, and 100-foot lengths with configurations including Loudspeaker to Loudspeaker, Loudspeaker to 1/4-inch TS, and 1/4-inch TS to 1/4-inch TS. Pricing ranges from MSRP \$14.70 to \$167.10.





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Tech // reviews

EASTWEST, UNIVERSAL AUDIO AND VIENNA SYMPHONIC LIBRARY

Processing With Plugs

Adding believable depth and warmth are two of the toughest things to do in a DAW, and the first two plugs reviewed here both do it well. At the same time, having a well-rounded set of processing tools at your disposal can be costly. The third product reviewed here, the Vienna Suite Library of plug-ins, puts a bevy of processors at your fingertips for a fair price.

EASTWEST QUANTUM LEAP SPACES REVERB

Quantum Leap Spaces from EastWest is a 24-bit, true-stereo convolution reverb offering the ability to create stereo and surround effects with low CPU usage. QL Spaces can be used as a plug-in or freestanding. No matter how you use it, in a reverb of this kind, your sound is only as good as the gear used to capture your impulses, and QL Spaces used the best: mics, preamps and processors from Neumann, Neve, Telefunken, TG, Manley, Sennheiser and Fairchild, along with the Sony DRE S777 sampling reverb and Meitner A-D converters. Multiple ATC speakers were strategically placed in a wide variety of venues to get the best possible representation of room interaction in the end product.

The simple-looking interface hides the fact that behind the curtain there is a lot going on. For instance, most impulses are in an 8-channel format allowing the user to create very realistic stereo and surround effects. Once you get past the nomenclature such as m-s (mono in/stereo out), s-s (stereo in/out), ts (true stereo), grm (gated room) and fr/rr (front/rear mics), it's easy to step through the various rooms, halls, cathedrals, tunnels, and even a forest, to get to the effect you desire. I compared QL spaces to a number of products, including Steinberg's REVerence convolution reverb, VSL's Hybrid and Convolution reverb, UAD emulations of an EMT 140, and EMT 250, and legacy hardware reverbs like the Eventide SP2016 and AKG's ADR 68k.

From the main interface, a simple four-knob setup with sepa-

rate controls for input gain, predelay, and wet and dry signals, you click on the Preset button to take you to the menu of reverb effects. These are broken down into a four-column browser with choices on the left including Instrument Specific Tour, Churches, Concert Halls, Offbeat Locations, Plate Digital and Rooms/Stages. Clicking on any one of these opens the second column with more choices, and the search goes on until you get to the effect with a time quoted at the end (e.g., Long Tunnel ST FR 2.2s.). Clicking on the Load button brings the chosen effect into the interface and you're ready to go.

I used QL Spaces on 22 songs across two mixing projects, one being done on a MacBook Pro laptop (10.6.7) in Pro Tools 9, and



PRODUCT SUMMARY

COMPANY: EastWest
PRODUCT: Quantum Leap Spaces
WEBSITE: soundsonline.com
PRICE: \$299
PROS: Great-sounding reverb, true stereo and surround effects.
CONS: Interface can be clunky. Stability problems arose on a 64-bit system using Nuendo.

the other on a Rain Ion Studio PC (Windows 7) in Nuendo 5.5. For starters, the sound is fantastic. I always save my best reverb, an Eventide SP2016 hardware unit, for my lead vocal and I've never found a plug-in reverb to match that quality. While the QL isn't quite up to the SP2016's lush reverb-scape, it comes the closest. The range of effects and quality is excellent. Both mixing projects were heavy with background vocals and choirs, and I found myself going to QL Spaces over and over to make my BGVs pop. It has that certain something that lets you tuck the effect back into the mix, while still doing its job—making the part you use it on stand out from the pack. I also used it on percussion, B3 organ, snare drum and acoustic guitars, and it was a winner every time.

However, my Pro Tools experience was much different from Nuendo. In Pro Tools 9, the effect always played nicely, sounded great and was a breeze to use. In Nuendo, the effect worked great on the first few mixes, but then I had recurring problems with digital noise, inability to load presets, crashing and more. After much troubleshooting, de/re-installs and even with the help of the pros from Rain Computer, I had to bail on QL halfway through the project. Part of the problem on the PC side may have been the disconnect between 64-bit and 32-bit versions of the plug-in. My computer is 64-bit, but I use 32-bit Nuendo 5.5 because of all the bridging problems to get all my other plugs up to 64-bit. In this case, QL would only load the 64-bit version on my computer, which was used in both 64-bit and 32-bit Nuendo. I even tried jumping to the 64-bit version of Nuendo to see if the problem went away but had the same experience. I'm not sure where the blame lies here as it's a rat's nest of possibilities, but when QL worked, it was fantastic.

As much as I liked the sounds of QL Spaces, I give the interface poor marks. For instance, the knobs and settings on the main screen (wet/dry, pre-delay, filters, etc.) reset themselves every time you load a new reverb. This makes searching for an impulse with a bit less or more RT a pain. You have to return each time and reset your entire mix, taking the fun factor to zero and slowing workflow. The filter section could



PRODUCT SUMMARY

COMPANY: Universal Audio
PRODUCT: Ampex ATR-102 Mastering Tape Recorder Plug-in
WEBSITE: uaudio.com
PRICE: \$299.49 (UAD-2 platform hardware not included)
PROS: Versatile interface, great sounding tape effects
CONS: Noise and Wow & Flutter are questionable features, but can be switched off.

use some more capability, as well, as it is helpful to be able to fine-tune what's making it into the QL engine to be effected. The filter is stupid-basic. Also, they went a bit nuts with the lettered abbreviations, which are clunky and arbitrary. There are so many that an effect name can end up like this: Hamburg Lake Forest A TS FR 2.2s. Once you add GRM, WLA, A, B, C and D, plus up to 12 numbered versions of effects, your eyes begin to glaze over.

That said, and despite my Nuendo problems, this reverb sounds fantastic. To my ears, it's the closest I can get to the best legacy hardware reverbs on the market, and that's a rare thing in a plug-in.

AMPEX ATR-102 MASTERING TAPE RECORDER PLUG-IN

I love tape. In my gig as an audio instructor, I

cut to Pro Tools through a 2-inch Studer 827 using CLASP, and I love how I can sculpt my sound with oxide. So when Universal Audio came out with the Ampex ATR-102 plug-in for the UAD-2 platform last year, I was eager to hear what it could do.

The Ampex ATR-102 was released in 1976 and is still a highly valued piece of gear in any analog studio arsenal. The plug-in models the ATR-102's signal path, including transformers, amplifiers, repro, sync and input paths. And it is versatile, with a capital V. Not only can you audition multiple tape formulas, head configurations and calibration levels, but also there is switchable and adjustable Wow, Flutter, Hiss, Hum, Crosstalk and Tape Delay (l/r). Adding the ¼-inch,

½-inch or 1-inch head selection, multiple tape speeds (3.75, 7.5, 15 and 30 ips), adjustable bias and switchable emphasis EQs (NAB, CCIR, AES), and a tape delay section gives you a recipe for some audio excellence.

I used the plug-in on two platforms, Mac and PC, running Pro Tools 9 (Mac) and Nuendo 5.5 (PC). I have to give props here to the UAD-2 platform, as it excels in making the user experience seamless. I used a UAD-2 Satellite on my Pro Tools rig and a UAD-2 Quad PCIe card and a UAD-1 PCIe card in my Rain Ion Studio PC, and both operated without a hitch. I found the results to be subtle, or extreme, as I tweaked the settings, which is as it should be; you can order the sounds a la carte.

