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On the Cover: Oscar-nominated film composer Marco Beltrami's new facility, Pianella Studios, in Malibu, Calif., features an Avid D-Command and a private scoring stage. For more, go to page 12. Photo: Jay Kaufman. Inset Photo: Dave Vann.

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From the Editor

SOUND AND PICTURE

We've seen this happen before, with a medium birthed on audio giving way to dominance by video. It happened in broadcast, where radio—the original WiFi, albeit one-way—was overtaken by television, and later cable, on the news and drama front, then decades later by MTV on the music front. In broad and simple terms, you can replace broadcast with Internet/mobile, and plug in Napster for radio and YouTube, a seemingly legal peer-to-peer for video, and you can see the parallels. Only this time, it didn't take video 30 to 40 years to assert itself; it simply required more bandwidth and greater storage, and then it seemingly happened overnight.

There are many holes in this argument, and to be sure radio hardly disappeared with the advent of television. But the fundamental shift in how we get information—news or entertainment—is eerily similar. There were big technical challenges to overcome in production; there were plenty of rights issues to work out with performers; and the change in the primary means of distribution created all kinds of chaos in the professional world, with the old guard predicting the death of quality audio and the loss of jobs with the emergence of television. Of course that didn't happen. New industries were born, new jobs were created, cable came onto the scene and one day we got hi-def.

But there is a huge difference this time around as we transform from a broadcast/cable model to a streaming/download world. And that is the barrier of entry to the means of production and distribution. I'm not talking about 1998, when the walls went down and there were elaborate predictions about how the Internet was the great equalizer and anyone could be a star. It has become much too mature of an industry to believe that. I'm talking more about how individuals or smaller organizations can now compete, about how a wind ensemble Webcast from the University of North Texas can demand prime-time eyeballs simply because it's available. I'm talking about how Rebecca Black can find her fleeting 15 minutes with a camera in her living room, and how YouTube can remain a Top 5 site year after year and change the way we discover new music. Once the corporations take over, we see how Netflix can, in one year, become the biggest data distributor on the Web.

In the broadcast model, there is a demand for facilities that cater to sound-for-picture. There are trucks that capture the live events and post houses that mix program. There are symphonies hired to record the openings and big money paid to artists for licensing deals. A few short decades ago, there were whole businesses built around transfers and laybacks and duplication. Big-budget programs needed—and still do need—professional resources, and that's not going away. We call it sound *for* picture because that's what it is: sound serving picture. But that is changing. Today, it might be more accurate to call it sound *and* picture.

The audio and video industries have always shared a familial bond, to the point that we still hear the cliché that audio is the bastard stepchild of video. But the producers of today and tomorrow know video and audio. They work comfortably in both fields, and they have the tools available to do so, at a relatively low cost. Entire new industries of audio production, post-production and distribution are opening up, with all the ancillary services that feed them. The Internet is maturing, mobile is exploding and who knows what will happen with social media. We've seen this transformation happen before, but this time we all get to be part of it.

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MIX

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"I just spent the last two weeks doing overdubs at Blackbird in Studio E on the 1608. Wow, this is an amazing sounding console; so punchy and open on the top end. The preamps are huge! In the box or outside the box, everything should pass thru this console once. Amazing desk guys, Thanks for making my job easier! Cheers!"

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Current

COMPILED BY SARAH BENZULY

JERRY RAGOVOY, 1931-2011

Jerry Ragovoy, the songwriter behind "Time Is on My Side" and "Piece of My Heart," among many others, passed away from complications following a stroke. Ragovoy and Herb Slotkin set up Grand Records to release tracks from The Castelles, including "My Girl Awaits Me" and "This Silver Ring." The label could not replicate the success of those albums, and so Ragovoy joined Chancellor Records (Philadephia) for a brief time and eventually moved to New York City, where he worked with songwriter/producer Bert Berns and released "Cry Baby" for Garnet Mimms and The Enchanters; this was one of many songs for which Ragovoy used his pseudonym Norman Meade. Working mainly with Berns until the latter's death in 1967, Ragovoy created a series of soul records. The ensuing years saw less and less of Ragovoy, though he did come out of retirement in 2003 for a reunion with Howard Tate, writing songs for the latter.

PARSONS SCHOOL AT THE VILLAGE

Photo: Courtesy ASCAP

Addressing an audience of 16 musicians, engineers and producers, the latest Alan Parsons Master Class at The Village Recorders in West Los Angeles during late July expanded upon techniques outlined in Parsons' *Art & Science of Sound Recording* DVD series. Produced by Julian Colbeck from Keyfax NewMedia, the two-day Level 3/Advanced Session included a live tracking date "Do You Live At All," with Vinnie Colaiuta on drums, Nathan East on bass, Michael Thompson on guitar and Rami Jaffee on keyboards, followed by instrumental overdubs, plus lead, harmony and background vocals from P.J. Olsson. Event co-sponsors included Vintage King Audio, Audio-Technica, Universal Audio and Yamaha.

"I am a huge fan of Alan Parsons' work," says Robert Fort, a Los Angeles–based musician working in the music retailing industry. "It was interesting to listen to comments from the participating musicians during the tracking session, and have Alan explain the recording and mixing process in such detail." Brian Dees, a Florida-based attorney with his own project studio, agrees: "Watching Alan work was a revelation. I learned a lot about session techniques, particularly using EQ on piano tracks. I took a lot of notes!"

—Mel Lambert

Take It to the Hill

On July 26, The Recording Academy and its Producers & Engineers Wing brought producers and Congressional leaders to Capitol Hill for a day of meetings, panel discussion and musical demonstrations—all part of the academy's D.C.-based Grammys on the Hill initiative. Discussions focused on intellectual property, performance rights, the economic and cultural importance of music, and the changing landscape of the recording industry. The noontime panel focused on the art, craft and process of recording.

Photo: Courtesy of The Recording Academy/Wireimage.com © 2011. Photographed by Kris Connor

Rep. Howard Coble (R-N.C.) flanked by members of the Recording Academy at the recent Grammys on the Hill initiative.

seen & heard

"My 17 years as AES executive director have been an exhilarating and deeply gratifying experience. I have thoroughly enjoyed collaborating with convention committees on nearly 40 major events in the United States and throughout Europe. I have also been privileged to work with AES members around the world on hundreds of conferences, workshops and internal events. I take great pride in these accomplishments and in having guided the AES through the particularly difficult times experienced by the entire professional audio industry over the past decade. I look forward to continuing to contribute my time and energy to this indispensable organization in future years."

—Roger Furness, who steps down as AES executive director and remains as executive director emeritus through 2012.

PATENT FILING

Lauten Audio and Dr. Charles Chen, Ph.D., have filed for a new patent related to microphone capsule biasing, which relates to a double-bias circuit for condenser microphone capsules that generates a balanced output directly from a condenser capsule without the need for a phase splitter or transformer in the circuit path. Current splitter circuits result in distortion or clipping of the two output signals, negatively affecting the dynamic range, the invenotrs say. Lauten Audio plans to implement the new technology into future condenser mics.

Dr. Charles Chen, Ph.D., at work on new Lauten Audio microphone designs

MIXBLOGS

TechTicker: New Avid Fast Track C400/C600?

Looks like the cats out of the bag on new Fast Track interfaces from Avid. NovaMusik has the new Fast Track C400 and C600 on their site with hints at onboard effects and a monitor management system supporting multiple speaker sets.

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

Ask Eddie: Topic4—Search and Destroy

Upgrading op amps in the audio path can be a bit of a minefield. But not all op amps are in the signal path...so when an op amp's functionality is circuit-critical, check the manufacturer's Website.

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

SPARS Sound Bite

Film Is a Sound Idea

At Ardent Studios, our job is to create entertainment—any way possible. While we are rooted in the foundations of rock 'n' roll from our 45 years in Memphis, we have seen the power of the visual. Sound and picture have gone hand-in-hand since the 1920s, and today the relationship is even closer. There isn't a music industry or a film industry anymore, and soon there won't even be a traditional broadcast industry. There is just the entertainment industry. The demand for video content—with superior audio—is exploding with the advent of streaming and downloads.

Ardent's Film Department was launched on March 20, 2011, to provide for our music clients and our internal need for video services. At the

same time, John Fry (Ardent founder/president, pictured at left with Jonathan Pekar) was discontent with the lost opportunities of film and video productions, so he put his money where his mouth is. Ardent is pleased to announce the addition of a 48-channel SSL Duality console with in-board patchbay, a Delta Link HD-MADI unit and two Alpha Link converter units.