The ATR-102 plug-in's interface is well-conceived, looking like the real thing right down to the spinning reels when in play, and even wear and tear from razor blades or other miscellaneous dings and scrapes. Controls here include adjustments for tape speed, repro/record levels per channel, head type, tape type (250, 456, 900, ATR), and calibration levels (+3, +6, +7.5, +9).

The cool factor jumps to 10 once you hit the Open button under the Ampex logo. This reveals a whole new world where you can get into the fine-tuning of the plug-in. Controls here include EQ and bias tweaks, on/off for Auto Cal, Noise, Wow & Flutter, Transformer, Crosstalk and Tape Delay. It's great fun to deconstruct the presets by leaving the machine open and paging through the multiple presets written by pro engineers



Suite Plug-Ins are a bundle of 10 processors for mixing and mastering, supporting 64-bit and 32-bit host platforms in VST/VST3/AU/RTAS (OS X, Windows 7/Vista/XP) formats. I reviewed the plug-ins both on a MacBook Pro laptop (10.6.7) running Pro Tools 9 and Nuendo 5.5, and on a Rain Ion Studio PC with Windows 7 with 12GB of RAM running Nuendo 5.5.

The Vienna Suite includes two reverbs, one being the new Hybrid Reverb that gives you the natural convolution impulses for starters but adds the ability to tweak the parameters you're used to having in an algorithm-based verb. There is also an Analyzer, Exciter, Compressor,

Limiter and multiband Limiter, EQ and more tweakable Master EQ, and Powerpan.

The simplest, yet one of the cooler tools, in the suite is the frequency analyzer. I found myself putting it up on mix buses and groups just to see what was going on. You can set the bottom and top min/max dB of the display, so you can bring audio into the viewable range no matter what the level. You also have Hold and Attack and Release functions that let you tweak how the interface evolves over time. One of the best functions is the note finder, which is a great way to find pitch in a signal. The note name floats above the frequency analysis as the wave evolves. Mouse-clicking anywhere on the display also brings up the Hz and corresponding note value. This helps when you're trying to identify woofy tones in an instrument or vocal, then taking the data over to an EQ for reduction.

The Powerpan picks up where your DAW's panner leaves off. It has a great "bubble" display that shows you where the energy of your signal lies in the stereo picture. Features include the ability to swap L/R, alter the pre- and post-balance, change the center and width, flip the polarity of your channels and even choose your pan law. Two things I'd like to see here are a one-button reset for getting back to zero and maybe the addition of some kind of dynamic control, which would turn this into a more powerful pan-beast. The Exciter is simple and desirable, to some extent. I find I can get better results and have more

Continued on p. 79

Buddy Miller, Chuck Ainlay, Mike Poole, Richard Dodd and Stephen Smith, and seeing how they arranged all the settings. From here, you can pick your own favorites and create your own presets.

I believe that calling this a Mastering Tape Recorder Plug-in, as they do, does the product an injustice—it's much more than that. I went nuts with it and got great results. One of the projects I mixed had some strident acoustic guitar tracks that I was able to warm up with one or sometimes two instances of the plug-in—one before compression and one after. I also found myself putting it across selected bus outputs (such as my percussion bus) in Nuendo before I fed them to my Dangerous 2-Bus and out to my mix recorder. This way I could produce Michael Brauer-like results by mixing into a compressor on my bus feeds, then bringing one last bit of tape goodness to the stereo feed. In the box, I used it on my stereo bus in Pro Tools before I bounced, but also on individual tracks, sometimes with the UAD-2 Fatso Jr. plug-in if I needed even more warmth; the combination is excellent. No matter how I used it, I always turned the Noise and Wow & Flutter off; for me, this was always the worst part of the original machine anyway, and I'm glad I can get rid of it in the model.

Personally, I like a plug-in that lets you get into the weeds, and the ATR-102, to its credit, can make your tracks sound worse if you set it wrong. However, the presets sound great, and if you're not familiar with the ATR platform, you can start here and grow. Bring up a preset, tweak it, like it, save

PRODUCT SUMMARY

COMPANY: Vienna Symphonic Library

PRODUCT: Vienna Suite Plug-Ins

WEBSITE: vsl.co.at

PRICE: \$570

PROS: A solid toolkit of plug-ins, easy to use interfaces.

CONS: Some features could be extended to other plug-ins in collection. Occasional lock-ups in Nuendo.

it and move on to the next application. You can play with distortion by overdriving the tape, or add other flavor by changing the bias, tape speed, tape type or headstack—or not. Use it once, twice or even three times on a channel if you need it; see what it does and doesn't do well. The point here is it can be a super-subtle clean machine or a lo-fi tape trash box, and that's what makes it great. The Ampex ATR-102 plug-in faithfully reproduces what the legacy machine had to offer and brings it into the 21st century. It makes everything adjustable, switchable and mix-and-matchable. You've got to love that kind of versatility.

VSL VIENNA SUITE PLUG-INS

Vienna Symphonic Library is not the first name that comes to mind when you think of reverb and processing plug-ins, but the company has entered the game with a strong lineup. Vienna

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JZ MICROPHONES VINTAGE 11 CONDENSER MIC

Low-Cost Cardioid-Only Mic Features Solid Build, Great Sound

JZ Microphones' new Vintage 11 condenser microphone is an all-new design but shares its sonic "pedigree" with the company's more expensive Black Hole models. Similarly sized and shaped as the other mics in the Vintage Series, the V11 employs a more modest shock-mount design than the V47, V67 and V12 models. But at \$699 MSRP, it's also the least expensive in this line of cardioid-only, large-diaphragm condenser mics.

The "11" stands for the year 2011, marking exactly two years since JZ introduced the cardioid-only Vintage line in homage to the classic German and Austrian-made condenser microphones of yesteryear. JZ's Vintage Series mics are designed to emulate the sonic qualities of those classics while introducing new manufacturing technologies, various improvements and affordable pricing.

MODERN AND HAND-MADE

The V11 is assembled only in JZ's Latvia factory by hand and uses a body made from brass and aluminum. It has a rugged metal mesh screen but no internal wind/pop filter. Access to its interior is by way of two small, recessed screws on either side of a gold-pinned XLR output connector on the bottom of the mic. There are no pad or roll-off switches on this mic to become problematic with age or heavy use, as is typical with older condenser mics.

The capsule electronics use an FET-based amplifier and are all Class-A with an electronically balanced output (no transformer) circuit similar to the Black Hole line. The V11 has an output impedance of 50 ohms with a suggested load impedance of greater than 500 ohms. Sensitivity is 22 mV/Pa measured at 1 kHz into a 1 k-ohm load.

The construction and design of the internal electronics package offers a modern, practical touch. This entirely handmade circuit is sealed

within a module made of a high-impact composite material. So if ever required, it is easily replaceable—a good "plug 'n' play" idea for field repair, it seems. But JZ recommends that a JZ-certified restorer replace it at their factory in Latvia.

The V11 uses a large, 27mm diameter dual-membrane capsule in a holder made of carbon fiber. As with all JZ capsules, it was designed by Juris Zarins. It's externally charged (not an electret) and is manufactured using JZ's Golden Drop sputtering technique.

Specifications: frequency range is 20 Hz to 20 kHz; equivalent noise level (DIN/IEC A-weighted) 6.5 dBA; max SPL of 134 dB for 0.5% THD @ 1 kHz; and a dynamic range specified at 128 dB.