Now Ardent is a full-service production facility capable of taking an idea from inception to the final cut. Although we use a world-class creative and technical labor force, we still begin every production in an old-school style: a pencil, paper and great ideas. Ardent's first production was a 30-second animated PSA for the Memphis Music Foundation. We came up with the idea, collaborated with Memphis artist Lamar Sorrento and brought one of his fantastic paintings to life. It took about two months to animate the art and another week to get the audio coordinated. We premiered the commercial at our Film Department's grand-opening party last June.

We believe in Memphis and invite the world to visit our unique city. We can bring you some of the best artists on the planet, and we can even do your audio post.

— Jonathan Pekar

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Studio Unknown Update

Is image really everything, even when it comes to post-production studios? Sure, image plays a big part in those who are in front of the camera, but what about the facilities that are behind the scenes? Do dollars and time spent on branding and image-management development actually translate into jobs? Find out in the September issue of "Confessions of a Small Working Studio."
>>mixonline.com/studio_unknown

Cool Spin

Dan Mangan *Oh Fortune* (Arts & Crafts)

There's just something so beautiful about a man and his acoustic guitar—is it the simplicity? The single voice and a few strummed chords? Then throw in splashes of other instrumentation and backing vocals, and the entire atmosphere becomes more luscious, something a bit beefier. For singer/

songwriter Dan Mangan, his latest outing, *Oh Fortune*, is steeped in his folk sensibilities—a raspy voice, excellent acoustic guitar strumming and twanging, deft tempo changes. Writing mostly on the road during the past three years, Mangan's muse was evidently out the window of the touring bus ("Rows of Houses") and deep inside his soul ("If I Am Dead").
>>mixonline.com/cool-spins

SoundWorks Collection Update

Director Rupert Wyatt takes the audience on the science-fiction summer hit *Rise of the Planet of the Apes*. Leading the sound team is supervising sound editor and sound designer Chuck Michael and co-supervisor John Larsen, with the talents of first assistant sound editor Smokey Cloud and sound re-recording mixers Doug Hemphill and Ron Bartlett.
>>mixonline.com/post/features/video_soundworks_collection

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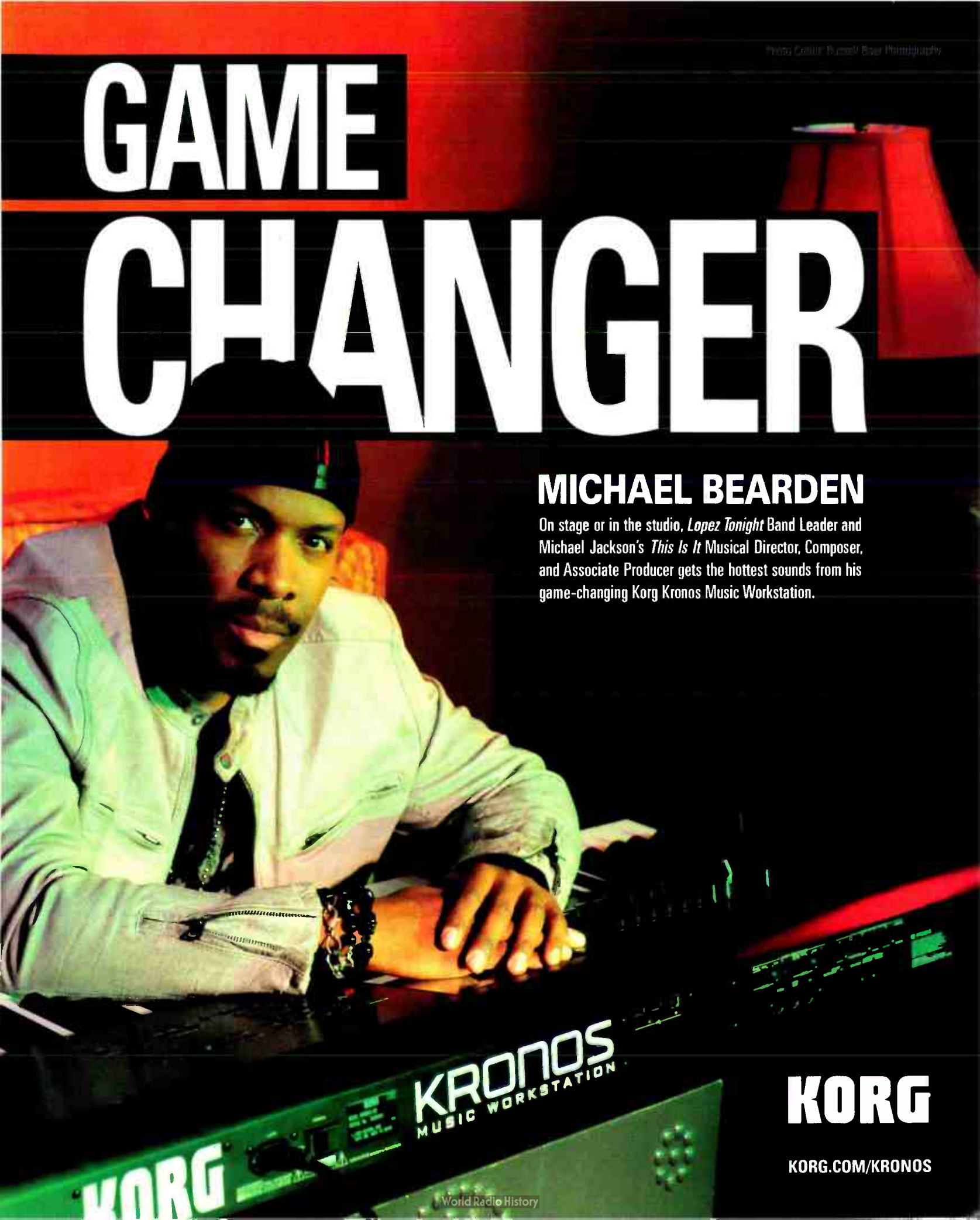

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On the Cover

By Matt Hurwitz

PIANELLA STUDIOS, MALIBU, CA

Photo: Jay Kaufman

Marco Beltrami's separate writing room is centered on an Avid D-Command and MOTU Digital Performer.

After years of using a converted walk-in closet in a rental in Malibu, Calif., as a demo production studio, Oscar-nominated film composer Marco Beltrami (*The Hurt Locker*, *3:10 to Yuma* and the upcoming remake of *The Thing*) decided it was time to build the kind of facility that would provide him and his sound designer/co-composer, Buck Sanders, a place to compose, record and mix final score recordings.

The result is Pianella Studios, completed in 2010. Situated on a mountaintop in a rural portion of Malibu in Ventura County, the studio offers a uniquely reverberant—particularly for its size—recording stage, designed under the supervision of Abbey Road Studios alumnus John Kurlander, who has also been Beltrami's scoring mixer for more than 45 films.

"We do a lot of experimentation," Beltrami explains of his and Sanders' composition process. "I found that we were spending a lot of time in studios recording sounds, and when you're paying for the studio, it gets prohibitive. You can't really explore to the fullest. And that's something we really enjoy doing."

An avid motorcyclist, Beltrami had explored the area that would become Pianella's home. "It was just raw land," he says of the 20-acre site. "It was just an amazing place." Working with architect Gary Williamson, Beltrami initially planned a three-fold design: a house, featuring the recording studio on the lower level; a guest house for visiting production teams; and a 60x40-foot barn to store his bikes and other materials.