IN THE STUDIO

For me, setting up the V11 was slightly restrictive because there is no swivel ball-joint mount system as found on the other Vintage mics. The mounting bracket has two thumbscrews with knurled

heads that have self-retaining rubber bushings that act like mini shock absorbers when mated to the threaded holes in the mic's base.

This system does prevent extreme rumbling noises from coming up from the floor and affecting the sound, but lightly tapping on the mic stand did produce audible bumps in the audio. JZ has a nascent accessory line (an excellent

pop filter, mic clips, etc.), and perhaps they have a version of the Black Hole's com-



The JZ Microphones Vintage 11 features a brass and aluminum body and rugged metal mesh screen.

bined shock-mount and pop filter system coming for the Vintage Series.

My first use for the Vintage 11 was for voice-over and Foley recordings for a video project. For the voice-over session, I set the mic up on a straight stand (no boom). Once adjusted, my narrator stood in front, about six inches away, and sounded excellent with plenty of warmth and presence. This is not an overly bright condenser mic that might exacerbate sibilants. In all my uses of the V11, de-essing was never needed.

I used the mic preamp in the studio's SSL AWS 900 console and noticed the Vintage 11 provided more than enough output level for this application. I used mic gain settings in the range of 25 to 35 dB.

The V11's very low noise floor was essential when I recorded a few Foley effects. I was helping out on a battle scene in a short movie trailer clip; we recorded walking, clothing noises and general background sounds. The mic worked flawlessly in capturing these effects, although the sound was slightly dark, but nothing an

equalizer wouldn't fix. However, its lift in the low frequencies did sound great for body hits and falls where the extra "oomph" added dramatic impact.

But for every new setup, I had to carry a screwdriver in my back pocket to readjust the mic's positioning, since it has only a single brass screw to tighten and lock it into position. I think this screw should be replaced with a conventional, easy-to-turn wing nut, as is common on other mics.

After using many different mic preamps, I found the V11 always required about 5 to 10dB less preamp gain than my usual choices of tube and solid-state condenser mics. In general, for a given distance from the source, I noticed the V11 had more proximity effect as compared to my tube reference microphone, and this ability was useful for my next test—a distant mono drum room recording.

Unless I'm lucky to be working in a great-sounding room, my experience with actually using the sound picked up by distant drum room mics is sketchy at best. The V11 promises

TRY THIS

I positioned the V11 in combination with a RØDE NT4 X-Y stereo mic positioned about 3.5 feet over a drum kit. I angled the V11 toward the drummer's face and not directly down at the cymbals and kit. I placed the RØDE at exactly the same height and as close to the JZ mic's location as possible.

I liked the ability to blend the sounds coming from the stereo width and brightness of the RØDE with the warmth of the V11 panned to the center. Even with only about 20-percent of the V11's level added to the overhead mic mix, the overhead drum sound thickened with a meaty increase in the lows.

To correct any phasing issues that occur when using multiple microphones on a common sound source, I always test and use (if required) Sound Radix's Auto-Align plug-in when I mix. Mainly because all mics were placed so close to one another, there were no severe cancellation problems—or if there were, they were acceptable as a "vibey" overhead drum mix. The best test is to combine all sources in L+R mono and check for any cancellation. There was none, so maybe I got lucky.



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to change my luck. I found that just about anywhere I positioned it in the drum room would produce (to a greater or lesser degree) usable results. So, now I've found a good microphone for this application—now all I need is to work in better-sounding rooms!

In my next tests I used my Ingram MPA685 variable impedance preamp (reviewed in Mix's September 2011 issue) to test the effect of changing the load impedance presented to the V11. As expected, the results were subtle, but at 600 ohms, the lowest impedance available, the V11 produced the lowest output and a slightly mellower sound. Using the Ingram's higher 1.5k or 2.5k-ohm impedance positions resulted in more level and a brighter sound.

Staying with the Ingram set to its highest impedance at 2.5k-ohms, I recorded my 5-foot Schiller baby grand piano. I put the mic inches away from the hammers with the capsule aimed at middle C—rock 'n' roll style.

With small-diaphragm condensers, this setup usually produces a bright, uneven sound by not fully covering the entire range of the in-

PRODUCT SUMMARY

COMPANY: JZ Microphones

PRODUCT: Vintage II Cardioid Only

WEBSITE: jzmic.com

PRICE: \$699 MSRP

PROS: Well-made, rugged, warm, dark sound.

CONS: Could use a shock-mount; the included mount requires a screwdriver for making adjustments.

strument. Even with my single V11, I got a very natural and warm sound with no equalization required—two of them would capture the whole instrument.

There is no attenuator pad on the V11, but I had no problems recording drums at all. However, as I find with most modern condenser microphones, your preamp should have an attenuator to handle its higher output level.

I set up both a Shure SM57 (as my reference) and the V11 next to each other at the rim

of a 6-inch vintage Pearl snare drum—about 4 inches from where the stick hits the center of head. In this test, I used a new Avid Mbox Mini and Pro Tools 10 on an iMac (4-core) running OS 10.7.2.

Surprisingly, the V11 was fatter and thicker but just as bright as the SM57. The V11's wider profile may not physically fit into drum setups as the SM57 will, but I like the option to use a more sensitive condenser mic close in on snare drums and know it'll sound great—not overly bright and with no distortion.

BEST ALL-AROUND CONTENDER

My goal was to use the V11 in many applications and test whether I could recommend it as a general-purpose, all-around condenser microphone that sounds good and won't break the bank. I think between the V11's rugged construction, fat sound and low price, it achieves my goal for now—unless JZ breaks the build/price/sound barrier again. ■

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



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Continued from p. 74

capability with parallel EQ, but that's not to say you wouldn't like it.

The two EQs could have easily been one product. When using the Master Equalizer, I missed the twin meters of the little brother EQ. Both have five bands with added low- and high-cut filters, and both have the analyzer function from the Analyzer plug-in (great feature!). The Master Equalizer offers three types of EQ on the five bands, and two types of shelving EQ. So there is a bit more capability there, but I'm not sure I'd use it. I do like the size of the less capable EQ, so I used that more as it was easier to have onscreen. Both sounded great and were musical. I wish they would have brought the note-finder from the Analyzer into the EQs, as this would knock it out of the park. The Waves H-EQ, which directly competes with this EQ on the feature level, has a note finder and it was wonderful to use.

The compressors and limiters were both well-executed, with slick moving wave displays that show you input, output and attenuation at the same time. The VSL Compressor has the usual

cast of characters like ratio, threshold, attack, release, output control and auto-makeup gain. There is also an Opto or Fat setting that adds a bit of color to choose from. They packed a lot into a small interface on this one, and it was a pleasure to use, as was the VSL Limiter. It sports threshold, ceiling and release controls, along with the same moving waveform display as the compressor. It would be nice to be able to detach the wave display from the output ceiling control. If it were the last item in my chain and I had something low in my mix, the wave display correspondingly shrunk, making it useless in some cases.

The new Hybrid Reverb was my favorite of the two, as they corrected the "sins" of the convolution unit, namely the limited presets and a clunky interface. For instance, the Convolution Reverb's lowpass function lets you lower the level of a set frequency on an x/y grid, but the lowpass function acts as if you're raising the low frequencies? I get where they're going, but it's not a great way to get there. There's a useful five-band EQ, panner and de-correlation control, which they could have called diffusion. The VSL forum explains:

"Decorrelation makes a stereo-signal 'less mono,' more diffuse, broad and thus more enveloping."