The permit process, however, forced him to change his plans. While the simple barn structure was approved quickly, the approvals for the house were delayed. As Kurlander recalls, "He called me to lunch with Gary, and said, 'Look, we have approval

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~ Simon Gogerly
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~ Butch Walker
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~ Jeff Waters
(Annihilator)

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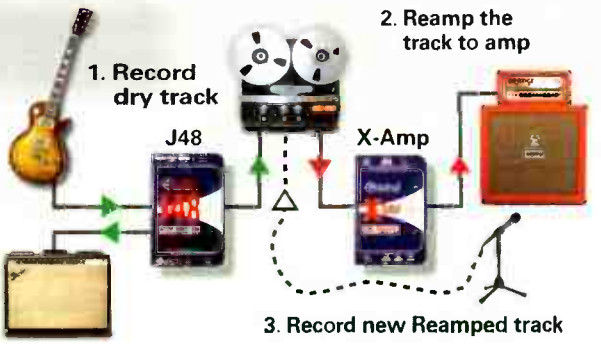

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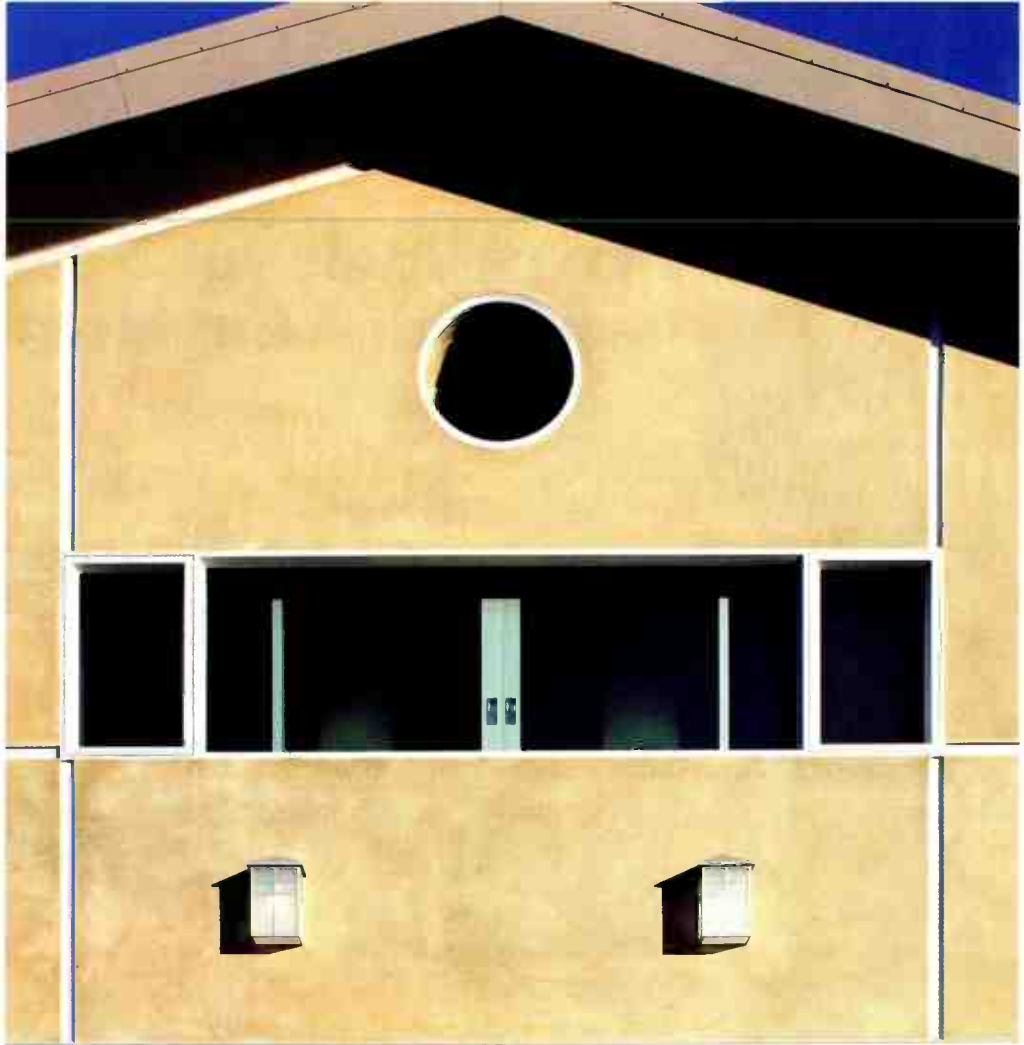
Composer Buck Sanders capturing unique sounds




acoustic of the interior space.

Photo: Jay Kaufman

for the barn, but the house is going to take forever and I need a studio. How about we put the studio in the barn?' It was very big, and when we overlaid Gary's studio plan onto the barn, it was dwarfed. So I just drew out on a napkin a little plan, which we built."

Kurlander, who moved to Los Angeles from England in the late 1990s, wanted to see something that didn't exist in L.A. scoring stages. "All the orchestral studios and recording venues in Europe, particularly in London, have ambient spaces where the reverberation time is much longer," with decay times of more than two seconds. "The converted soundstages of Southern California, however, are closer to 1-second RT. They definitely have a dead sound. It's just a different mindset."

So while Kurlander could have spec'd a false ceiling to deaden the room, he chose to take advantage of the 28-foot ceiling the barn structure offered, maximizing the reverberation in the 30x35-foot studio area, where up to 35 musicians can fit. A 10.5-foot balcony underhang allows room for an additional five players.

The parallel walls of the high ceiling are lined with 8x4-foot classic-core ¾-inch maple panels treated with a polyurethane finish, resulting in a highly reflective tower, in a sense, above the musicians. The lower-level walls are lined with an untreated Plyboo panel material made of compressed bamboo, and the studio floor is built of white oak, also uncoated, except for a slight wax-oil treatment. "Marco said to me, 'What if someone spills coffee?'" recalls Kurlander. "I told him I would personally clean it up! [Laughs.] So what we have is the livest surface—the hardest surfaces—up in the air, and the surfaces where the players are, such as the sidewalls and floor, are relatively softer."

The main three-microphone tree picks up the overall sound, plus that natural reverb, with an additional pair of mics attached to the back wall of the high wall, recording mostly room alone, giving the engineer added flexibility during mixing.

"Everyone said to us, 'But won't you get a terrible slap?'" Kurlander says. "Yes, but nobody's going to be up there to hear it. We've done impulse-response tests, and, empty, it measures a smooth 2.3 seconds and about 2.1 with the orchestra present. With that decay time, we have a recording space unlike anything available anywhere else in Los Angeles."

Pianella also features on its first floor, two iso booths—one big enough for a piano and the other, narrower, behind the conductor for a few soloists.

There is also a kitchen and a single restroom, which Beltrami quickly realized would not be enough for the multitude on break between cues. "When we did our first session with an orchestra, I made an announcement suggesting the gentlemen make use of the bushes outside, leaving the restroom inside for the ladies," he says with a laugh. Expanded facilities are already in the works.

Upstairs is a lounge, as well as a work area for copyists to make any between-session changes. There is also a balcony over the rear of the stage, on which either musicians can be placed and miked from below, or microphones can be placed (and connected through tielines) to record the musicians below. "It provides a different perspective," explains Sanders. "On *The Thing*, there were some effects we were trying to get with the woodwinds. We wanted them to sound distant so we had the players up on the balcony and recorded them from down on the floor."

The upstairs is also home to Beltrami's warmly decorated writing room. Both he and Sanders work in MOTU Digital Performer; Sanders works below, in a portion of the control room and in the main studio, creating sounds that are sent up to Beltrami to incorporate in his compositions. "Buck records sounds that we use in a template of sounds to be used in the film, and then I start working on cues," Beltrami explains. "Our work together has evolved since we started 15 years ago. I initially had brought Buck in because I needed someone who was technically savvy, but we also co-compose."

Composer Buck Sanders and studio owner/composer Marco Beltrami (seated)

With the exception of some basic orchestral sounds used for mock-up purposes, the pair avoid using any sample libraries in their scores. "What really sets us apart from other scores or composers is that we have a place where we can fully experiment and create sounds that you can't get from a sample library," Sanders says. Adds Kurlander, "It's one of the things that characterizes their scores; it's completely organic. If you hear what sounds like a drum loop, that means Buck has just made a recording and created a 4-bar pattern and looped it. Or they'll use something like the sound from the thumping of a piano pedal—Buck turned that into something."

On a recent visit, Sanders was using the back side of an old saw as a bow on an open-tuned guitar, creating a sound for an upcoming project's character theme. The instrument was recorded using a M/S mic setup, which, later, using Digital Performer, allows him to vary both the stereo spread of the recording and its close pickup. "It can open up at times when the character becomes agitated, evolving over a scene."

Unique to Pianella is the ability to record with the studio's sliding "barn doors" either open or closed, allowing in fresh air from the beautiful—and quiet—environment outside, as well as acting as a natural baffle to adjust some of the room's reverberance. "The inherent problem with baffles is that they're not broadband absorbers," explains Jay Kaufman of Kaufman & Associates, who was brought in to refine the original building design to provide better isolation. "Most of the energy absorbed is mid- and high-band. So when lots of baffles are used, it changes the character of the room, becomes boomier. When you open those doors, it, in essence, becomes this wonderful broadband absorber. It doesn't change the character of the room; it just becomes drier."

In addition to adjusting the geometry of Williamson's original design to provide a smoother response in various parts of the building, and creating improved isolation between studio spaces, Kaufman also helped Beltrami and Kurlander realize their vision for the control room. "We had done the score for *I, Robot*, and they had given us the unusual opportunity to mix the music on one of their smaller dub stages rather than in a recording studio," Kurlander recalls. "The three of us had the best time doing that." After a similar experience on another project, Kurlander suggested, "'Let's build the control room like a little dub stage.' On one level, it's a control room for the main stage. On another level, when we pull the blinds down and make it dark, it's a dubbing theater. And we put theatrical monitoring behind the screen."

The monitor speakers are Meyer Acheron Studio L/C/R behind the screen, with a pair of Meyer HMS-10s for the rear surrounds and UP-4XPs for side surrounds, making it a true 7.1 room. There is also a pair of X-800C subwoofers. Says Sanders, "The low end in the room speaks really well."

Kurlander has a 40-fader Avid D-Command control surface, with a Pro Tools monitor screen on the left and the D-Command controls to the right of the faders. "When you're sitting in the middle, you can get to the transport either by leaning to the left or to the right," he explains. Behind him are racks of his favorite mic pre's: 24 British-made Raindirk Series 3 preamps, as well as eight Millennia HP-3Ds. "The Raindirks I use for bread-and-butter mics, such as spot mics, and I use the Millennia on the mains."

Behind Kurlander's console is Sanders' workspace, with a Digital Performer station and his own collection of "esoteric pre's," as Kurlander describes them. In the rear is a sofa and desk for visiting producers and directors.

The original design for the room was inadequate in isolation, which Kaufman remedied by designing a true "floating room" system. He also added a THX baffle wall, a large broadband absorber in the rear and additional ceiling treatments. And, keeping Beltrami's vision of a pleasant workplace environment intact, the control room not only has a large glass window for a full view of the studio, but another window surface opposite it to allow a view of the outside. "For a dubbing theater, it has a very high percentage of glass for the volume of the room," Kaufman explains, adding that he eliminated any anomalies the windows might cause through careful glass angle placement.

The resulting design, both for the studio and control room, has produced exceptional results. "John's been impressed with how well the scores translate to the dub theater," says Kaufman. Adds Kurlander, "The musicians all love playing in here, particularly the ones who have experienced recording in Europe. They tell us, 'We can all hear each other so clearly.'"

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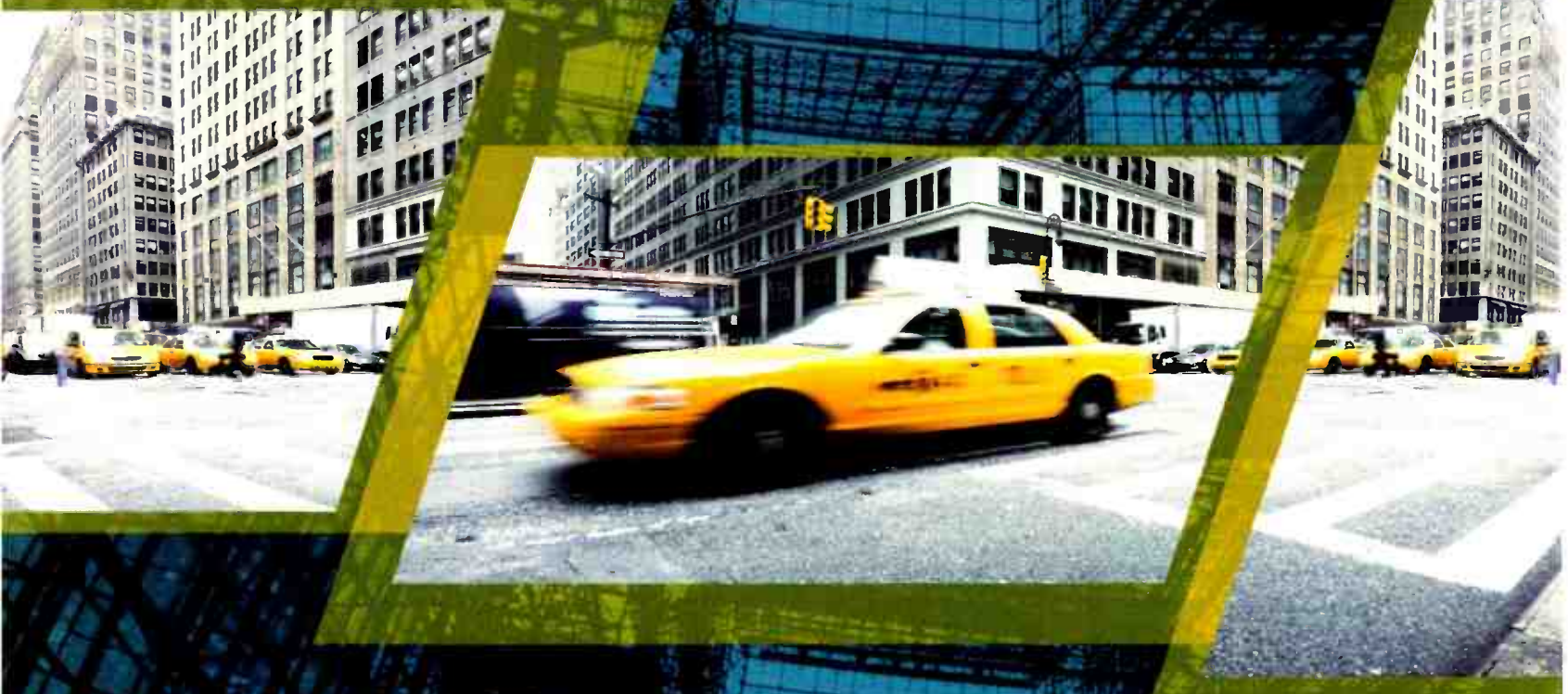

Music

CHRISTINA PERRI

Singer/Songwriter Puts Her Heart on the Line on *lovestrong*

By Blair Jackson

There have never been so many ways to have a hit. Take Christina Perri's surprise 2010 smash "Jar of Hearts." On June 29, 2010, Perri was an unknown 24-year-old singer/songwriter living in Los Angeles. Originally from the Philadelphia area, she'd knocked around L.A. for a couple of years looking for a break, moved back to Philly near the end of 2009, wrote the emotional "Jar of Hearts" during her time there and then returned to L.A., where she worked as a waitress by day and did some recording.

A friend of hers passed a tape of "Jar of Hearts" to the choreographer for *So You Think You Can Dance*, and on June 30, 2010, the song aired as accompaniment to a pair's dance routine. Within days, the song had sold nearly 50,000 digital copies, jumped onto the *Billboard* charts and developed a momentum of its own. Sales of the song doubled in a month, Perri appeared on national TV singing her song and by the end of July had inked a deal with Atlantic Records. The single went on to make it into the Top 20 in the U.S. and was a hit in several other countries, and that fall she put out an EP called *The Ocean Way Sessions*, recorded live at the iconic L.A. studio.

When it came time to record her first full album, *lovestrong*, in the winter of this year, she teamed up with producer/engineer Joe Chiccarelli and went into one of his favorite haunts, Sunset Sound in L.A., along with her band, and knocked out the record in a little more than a month. "Both the 'Jar of Hearts' recording and the EP were both so raw and done so organically—quick and real and heartfelt," Perri says from New York, on the day she was to appear on *Late Show With David Letterman*. "The feeling I got from making both of those made me know I wanted the same for *lovestrong*."

Chiccarelli adds, "When she finally had all the material for the album and they were ready to go, her management company called and said they wanted to do something that was pretty straight-ahead and band-like. She sent me over a few new

tunes and I agreed to meet with her. The only thing she was pretty certain about was she loved her band and they had a sound and they understood her and she really wanted them to be involved. When I started working with them, they had only been together a couple of months and played a couple of shows. But they seemed to be on the same page from the start, so I didn't have any qualms about working with them."

The core band on the album included multi-instrumentalist John Anderson, bassist Jenni Tarma (formerly of Kylie Minogue's band), guitarist Mike Daly and drummer Elmo Lovano. Perri plays guitar and piano, and a number of other fine players contributed to the disc. Four of the songs on the album were written by Perri; she collaborated on the rest with David Hodges (of Evanescence fame), "Jar of Hearts" co-writers Drew Lawrence and Barrett Yeretsian (who produced the two songs they were involved with, including the album version of "Jar"), Greg Kurstin and John Anderson.

Once ensconced alongside fellow engineer Graham Hope in Sunset Sound—which Chiccarelli loves for its "fat-sounding, custom-built Jensen API console, incredible mics and rooms that still sound awesome"—tracking was done mostly live. "With the exception of 'Arms,' everything was done starting out as performance-based," he says. "Once a tempo is established, I'll have the singer record a vocal take with the band and we'll overdub to that vocal take so you always have a guide vocal that is an honest, heartfelt performance." On *lovestrong,* all the lead vocals, except for "Sad Song" and a couple of unreleased tunes, were overdubbed later.