The Hybrid Reverb's layout is much more user-friendly; presets are displayed on the left with common go-to controls like wet, dry, early, tail and output volumes in dB spread across the interface. There are also Early and Tail width controls, and there's a handy latency pulldown for moving latency up or down from the default of 512. Unfortunately, when you call up a new reverb, the dry and wet controls reset themselves, making surfing a drag. Both reverbs sound very good but don't have the extra "something" that takes them above others in their class. You can get what you want for the most part, but you have to wrestle with the interface.

Although I had no issues with operation at 32-bits or 64-bits (no bridging needed here), I did have an occasional problem in Nuendo when bringing up VSL plug-ins while playing audio. It wouldn't freeze the DAW, but I could get no audio output and would need to reboot. That said, this collection is worth the price. You can check it out for free by downloading the demo to your eLicenser. ■

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AUDIO-TECHNICA ATH-M50, SHURE SRH940, BEATS BY DRE

Closed-Ear Headphones for Pro Use

One of the most important tools for mixing and tracking is a reliable pair of headphones. Going from room to room with different monitors, consoles, room dimensions and acoustic considerations can make it hard to fix your auditory bearings. Recording in the field while capturing sound for picture, mixing concerts and other out-of-the-studio gigs can also create chaos. Sometimes, the one touchstone that allows an engineer to hear the truth through all of those variables is a familiar pair of cans. These three closed-ear designs all provide separation between the listener and the environment, allowing for a more precise type of situationally independent decision making.

AUDIO-TECHNICA ATH-M50

At first glance, the ATH-M50s give nothing away. They have an unassuming, no-nonsense kind of look to them that says, "Maybe I've been here in your studio all along and you just haven't noticed me?" Once they are in your hands, though, they immediately impress. The weight is perfect: not so light that you question the ability of the drivers, and not too heavy. The acrobatic earpieces pivot and collapse up into the arch, but when in place, they also rotate 180 degrees, comfortably accommodating even the oddest-shaped skulls. Soft cushioning at the top of the arch is paired with plush cups that surround the ear with total coverage, providing decent isolation and superior comfort. Between the light weight and the cushy padding, I could wear these for hours, forgetting I even have them on. It's worth noting that the earpieces extend from the arch with a typical flat, metal ribbon clicking along an interior plastic track. I'm quite comfortable with them at the tightest position, and they extend quite a bit beyond that for large heads. Someone with a smaller head might find them a bit saggy, though.

I listened to a wide variety of music and found



Audio-Technica
ATH-M50



Shure
SRH940

the ATH-M50s quite suitable to any genre. When listening to dance music, I was impressed by the punchy bass. I wouldn't describe it as quite so tight and snappy as bass sounded via the Beats (see below), but I would say that just as much bass was represented, and without perceived distortion. It was round and full and left me with no complaints. Likewise, synths and snares in the upper midrange emerged on top of the bass with clear detail and nice imaging—again, without distorting as they competed with the lows. I could listen to hip-hop or electronic music for long durations without feeling ear fatigue at all.

Listening to rock or metal with loud, guitar-heavy mid-range, I was really impressed. Trying to keep the bass coming while reproducing deliberately distorted midrange is too much to ask of a lot of headphones without the entire track turning to mud. Here, punchy bass and even low-mid sounds, like toms, held up to the onslaught. Snare drum punched on through as well. Mixes featuring baritone vocal definitely lost some intelligibility, but a soprano vocal managed to stay clear.

I didn't notice a great deal of high-highs in rock nor in electronically driven music, so I checked out some different jazz and classical recordings to try to hear more air and room, but I couldn't find it. In no case did I really feel like

TRY THIS

Naturally, you're not going to buy headphones without listening to them yourself, right? To make the best decision, build a headphone-testing portable rig with reliable playback in a non-lossy format. One example would be a laptop with Apple Lossless encoded files in iTunes and a great portable headphone playback amp like the Sound Devices USB Pre2. All this can fit into a backpack and give you confidence that you're hearing the best possible source from which to make your buying decision.

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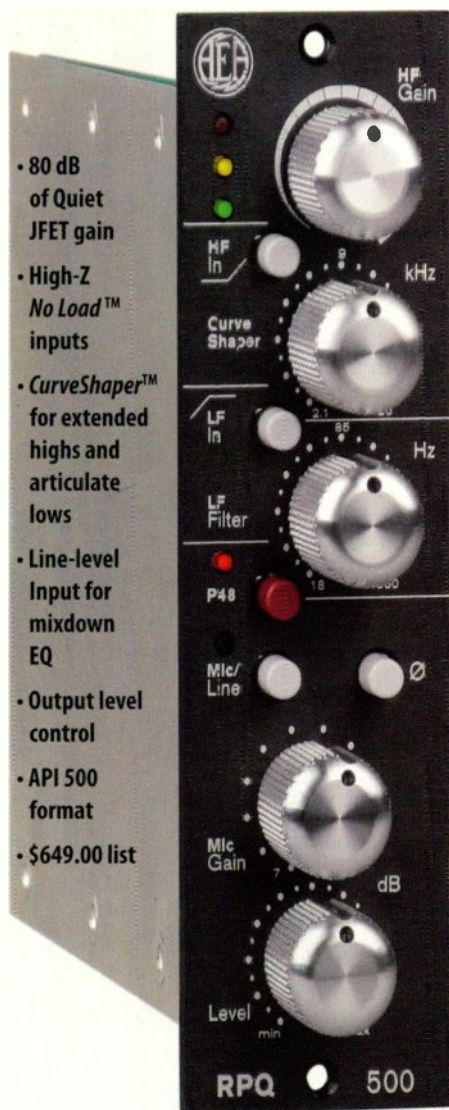


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I heard the highest top end of brushed snares, room reverb or the upper harmonics of reed instruments. When listening to complicated brass arrangements, the midrange muddled up a bit, losing clarity and separation. It felt like this could have resulted from a combination of too much sound existing near the resonant frequency of the drivers, and that lack of highs necessary to localize the sound.

I don't necessarily like the attached cord, with the trend being to offer a modular one. It's one of those things that always seems to wear out or break. The ear pads don't seem to be replaceable, either, effectively giving this model an expiration date. The materials and build seem to be of decent quality, but they're far from unbreakable. The headphones include a screw-on ¼-inch adapter and a carrying bag that works when the phones are collapsed. Different models exist in white (ATH-M50WH), silver (ATH-M50s/LE), straight-cable (ATH-M50s) and coiled-cable (ATH-M50)—all featuring the same basic design.

Sound quality was really solid and perfectly loud. A clear, detailed image from lows throughout the midrange made for a pleasant listening experience. Nothing felt awkwardly pushed or overstated. I feel that audiophiles would be disappointed in the top end, and these headphones might not be my first choice as a mastering cross-reference. Other than that, though, their honest sound, extreme comfort and portability would make them a welcome companion on field recording gigs. I would love to have a roomful of these for music tracking sessions, because they would certainly keep any band happy with their cue mixes. I'd even trust these to double my monitors when editing and mixing. Street price is \$159.

and tweaking them. In general, unions and movable parts have a delicate feel to them and don't instill an overwhelming amount of confidence in their longevity. If they defy that expectation, however, the modular cord and ear pads will make for a long life.

The interesting thing about the sound of these headphones is that when I listened through them exclusively for extended periods, they presented a very even frequency response from the lows up through the midrange, and far more top-end detail than the norm. Meanwhile, when switching between them and nearly anything else, they seem to come up short in the bottom end and even push the top end. Though they claim a frequency response extending all the way down to 5 Hz, running an oscillator at 20 Hz through them didn't push much air. By 30 Hz, it was coming together, and up through the low-mids it seemed to sit evenly.