"I used a couple of different microphones," Chiccarelli says. "I figured she'd sound great on a Telefunken 251, but she really didn't because she's got such a gutsy voice and it doesn't necessarily want all that hi-fi 'air' that you sometimes like to put on female vocals. It's the grit and the soul that's more important, so a tube [Neumann] 67 was on about half the vocals, and then I also used a new mic by JZ Microphones—

their V67 is like a solid-state copy of a 67—and it really sounded good on her. It sounded like a bit more open version of a 67, and being a more modern mic, it had a bit more headroom and it didn't break up in the way a 67 does. On the really intimate songs, [the Neumann] was a little too much—a little too dirty—and that JZ mic being nice and sweet and open worked out really great." Chiccarelli also employed some of the proprietary DeMedio preamps in Sunset's old refurbished custom boards on Perri's vocals, as well as an occasional Neve 1073, a Pultec and a Retro 176. He used a Purple Audio MC76 comp for some of the background vocals.

"The last couple of weeks recording we had two rooms going on, where she would come in Studio 1 with me and do lead vocals and then, when we were done, she'd go over to Studio 3 with Graham and do background vocal overdubs while I was doing keyboards or guitar overdubs in Studio 1 with somebody else. So it was kind of trying for her at times to all of a sudden sit with me for a few hours and do a lead vocal where she had to pour her guts out, and then walk in the other room, switch to the other side of her brain and think about stacking up harmony vocals."

The album was mixed by Michael Brauer on the SSL 9000J in his new room at Electric Lady Studios in New York. "He has good taste and great ears," Chiccarelli comments. "I sent him rough mixes of everything and he's super-respectful of that. He's very musical and very good at understanding what you're trying to go for." Perri was deeply involved in the process, following the mixes remotely in real time through a combination of Nicecast and Skype.

"She is strong and vocal and not afraid to voice an opinion or stand up for what she believes in," Chiccarelli says. "I love working with artists like that. You can be up front and truthful and have an honest discussion about anything, big picture or small picture."

more online

Watch videos of Christina Perri performing live at Ocean Way at mixonline.com/september_2011

EXTREME MASTERING MAKEOVER

By Sarah Benzuly

When Extreme Music (London), the production music arm of Sony ATV, wanted to upgrade its layout and acoustics in its new mastering facility, the staff turned to White Mark, which employed its Fast Studio construction method, bringing the goal to fruition in just seven days.

White Mark marketing director David Bell explains how this can be done: "Our system uses properly constructed and individually specified acoustic modules that are assembled off-site, making them very quick and easy to install. They are ideal for rooms using free-standing monitors and in which there is no need for full isolation. We always insist that Fast Studio customers have their initial drawings and monitor setups carried out by our team of experts so that we can guarantee the viability of using the system and the level of performance that will be achieved."

White Mark's builders, Oakwood, installed six panels and created a new section of flooring that is


Nick Cooke in the new mastering facility

rigidly fixed to the concrete structure beneath and packed all remaining voids with mineral wool to control unwanted resonances.

Nick Cooke, who joined Extreme Music a year ago from De Wolfe Music, says, "The new system has made a huge difference to the acoustics of the room, to the extent that even our non-technical staff comment on how much smoother everything sounds. I'm also thrilled with the new layout [turning the room around and positioning the desk in front of the window], which has made it a much nicer place in which to spend time."

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At left: Nick Greer of Mantis recording live in the studio. Below: Byron Kelley (owner) giving a tour of the facility.

WIRE ROAD OPENS

Houston's music community came out in force to celebrate the grand opening of Wire Road Studios (wireroadstudios.com) on July 31. After sipping on drinks and snacking on Texas-style appetizers, guests took a tour of the new Russ Berger Group–designed facility, which features two recording studios and a video editing suite. During the tour, three bands—Hazy Ray, Trucker's Choice and Mantis—recorded in the live room. Evesborough Films, which works out of the Wire Road video editing suite, showcased its video production talent with a montage of its latest work, including music videos for hip-hop artists in the Wire Road family. The studio is now officially open and booking recording projects

—Sarah Benzuly

HIDEAWAY NO LONGER HIDING

Welcoming such artists as Snoop Dogg, The Matches and others for personal use, The Hideaway Studio's (Minneapolis) founder, producer/engineer/mixer Joseph Mabbott, is opening the space's doors to the music-making public. Incoming clients can take advantage of the Pro Tools|HD Accel 2 and 3 systems; monitoring through Tannoy, Yamaha and Mackie speakers; and a jam-packed mic closet and numerous effects. The studio also offers video production support.

"As an active musician and someone who developed a passion and appreciation for music at a very young age, I am always excited to be part of the creative process and pride myself in offering any assistance so my clients can achieve their creative potential and quality workmanship," says Mabbott.

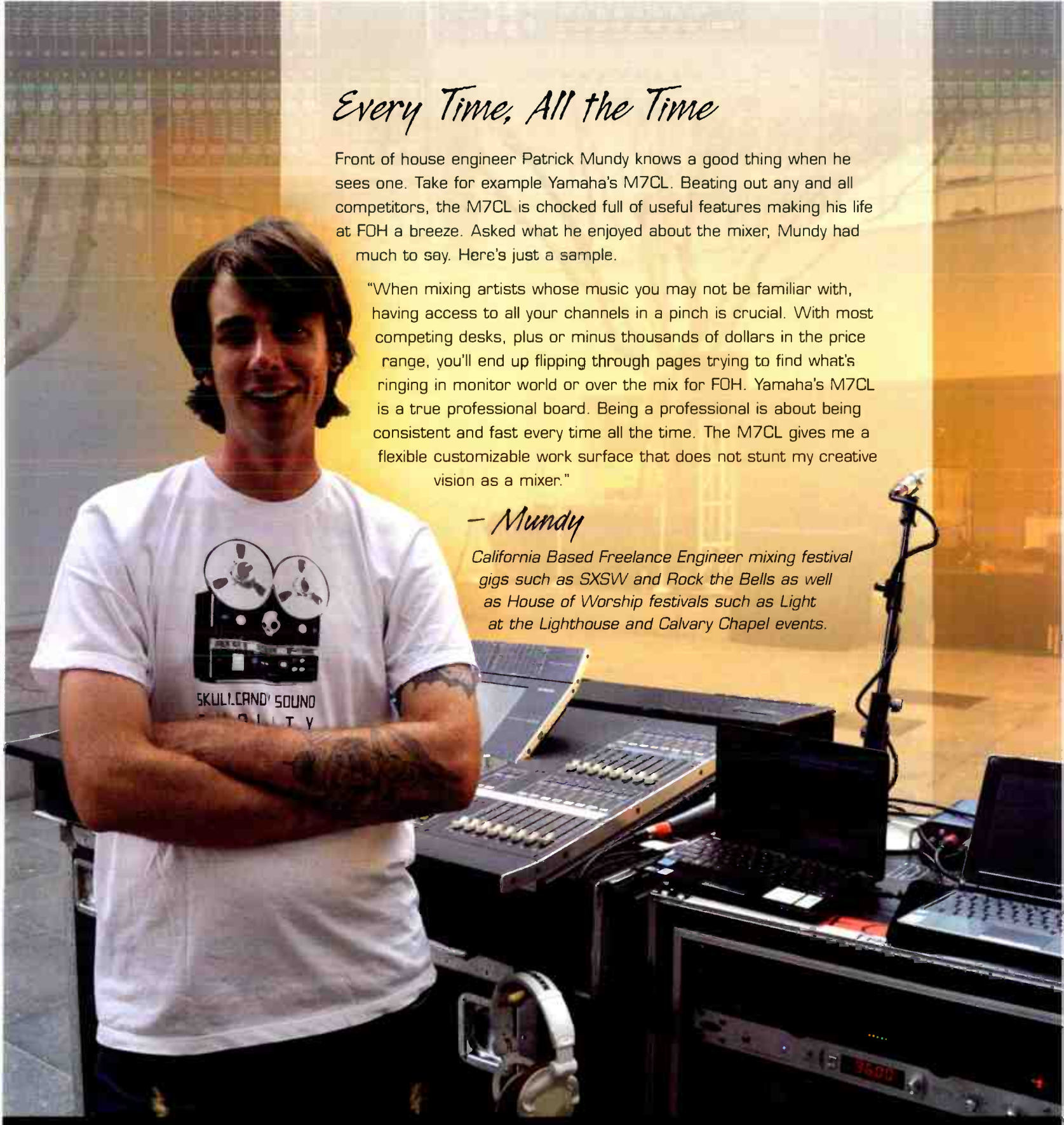
—Sarah Benzuly

HEADING NORTH GOES TO '6'

Mastering engineer Ron Skinner's Heading North Mastering (Toronto, headingnorthmastering.com) now boasts the SADiE 6 software platform. "The most important change is the ability to switch from SADiE hardware to native hardware and back again," says Skinner. "This is especially helpful when clients bring in their own I/O. SADiE 6 also gives me the ability to record on any CD burner; not being tied to my Plextor has been great and gives me more options. Clients are astounded at how quickly and accurately I can make an edit. They are used to making a change, then listening and tweaking again and again to get it just right. When I perform a tricky edit in split seconds, they have a hard time believing that it was done properly so quickly. One of my clients calls me 'speedy' whenever I do an edit. He thinks that I am really fast, but what he doesn't realize is that I have a great tool that allows for this speed and accuracy."

—Sarah Benzuly

Photo: Trevor Weeks



Every Time, All the Time

Front of house engineer Patrick Mundy knows a good thing when he sees one. Take for example Yamaha's M7CL. Beating out any and all competitors, the M7CL is chocked full of useful features making his life at FOH a breeze. Asked what he enjoyed about the mixer, Mundy had much to say. Here's just a sample.

"When mixing artists whose music you may not be familiar with, having access to all your channels in a pinch is crucial. With most competing desks, plus or minus thousands of dollars in the price range, you'll end up flipping through pages trying to find what's ringing in monitor world or over the mix for FOH. Yamaha's M7CL is a true professional board. Being a professional is about being consistent and fast every time all the time. The M7CL gives me a flexible customizable work surface that does not stunt my creative vision as a mixer."

– Mundy

California Based Freelance Engineer mixing festival gigs such as SXSW and Rock the Bells as well as House of Worship festivals such as Light at the Lighthouse and Calvary Chapel events.

Mundy offered up some of his secret sauce settings that he uses as a starting point. Check them out and download them at *www.yamahaca.com/mundy*

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Classic Tracks

By Barbara Schultz

Charlie Rich (left) and Billy Sherrill

CHARLIE RICH

"Behind Closed Doors"

Charlie Rich had made the rounds. He'd joined and left several labels by the time he signed with Epic in 1967 on the recommendation of producer/executive Billy Sherrill. He'd worked as a session musician, playing piano for Judd Phillips' Judd Records, and then for Judd's brother Sam at Sun Records and the Phillips International label, where he also wrote and recorded a few cuts of his own, including the Elvis-esque hit single "Lonely Weekends." And he'd done "Big Boss Man" for RCA/Groove and "Mohair Sam" for Smash Records.

But what characterized the first decade or so of Rich's career was not so much his successes as the difficulty he had in finding a musical home stylistically. Rich's talent for playing jazz and R&B-style piano didn't necessarily fit at the hit-making country and rock 'n' roll labels in the South at the time. He was just a bit smooth for then-current tastes. In fact, Sam Phillips was reputed to have rejected Rich on first listen, handing him a stack of Jerry Lee Lewis records and saying, "Come back when you get that *bad*."

But Rich found that musical sweet spot with Sherrill, whose "countrypolitan" production seemed to fit the singer just right.

"To me, those Charlie Rich sessions were so special," recalls Lou Bradley, who engineered and mixed the album *Behind Closed Doors*. "Particularly on the Kenny O'Dell song 'Behind Closed Doors,' all forces came together for him and for that song."

As they had done many times before, Bradley and Sherrill recorded Rich live with a band of A-list Nashville session musicians in the famed Studio B at the Quonset Hut built by legendary Nashville producer Owen Bradley and his brother, guitarist Harold Bradley. Lou Bradley (not related to Owen and Harold) says that working with Rich marked a turning point in the way Sherrill worked with singers in general, for better or worse.

"It started before this particular session, on a session when we did another Kenny O'Dell song, 'Take It on Home,'" Bradley recalls. "Charlie was a piano player, and he would sometimes sing and play. If [Hargus] 'Pig' Robbins was on that session and Charlie wanted to play and sing, Pig would move over and play Rhodes or organ, or drink a cup of coffee. But most of the time, Pig played the piano and Billy felt that Charlie ought to be by the piano anyway, so we moved him down there. There was a real good spot at the other end of the room for vocals, but I knew this was the hand I was going to be dealt."

So working with Rich inaugurated an era of Sherrill recording all vocalists beside the 7-foot Steinway in B, and this is one of the reasons Rich's sessions are so memorable for the engineer, almost 40 years later. He can still picture the band setup. (See illustration on page 24.)

"The straight side of that piano, the bass side, was pushed up against a low divider between it and the drums—Jerry Carrigan was the drummer on that session," Bradley says. "Later, we made that wall higher, but at that time it was no higher than the piano. Henry Strzelecki's [electric] bass was also next to the piano—the bass and drums were under a shed that came out—and behind the piano and by that bass was a 6-string tic-tac bass guitar; Tommy Alsup played that."

Rich stood very close to Robbins, at the front corner of the piano to Robbins' right, with backing vocalists positioned near him. The rest of the room was nearly full of guitarists: two acoustics close to the rounded end of the piano, and electric guitar and pedal steel across from them, on the opposite side of the tracking room from the drummer. Pete Drake played steel on the *Behind Closed Doors* sessions; other guitarists included Jerry Kennedy, Billy Sanford and Pete Wade.

Recording to a 16-track Ampex MM1000 machine through the custom Columbia console, Bradley had developed a standard mic setup for most of the musicians: He took the electric bass with two DIs—one off the bass and one off the amp—and blended those. One Neumann KM84 on each captured acoustic guitars, piano and stand-up bass, and a U67 was used for electric guitar. On drums (the Studio B house drum kit and a snare nicknamed "Old Red" that Carrigan brought to the sessions), Bradley used mostly Neumann mics: KM84s on snare and hi-hat, U67s overhead and KM84s on toms, plus an Electro-Voice RE-20 on kick drum.

For Rich's vocal, Bradley chose a different mic from the usual U67 or U87 he would have used on other singers he and Sherrill recorded (George

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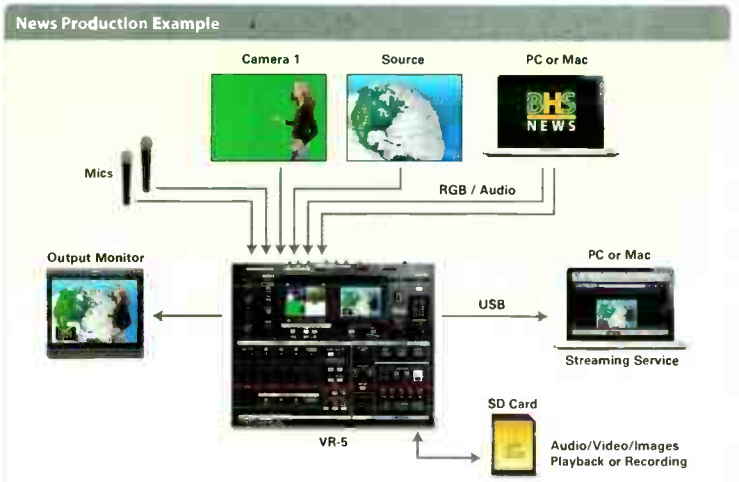

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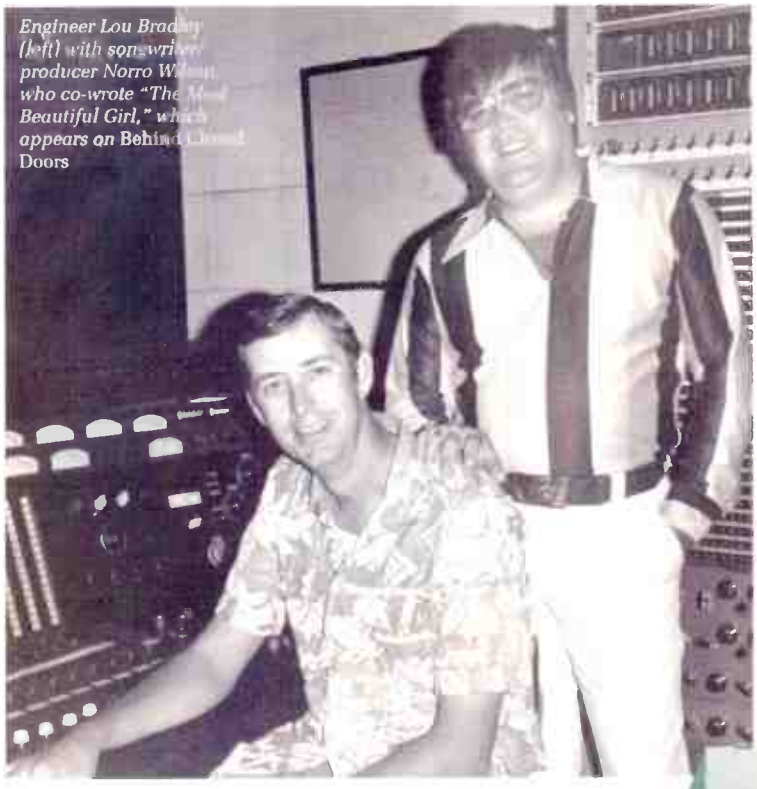