It's strange because listening to hip-hop or electronic music, I didn't really feel a lack of bass until I compared them to the ATH-M50s or the Beats. Kick and synth bass sounds were tight but backed off, allowing the focus to shift toward the detail of the complicated upper ranges. With buzzy synths, claps, snares and female vocal all fighting for the same space, the SRH940s really kept things in order. The stereo imaging was wide and immersive.

This sonic character lent itself really well to roomy live jazz recordings. Reverb decay and subtle sounds like snare rattles read really well. This led to a very "you-are-there" type of image. Similarly, listening to orchestral music, each section or instrument could be defined and localized easily and accurately. Subtle details like the movement of the players on-stage or audience members shifting in their seats during quieter passages also came through in a way that the ATH-M50s had disregarded.

When it came to edgy rock-guitar style music, again, bass took its place, holding down the foundation and staying punchy, while allowing separation of guitars, snare and vocals. Listening to metal recordings, which tend to be mixed and mastered bright in the first place, the top end of the SRH940s got to be pretty brutal over extended periods. Their output is significantly lower than average, so the tendency is to really crank the gain. In doing so, it seems like highs come up faster than the lows and start to muddy up before it really feels like the overall sound is as loud as you want it. This was far more noticeable when listening to distorted guitars than it was with jazz or even electronic music where lows are more emphasized.

Altogether, the SRH940s are very comfortable and provide a reliable image that would provide

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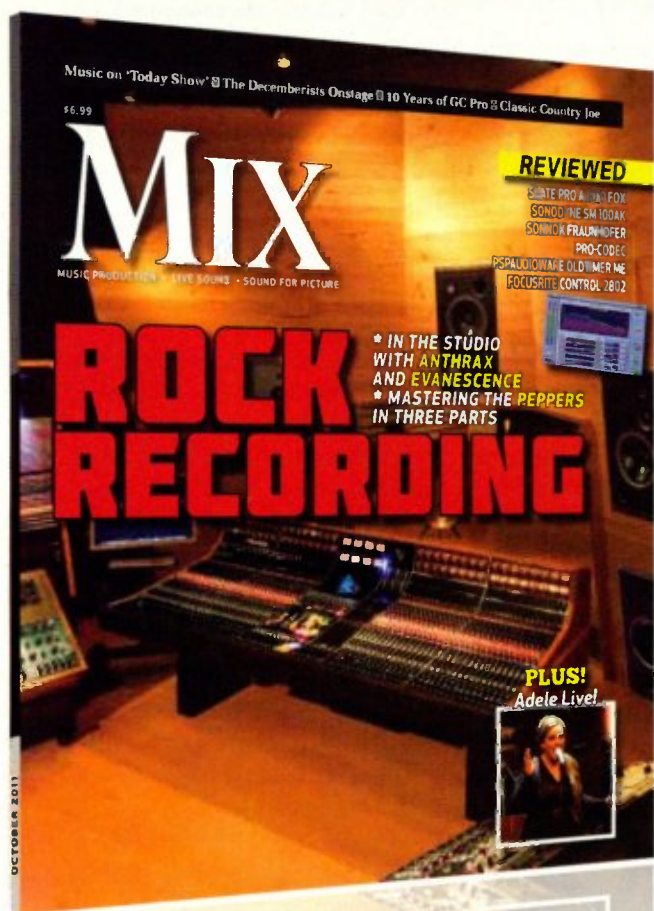
SHURE SRH940

At first glance, you can tell the SRH940s are going to be comfortable. Large velour-lined cups completely encapsulate the ear, providing great isolation. The top of the arch features four square foam pads encased in faux leather. The earpieces rotate 90 degrees and lie flat inside a large, rugged travel case. With a light weight comparable to the ATH-M50s they can be worn comfortably for extended periods. Two detachable cords are included, one featuring a coiled design, the other long and straight. Either one will twist and lock into the single socket on the left cup using a TRS-type connector, a bit smaller than a standard ⅛-inch mini.

The extension mechanism for the earpieces is a plastic-on-plastic track system that is rather rigid. It might loosen up after repeated adjustment, but then it might wear out completely. In any case, adjustment currently requires taking the headphones off

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great benefits to anyone critically listening and making decisions with headphones. Dialog editors will really appreciate the portrayal of breath and noise floor when making judgments about Pro Tools edits and fades. Especially when listening to them in an environment where bass already existed—like a studio where monitors were playing simultaneously—you couldn't ask for a better image detail. Street price is \$299.

BEATS BY DR. DRE FROM MONSTER

Monster's collaboration with Dr. Dre has yielded a slew of popular headphone offerings. With a range of styles, prices and target markets, they've had some consumers turning their heads, with some professionals turning up their noses. Whether bass-heavy, in-ear models with endorsements from Diddy to Gaga, or DJ-centric over-ears with active electronics, all of their designs seem to be surrounded by hype. The newest model, Beats Pro, is the first to be specifically targeted toward audio engineers.

From the box to the shape of the headset and right down to the quarter-inch adapter, you can tell every aspect of the aesthetic was clearly and carefully considered. It certainly is a slick presentation. And it suggests a thorough consideration of real-world practicality. For instance, sturdy hinges rotate the earpieces into the arch of the headset for portability. Removable ear cups can be washed or eventually replaced. The detachable cord has a pleasant weight and flexibility, and doesn't pinch or tangle easily. Dual ¼-



inch jacks are offered, one on each side of the unit. Either can serve as an input, automatically converting the other to a thru-put, allowing daisy-chained connections. You better just be daisy-chaining Beats by Dr. Dre, though, because these things are really loud.

The difference in output level between these and any other headphones I compared them to is significant. Earlier Beats models featured active amplification, and I would have assumed that is what I was hearing here if I hadn't read that they were a passive circuit. Before I tried them, I heard buzz that they had a forward low end, but I didn't find that to be true. In general, I found the bass to be clean, tight and punchy. The solid construction of the earpieces and pads prevented rattle or resonance. Naturally, music that was meant to be bassy was bassy, but if anything was overexaggerated, it was the midrange. My opinion of the overall sound largely varied by musical genre, though.

Listening to hip-hop, dance and electronic music provided the best overall experience. Shocking, right? Usually, music that is mixed to be heard loud will be a bit scooped in the midrange to allow the "boom" and the "chick" to really pop, even after a squashed mastering job. Snare crack stayed super-clean, even while competing with mega bass. Though the upper-mids didn't seem to muddy up too fast, the stereo image was somewhat underwhelming. I blame a lack of real highs. It's not so much that they weren't there at all, but they were easily pushed out of the way by the overstated high-mids.

That said, during quieter sections of symphonic pieces, where violins, flute and bass played the key roles, I was really impressed by the stereo image. Pizzicato strings danced around from side to side. When brass and cellos would emerge in fortissimo sections, the whole thing would turn muddy and narrow and sound almost distorted.

I had kind of a similar experience with classic rock, hard rock, metal, or anything with distorted electric guitars stirred together with drums and vocals. Too much information spanning the entire frequency spectrum resulted in a sound almost like the whole mix being EQ'd with a midrange boost and high-end rolloff. It just tends to sound a bit odd. It doesn't take much level for the mids to sound distorted. Listening to anything with significant midrange for any extended period resulted in significant ear fatigue and sometimes even pain.