Engineer Lou Bradley (left) with songwriter/producer Norro Wilson, who co-wrote "The Most Beautiful Girl," which appears on Behind Closed Doors

Jones, Tammy Wynette, Andy Williams, Tanya Tucker, etc.). "I cut Charlie on a U49," Bradley says. "Charlie made a lot of lip sounds and mouth sounds, and a 67 or 87 or 47—that type of mic—has a sharper spike at the top end right in that range, but the 49 or the 249 had a gentler curve up at the top, and Charlie sounded so good on it. He was such a good singer anyway."

Because of Rich's position in the center of the band, Bradley says he had to develop a few tricks to deal with excessive vocal leakage: "One was to use a little slapback, very subtle sometimes, at the point that was causing the problem," he explains. "And sometimes I put the slapback on something other than the vocal, and it would cause a little distraction; you had to make something happen in that empty space where you had the leakage from the vocal, either in the piano or the guitars or background. But most of the time we could deal with it. If you listen real close to the old record, you'll hear [that leakage] just a little, but it didn't hurt that record at all."

Bradley also has great memories of the musicianship on those sessions: "Bill Sanford is such a great player," he says. "He's still working, and he's always had that great talent as far as what a session musician should do when they don't have the ball. This isn't a guitar song with guitar leads or predominant guitar parts. But Billy [Sanford] would fool around and find out what he could do to contribute so that if you turned his track off, you'd wonder where the record went. And I think this record is a good example of that. He's in there, he plays a little run every once in a while, a dip in the bridge—just real simple. He could play great leads, but I was always impressed with what he'd do when the ball wasn't in his court because this song was predominantly Robbins on the piano.

"I asked Pig the other day," Bradley continues, "I said, 'I'm going to be interviewed about "Behind Closed Doors"; you got anything to add?' He said, 'I don't know. I was a little nervous and scared with Charlie, who was such a great piano player, standing right there beside me singing in my ear.' But Pig said, 'I tried to *be* me and *think* a little bit like Charlie, because Charlie had a style that leaned toward blues.' I think Pig set the mark real high with what he played on this record."

Like all of Sherrill's countrypolitan records, "Behind Closed Doors" included strings that helped create the drama in the arrangement without overpowering the song. Bradley recorded an 11-piece string section (violins, violas and celli) in B. "Bill McElhiney wrote those strings," Bradley says. "Billy would get together with the arranger he'd use, and he'd hum or play lines he wanted the strings to play. You know, Billy was a good piano player and McElhiney knew what he wanted.

"I'd use two overheads on the violins—from time to time, either 47s, 67s or 49s. And I liked the KM86; it looked like the KM84, but it had the capsule on the

end with switchable pattern and the sound of that mic was similar to the 49. A lot of times for strings, you'd get a real warm sound, and if they did a gliss up, 47s or 67s had that spike on top that would make them jump out more than they should have. But I'd use a 67 or 87-type mic on the violas, and stereo-mike the two celli with KM84s fairly close, in an 'X' position so they'd add up, and I might put a little limiting on the celli. We had some good UA limiters and some Teletronix ones, too."

McElhiney's string arrangement was one of two elements that were overdubbed onto this mostly live track. The other was Rich's vocal on a rewritten last verse. Bradley says that in O'Dell's original song, the last verse was originally "kind of mild. They went behind those closed doors and you thought they might've held hands." Sherrill reworked that last verse to give the song a little more heat, and as Bradley says, "The revamped lyric was more to the point, and it made a good song better and stronger."

Thanks to the way "all forces came together," as Bradley puts it, "Behind Closed Doors" rose to Number One on *Billboard*'s Hot Country Singles chart in 1973 and reached Number 15 on the Hot 100. The crossover hit also earned Song of the Year and Single of the Year Awards from the Country Music Association and the Academy of Country Music, and Rich received a Grammy for Best Male Country Vocal Performance. "Behind Closed Doors" and "Most Beautiful Girl in the World," also on the album, continued to be signature songs for Rich whenever he performed, until he passed away in 1995.

Bradley still lives in Nashville, but he flies out to California a few times a year to record Merle Haggard, who's now his main client. His memories of Studio B and working with Sherrill—who's now retired—are fond as well as vivid: "What was so great about Billy was he knew how to make a band play to work with that singer. My job as the engineer was just to capture that. A lot of people thought Billy used dynamics just to use dynamics, but he was really doing the dynamics to make the song come across. I think he was one of the best at cutting country ballads that ever was."

MUSIC EVENTS IN 1973

January 13:
Aerosmith make their debut with *Aerosmith*.

March 1:
Pink Floyd releases *The Dark Side of the Moon*.

September 23:
The Roxy Theatre opens in West Hollywood.

October 17:
The 1973 oil crisis begins, causing shortages of the vinyl needed to manufacture records.

October 19:
The Who release *Quadrophenia*.

Date Unknown:
New York club CBGB opens.

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PINK MARTINI

Packed Stage Keeps Engineer on Toes

By Sarah Benzuly

Mixing for a 12-piece band can be challenging in itself—especially one that smoothly transitions from Cuban jazz to classical chamber music—but when Pink Martini throws in a full symphony orchestra, front-of-house engineer Pete Plympton's board becomes quite full. Fortunately, Plympton isn't about to break a sweat, having been one of the studio engineers on the band's first album back in 1997 and having done their live sound ever since. *Mix* caught up with the crew at a July performance at San Francisco Davies Symphony Hall with the San Francisco Symphony.

The tour is not carrying full production; at the S.F. show, local sound company Sound on Stage augmented what was installed at the venue, including a Yamaha PM5D board. Keeping FOH ground control at a slimmed-down size, Plympton uses all onboard effects; when working on an Avid Profile, he employs Waves PS-22 on guitars, McDSP 2000 on brass and vocals, TC Electronic VSS3 reverb and a Tube-Tech compressor on the "unruly things," he says. "I do love the sound and looks of a Midas XL4, but I would be thrilled to never use analog again."

The house P.A. is L-Acoustics, with six V-DOSCs on top of a dV-DOSC sub on stage-left and -right. There are also two Sound on Stage MS28 front-fills, a house center cluster of three MSL3s with three UPS underhangs and, eight Meyer UPM2 to cover the second balcony. The last zone is a pair of Meyer MSL2s to cover rear-fill. "Like most symphony halls," Plympton says, "there are lots of zones, so I just walk around, listen and talk to the house guy [Hal Soogin at the S.F. show] and then voice the system. Nothing fancy; there is never enough time. My preference of a P.A. is firstly, a good systems engineer—very important. After that, I like d&b and Meyer; I think I have used everything else and they all seem to be good."

With numerous years with the band under his belt, Plympton has his miking scheme down pat, but has switched up some of the mics, including a DPA 4081 on cello, "which is great. I'm trying a K&K pickup to isolate and enhance the low end of the piano alongside the trusty DPA 4021s on an ORTF holder; of course, the bass amp blows right into the piano. I'm also using an Audio-Technica AE3000 for electric guitars; AE5400 for timbale, overheads and vocals; and Beyer M88 for bass.

"I'm always trying to keep it [sounding] as natural

and organic as possible," Plympton says of his mix. "Sad, but sometimes the acoustics [in the venue] are so bad, I end up doing damage control." To counteract the acoustic anomalies, Plympton will use or hang as many soft, good curtains as possible. "I try to lower the stage volume and use less reinforcement, or use a more active mix to bring vocals and instruments out of the muck."

In addition to that "damage control," Plympton also "schools" each house monitor engineer with the Pink Martini sound. "I tell the house engineer to sit back and enjoy the show. I will tune and set the vocals in the monitors. Then [backline/stage manager] Will Reischman helps them with any other minor additions or changes. We probably never will have our own monitor engineer. The house monitor guys are great, and Will knows all the changes.