This was coupled with the fact that the headset is rather heavy, and though the padding throughout is pretty comfortable, my head still felt pinched with the edges of the foam pads pressed firmly on my earlobes. Their high volume and respectable isolation would make them useful in noisy environments like airplanes, clubs or a session in progress. I've done hip-hop dates where the artists aren't happy until they can really feel the bass, where you really have to blast the mains. It can be a real challenge trying to judge the mix with it playing so loud. If this is the kind of session you are used to, these might be the ideal cross-reference. Street price is \$399. ■

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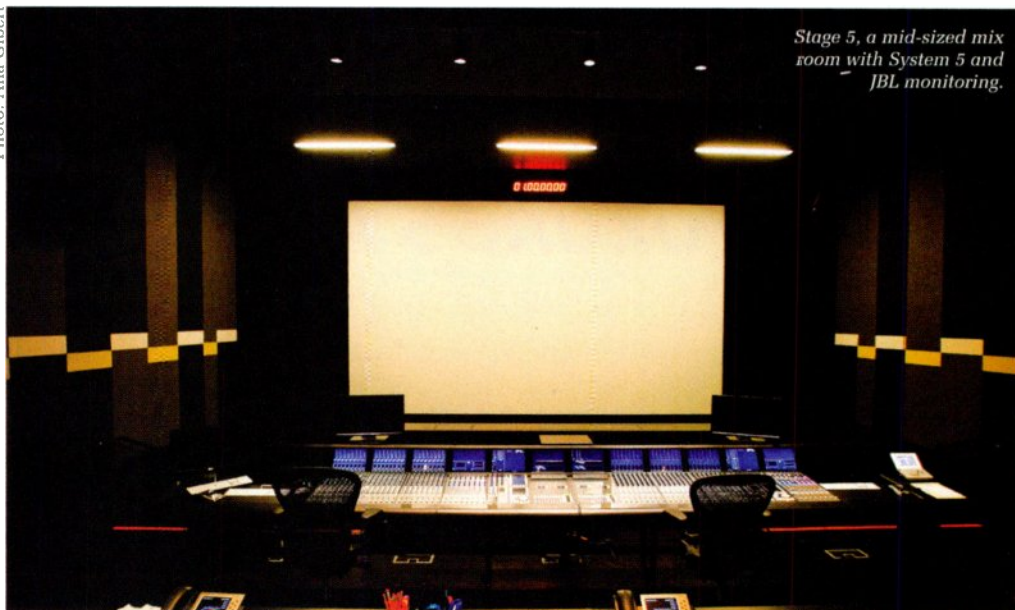
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Continued from p. 14

INFRASTRUCTURE AND INTERCONNECTS

The new facility makes full use of Technicolor's file-based digital workflow, which is centered on dual 10Gbit/sec fiber connections between the various re-recording stages, Foley, ADR and sound editorial suites; other facilities around the world can be interlinked via the existing Technicolor Production Network (TPN). "Our centralized data store holds a total of 750 TBytes of spinning SAN-based media," says chief engineer Novitch. "We have also fully updated to Pro Tools 10, which lets each stage directly mount disc volumes from the central data store," where a Quantum StorNext file-based system can be accessed directly via the dedicated high-speed network. "In terms of speed and asset management," Novitch continues, "Pro Tools 10 dramatically enhances our workflow throughout

Photo: Ana Gilbert



Stage 5, a mid-sized mix room with System 5 and JBL monitoring.



Mixer Larry Barr in one of the DVD edit rooms.

Photo: Ana Gilbert

the facility. Avid Satellite Link streamlines the synchronization of audio and video playback systems via Ethernet connections." Novitch is assisted by Tom Virostek, Rodrigo Ortiz, Evan Rautiainen, Dean Alling and David Green.

"Previous versions of Pro Tools 9 required that we transfer files from the SAN to local storage for access on each re-recording and ADR stage," Novitch states. In addition to requiring extra time to set up a room before each mix session, "we also had to transfer back to the central store the revised or updated versions," the chief engineer explains. "Pro Tools 10 eliminates those extra steps—the re-recording/ADR mixers and sound editors simply mount the appropriate drive and hit Play."

In terms of enhanced workflow and creative options, the new facility's commitment to System 5, ICON and C24 consoles with fully implement-

ed EuCon connectivity to Pro Tools|HD workstations, Novitch considers, "means that our mix and editorial staff can access Pro Tools parameters from the mix position and easily refine plug-in settings during the session. The user compatibility and file transferability of Pro Tools sessions and data files represents a fully integrated solution."

"Our new complex has been constructed to be a 21st-century, state-of-the-art, filmmaker-friendly sound post-production facility," says Millan, who joined the operation last September and was instrumental in recruiting the new creative staff for Stages 1 and 2. "Technicolor at Paramount is outfitted with the best technology and staffed by a truly creative group of mixers. This industry is based on trust; we need to provide our filmmakers with the best creative talent working with the best tools and supported by a

totally bulletproof infrastructure."

"The new Technicolor at Paramount facility comprises a high-density, one-stop sound facility," concludes Curt Behlmer, who oversaw design and outfitting of the three-story complex. "We even selected the mixing consoles for Stages 1 and 2 without talent attached. But we knew that System 5 would offer the mixing power, flexible connectivity and enhanced digital workflow our re-recording crews would need to remain competitive, and offer the kind of services our clients look for from the new operation."

Film and broadcast post-production is a highly collaborative process, Behlmer stresses. "Compatibility between all eight stages is crucially important to us, since film/TV directors often require access to a number of stages during predubs and print mastering, with mixes freely moving from stage to stage," he points out. "We believe strongly in using appropriate technologies to ensure that our new facility remains at the leading edge of sound post-production. For us, Avid appears to provide an ideal workflow solution, with its seamless integration of System 5 digital consoles with EuCon connectivity and Pro Tools|HD DAWs, in addition to Nitris DX for high-definition video playback."

Mel Lambert has been involved with production and broadcast industries on both sides of the Atlantic for more years than he cares to remember. Now principal of Media&Marketing, a Los Angeles-based consulting service for the pro audio industry, he can be found at mel-lambert.com.

iZOTOPE OZONE 5 ADVANCED

Upgrade Elevates Mixing and Mastering Suite to Lofty Standards

IZotope Ozone 4, the popular low-cost software-mastering suite, offered an incredible array of features and generally excellent audio quality. But aspects of the plug-in's design that endeared it to prosumers also held it back from universal acceptance by uncompromising professionals.

The new Ozone 5 Advanced (a more feature-rich variant of the simultaneously released Ozone 5) appeals directly to professional mix and mastering engineers by offering improved audio quality, an expanded feature set and extensive workflow enhancements. The deeply reworked suite includes a separate component plug-in for each of its processing blocks; new analysis tools; and new algorithms for its maximizer, harmonic exciter, stereo imager and dynamics processors. The updated reverb processor has gone hybrid, combining impulse responses with algorithmic reverb tails.

I reviewed Ozone Version 5.0.2 Advanced in Digital Performer 7.21 (DP) and Pro Tools 9.0.6 using an 8-core Mac Pro running OS X 10.6.8. Ozone 5 Advanced is available in AU, RTAS, VST, MAS and DirectX formats.

PAST AND PRESENT

For those unfamiliar with prior versions of Ozone, the plug-in incorporates its various processing modules—paragraphic equalizer, reverb, loudness maximizer (with dithering), dynamics, harmonic exciter and stereo imager—into a single interface that displays the control set for each in turn. The dynamics, exciter and imaging modules are multiband, offering up to four frequency bands with adjustable crossovers. With the exception of the maximizer and imager blocks, each module can render either stereo or mid-side (M/S) processing. Ozone's I/O meters likewise operate in either stereo or M/S mode.

Prior releases of Ozone locked all its processing blocks in one GUI, an approach that allowed sweeping mastering presets that processed the audio in manifold ways at once. The design's downside was that it constrained you to start your mastering session with everything but the kitchen sink instantiated, resulting in an unnecessarily bloated work environment. With Ozone 5 Advanced, you can load each processing module into your session as a separate plug-in, which also often results in lower CPU load. You can still use the wholly integrated plug-in, if you wish. The discrete plug-ins can store their own presets, and they are interchangeable with presets now allowed for individual processing blocks in the integrated plug-in.

The dynamics module can now perform upward compression



Fig. 1: The dynamics processor for Ozone 5 Advanced can now show the limiter, compressor and gate parameters for all frequency bands at once. The sidechain's Tilt filter is displayed at the top of the GUI.

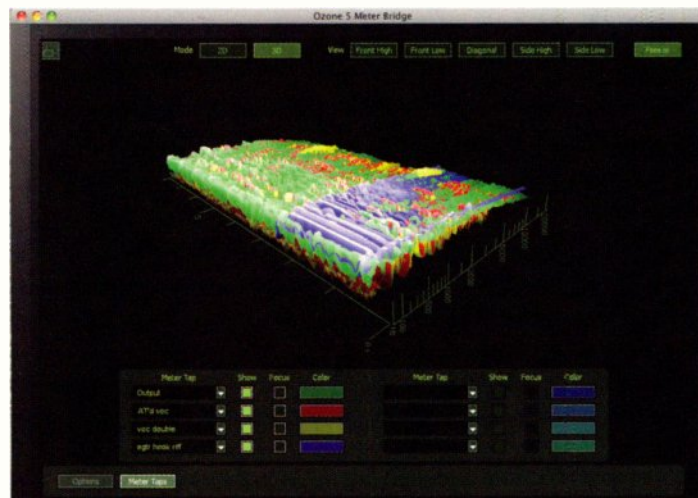


Fig. 2: Meter Taps in the Meter Bridge's spectrogram, showing color-coded spectral histories for vocals (red and yellow), electric guitar (blue) and the entire mix (green).

and limiting by using ratios less than 1:1. New sidechain filters execute highpass and tilt slopes. (The tilt slope is similar to that for the "thrust" circuit in API compressors.) A continuously variable knee gives you more exacting control of the compression curve. And whereas Ozone 4 could only show the dynamics processor's



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world radio history

controls for one band at a time, a new Show All Bands mode displays the whole kit and caboodle in one window (see Fig. 1).

The loudness maximizer has a new algorithm called Intelligent III, or "IRC III," that minimizes distortion. A new Transient Recovery function purportedly preserves transient detail even when the maximizer performs aggressive limiting. The degree of stereo linking can be progressively reduced to approach or fully yield dual-mono operation.

Ozone 5 Advanced also includes new Triode and Dual Triode modes (modeling the sound of vintage tube preamps) for its multiband harmonic exciter. A new mono-compatible Stereoize mode for the stereo imager widens the soundstage of mono and narrow-soundstage signals. Ozone 5 Advanced also allows you to insert two equalizers (one better than Ozone 4) in the signal chain for the integrated plug-in. Newly added Butterworth, brickwall (elliptic) and Pultec-style low- and high-shelving filters sweeten the pot. You can even combine analog-style and linear-phase filters in the same equalizer.

ACTING ON IMPULSE

Ozone 5 Advanced's reverb processor uses impulse responses (IRs) for its early reflections and algorithmic 'verb for its tail. Choose among room, hall, theater, cathedral, arena and EMT 140 plate IRs. You can lower the level of the early reflections and add pre-delay. The reverb tail has controls for adjusting

its decay time and high- and low-frequency damping. Stereo-width and channel-cross-feed controls and lowpass and highpass filters all affect both the early reflections and tail.

Unlike with Ozone 4, you can now use different crossover settings—Q, phase linearity and the number of bands—for each multiband processor. You can also link new Module Amount controls to one or more parameters and use them to adjust the processing depth for each module or the entire integrated plug-in. The parameter links are not freely assignable but selected among

fixed factory presets in a pop-up menu.

High-end metering capabilities abound. Clicking on a button below the I/O meters in the integrated plug-in opens a floating and customizable window called the Meter Bridge. You can configure the Meter Bridge to show any or all of the following: a spectrogram (either a 2-D frequency-time view or a 3-D view that also displays amplitudes), spectrum analyzer, vector scope (stereo-image display) and I/O meters. The I/O meters include LUFS loudness metering compliant with both the ITU-R BS.1770-2 and EBU R128 standards; those metrics are useful for broadcast applications.

Insert the included Meter Taps plug-in on any track or bus in your mix session to route it to the Meter Bridge's spectrogram for analysis (see Fig. 2). Meter Taps can be instantiated on multiple tracks and buses—or on stems for a mastering session—without incurring any latency. Each instance can be named (for example, "vocals") and color-coded to distinguish it from Meter Taps used on other sources.

HOW DOES IT SOUND?

With a few quick multiband tweaks, the new Triode and Dual Triode exciter modes sounded positively outstanding on entire mixes and lead vocal tracks alike. Authentically lush, they instantly became my favorite exciter modes.

Turning up only the midrange width control for the imager and nudging the Stereoize slider up a bit, a mono electric guitar vamp was beautifully widened into a stereo image.

The reverb module, in M/S mode, really helped an overly dry mix come to life. I fashioned a bandpass filter for the reverb's mid channel to weed out most of the kick, bass and cymbals; that allowed me to add a touch of hall 'verb—with heavy high-frequency damping—to lead vocals and center-panned guitars. I fed the side channel the full-bandwidth reverb, with less damping and higher output to give it more zing. This was just enough processing to add a little fairy dust to the mix, and it sounded great.

Of all the maximizer modes that provided reliable clipping protection, IRC III sounded the best. It preserved the most depth, air and detail in mastering sessions. Pushed very hard, it pumped a bit—an excellent mixdown effect on rock lead vocal tracks! The maximizer's Transient Recovery function, on the other hand, subtly reduced transient detail—the opposite of its intended effect. I preferred to keep it turned off.

UNFINISHED BUSINESS

The integrated plug-in (in its output section) and the M/S-capable component plug-ins each desperately need separate mid- and side output-level controls or an M/S balance control to facilitate workflow. (In M/S mode, adjusting global gain controls in the multiband dynamics processor is a good workaround.)

The exciter has an adjustable high-shelving filter that should ideally only affect the wet signal and not the parallel dry component. It currently affects both signal paths, but iZotope says the next update (V. 5.0.3) will fix this. The infinite-hold function for the maximizer's gain reduction meter doesn't work in V. 5.0.2.

DP and Pro Tools' proprietary bypass controls couldn't bypass processing in the component plug-ins. (This wasn't a problem using the integrated plug-in.) If you're using a control surface with either of these DAWs, you'll have to automate the component plug-ins' bypasses inside each plug-in's GUI, until a future update fixes this bug.

FINAL RENDERING

Ozone 5 Advanced is one of the most feature-rich suites of software-based mastering tools available today; the only major oversight is the lack of M/S output-level controls. Most of the new algorithms sound terrific. Highly nuanced, this is no prosumer offering but one that appeals directly to professional mix and mastering engineers.

If you're new to Ozone, you'll find the learning curve is quite steep but the rewards well worth the effort. For owners of previous versions, Ozone 5 Advanced is a very lavish and compelling upgrade. Ozone 5 Advanced is a sky-high hit!

Mix contributing editor Michael Cooper (www.myspace.com/michaelcooperrecording) is a mix and mastering engineer based in Oregon.

TRY THIS

Insert Ozone 5 Advanced's multiband stereo imager on your mix and drag the Band 1 Width slider all the way down, thereby narrowing the bottom end to mono. Then widen the high frequencies to taste by boosting the Band 4 Width slider. The result will be a bigger soundstage.

PRODUCT SUMMARY

COMPANY: iZotope
PRODUCT: Ozone 5 Advanced
WEBSITE: izotope.com
PRICE: \$999 MSRP, \$799 street price; \$599 upgrade from previous versions
PROS: Excellent sound quality. Extremely deep feature set. Includes discrete plug-ins. Provides multiband and M/S processing.
CONS: No M/S output-level or balance controls. A few significant bugs. Steep learning curve for new Ozone users.

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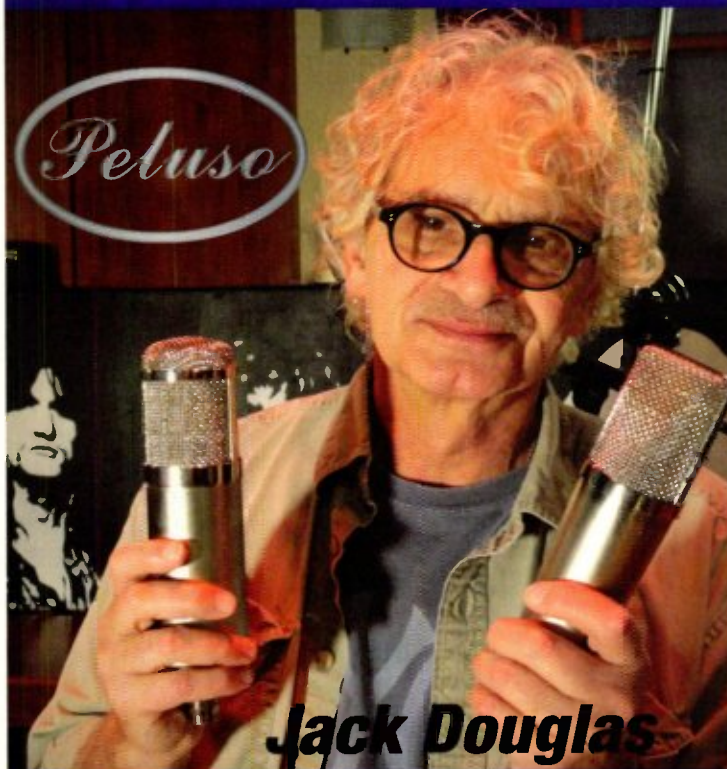
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By Kevin Becka

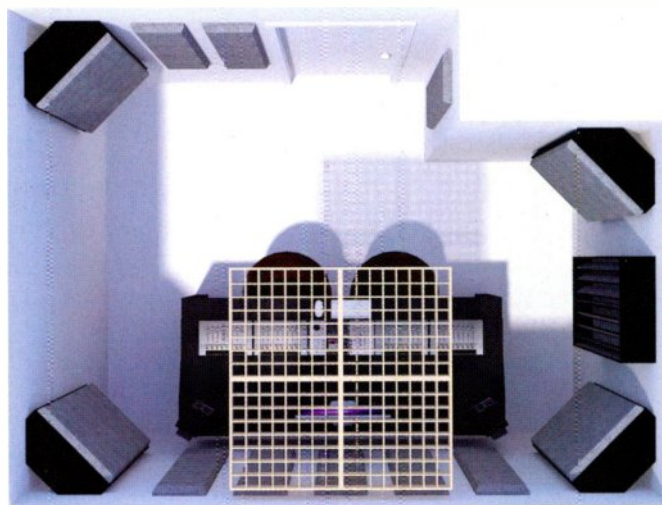
At this point in the construction of my room, I'm ready to tune up the acoustics. I shopped around and decided that for my mixing needs, Primacoustic's line of products provided the best blend of problem solving, aesthetic and budget options; plus, they offer a high level of service.

Before I started the build, I dabbled in Google's SketchUp application and made a basic 3-D drawing of the space. Jay Porter at Primacoustic asked me to send him the drawing, to which he could add some acoustic materials. The drawing you see on this page is the final iteration of this process. Jay came up with some solid ideas, although I tweaked them a bit. For instance, he suggested Nimbus clouds on my ceiling, but I wasn't wild about the look. Instead, I opted for a DIY approach and used four of Primacoustic's Radiator Birch diffusers hung from springs I bought at Lowe's. I then added some absorption in the space between the diffuser and the ceiling by simply laying in some Broadway panels. It gives me the perfect combination of diffusion and absorption with a great look. The entire Primacoustic order comprised four Max corner bass traps, a dozen Broadway panels, seven Radiator diffusers and one Flex diffuser for the wall opposite my window.

When the material arrived, audio tech Jeff Harris and I, along with two interns, took a day to build and mount the traps and diffusers. Jeff tested the room empty, and then again at every stage of install using ETF's Acoustic Measurement software. This gave us a good indication of the initial problems and how the Primacoustic material was helping, or not. Although there was a considerable amount of treatment, I expected this was step one in the process and was ready to move things around and add more if needed.

The first lesson learned was to not fall in love with what you believe is the best orientation of the gear in the room. Since the beginning, I pictured my desk against an empty wall, which has a large window. However, once Jeff and I got all the material up and I set up two Focal CMS65 speakers, ETF and listening tests proved this to be a bad idea. There was too much low-end buildup in the middle where my head would live, plus the stereo image wasn't great with all that glass in my face. A 180-degree turn was worse: The stereo image fell completely apart at the other end. This led to the arrangement you see in the picture, which works very well.

I'm still toying with the acoustics as I work in the room. The day I was done installing all my gear, I started mixing a project, a collection



of 11 songs from Catholic singer/songwriter Gretchen Harris. This shakedown cruise gave me a great way to work out a few of the bugs.

First, while mixing, I was feeling reflections from my window looming over my right shoulder. So I had my contractor take my three remaining Radiator panels, plus a Broadway panel, and build me a rolling diffuser/absorber gobo—similar to my DIY “cloud,” but vertical. This made a huge difference. Not only did it knock down the reflections from the glass; it broke up some of the low end in the room, giving me a wider sweet spot. Another big advance came after I had CRAS live sound instructor Keith Morris come over and run Rational Acoustics' Smaart so I could be sure I was phase correct at my listening position. He found some puzzling comb filtering and pointed out that my tabletop was causing some audio mischief. This was fixed by a \$21 anti-fatigue rubber mat—like you'd see on the floor of a restaurant or bar—which now covers the top of my desk. The look is industrial and cool, plus it tamed a sibilance problem I'd been hearing in my tracks.

The bottom line with acoustic treatment in a space like mine is that experimentation is key to getting it right, along with some reliable tech feedback. Running ETF and Smaart, and having pros who know how to interpret the graphs, is essential. Take readings where your head will be, but also take them at the floor, ceiling, back wall and corners. And fixing room problems doesn't have to be expensive. Mastering engineer Gavin Lurssen once told me to throw pillows in the corners to help break up standing waves, and Jeff Harris makes tuned bass traps out of tubular concrete forms you can find at Lowe's. It's all a process that pays big in audio dividends. Next month: On to the gear. ■

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