"It is pretty hard to mix it to hear everything all the time, so I just try to spotlight instruments or sections while keeping the strings and vocals clear," Plympton says of his overall direction in the mix. "Sometimes, they mix themselves well. It really is a challenging show."

BACKSTAGE PASS

Sound Company: Sound on Stage (at S.F. show)
FOH Engineer: Pete Plympton
Monitor Engineer: house-provided
P.A.: house-provided
FOH Console: house-provided (Yamaha PM5D at S.F. show)
Monitor Console: house-provided

Front-of-house engineer Pete Plympton at the Yamaha PM5D console, supplied by Sound on Stage

iLIVE THRIVES AT SOUNDCHECK AUSTIN

Rehearsal facility Soundcheck Austin (soundcheckaustin.com; sister company to Soundcheck Nashville, where the Mix Nashville event is being held September 23-24) installed Allen & Heath iLive-T112 digital mixing systems (one for each of its six rooms) and an iLive-T80, providing full digital mixing setups. Operations manager Greg Morton selected the boards and is responsible for fulfilling the needs of incoming clients, including, most recently, Lauryn Hill and Edie Brickell.

Michael Palmer (left) of Allen & Heath distributor American Music & Sound and Soundcheck Austin operations manager Greg Morton

"I really like the design of the MixRack, with inputs, outputs and DSP all together in one place," Morton says. "Any input, any output, can be anything, anywhere, at any time. You can lay the console out pretty much any way you want, and that kind of flexibility is really important with all the different artists we have coming through. A few minutes of reprogramming, and we can put those inputs wherever the client prefers. For touring engineers, a console is a console; they really just need some basics. For instance, Edie Brickell's engineer had never used an iLive before. I sat down with him for all of 15 minutes, gave him a basic rundown of the console, and he was off and running, labeling channels, setting up comps and gates, and getting set up. Very easy, and he ended up being really happy with it. The same thing happened with Lauryn Hill's engineer."

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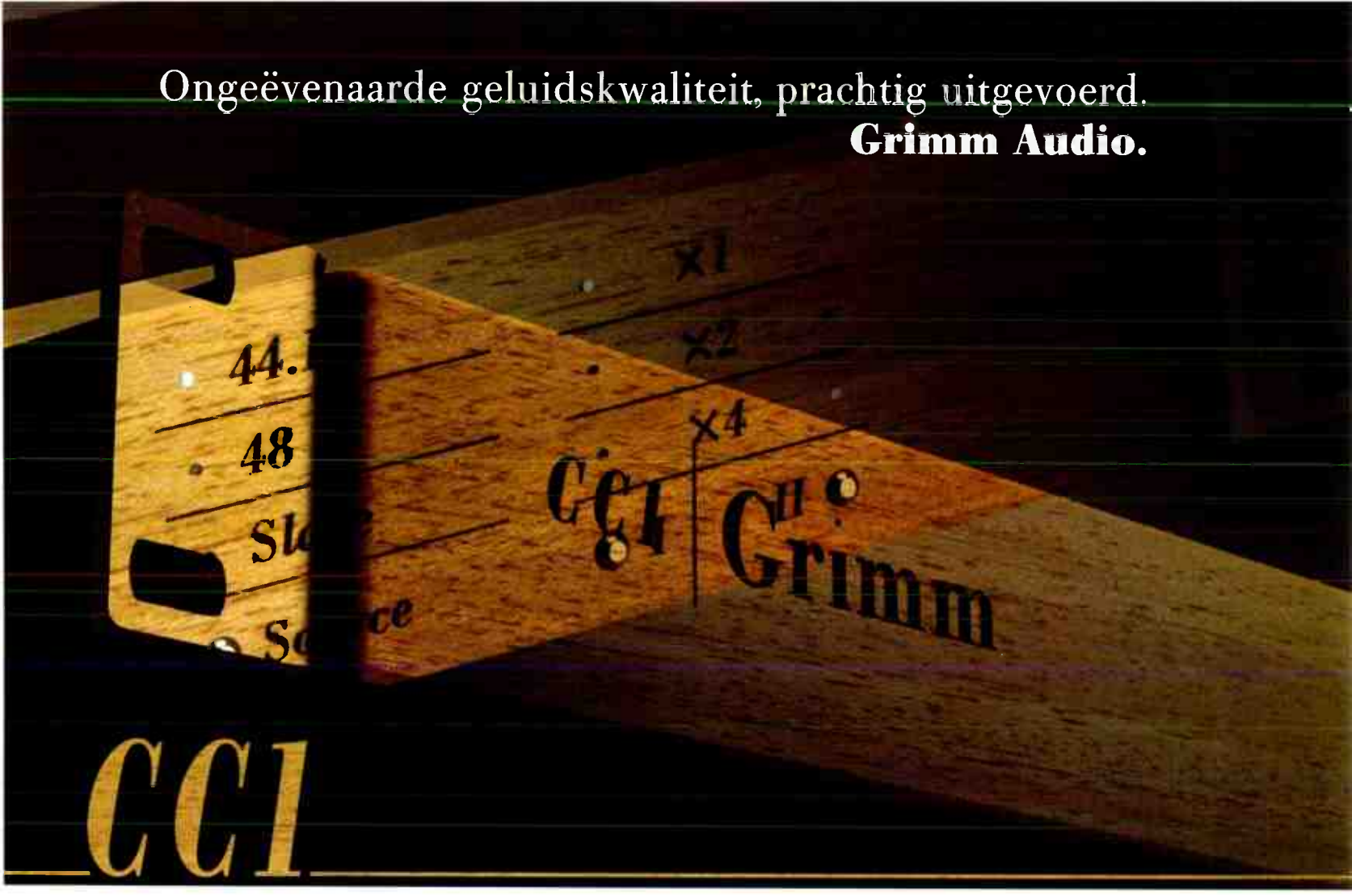

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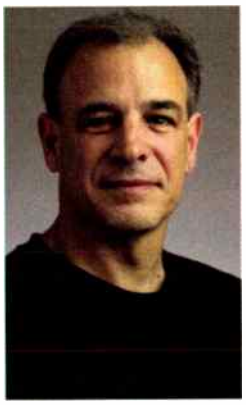
THE FRAY FRONT-OF-HOUSE ENGINEER JON LEMON

FIXIT On the [opening dates for] U2 shows, the main end of the P.A. had two lefts and two rights—flown side by side—so one system was doing all the vocals and all the guitars, and the outside system was doing all the drums, bass, keyboards, etc. Normally, on my left and right I would have a Waves hardware piece, the BCL—the one with the Renaissance Compressor, a Maxx Bass and an L2 Ultramaximizer. I added another stereo bus for all of the shows we were doing with them and then it was really easy. I was able to drag up another rack and then copied and pasted my original three plug-ins—the Renaissance Compressor, Maxx Bass and L2 Ultramaximizer—into another rack and then instantly I had my settings available on two masters. That was a very easy way to handle having another output in a complicated system.



MOVING ON UP

Sensaphonics founder and audiologist Michael Santucci is the new lead audiology advisor to Hearing Health Science Inc. (hearinghealthscience.com), a start-up company specializing in hearing research and therapy. HHS is set to launch Soundbites™, a patented nutraceutical supplement that has shown clinical promise in preventing noise-induced hearing loss. Used with hearing protection, its inventors claim Soundbites has the potential to reduce hearing loss by up to 50 percent.

BLUE NOTE UPGRADES

Due to the location of jazz club Blue Note's stage, house engineers must contend with three mixing zones to compensate for the position of the instruments onstage. Petrix owner Amit Peleg, who was brought in to handle the system upgrade, knew that he had to go with DSP-based amplifiers, selecting Yamaha TXn amps (with custom DPS settings) and two dbx DriveRack 4820s. In addition, the club upgraded its Yamaha M7CL digital consoles to Version 3 software (allowing for multitrack recording) and StageMix. The entire sound system is digital; the only points of conversion are A/D at the stage box input and back, and D/A at the output of the amplifiers. Everything in between is digital either via EtherSound or AES/EBU. The system is completely networked for both signal and control.

"A challenge equally problematic to the technical difficulties presented by the room was a logistical one," Peleg says. "Other than a couple of days after September 11, 2001, the Blue Note never closed its doors over its 30-year existence. They were not going to make an exception for us and close for the installation since a show takes place every night, 365 days a year. We had to complete the installation without affecting the normal operations of the venue. We installed the new sound system to be run simultaneously, side-by-side with the old system, until it was time to make the final switch, all in one night, which is when we swapped out the speakers. But it all worked according to plan, and we were ready for musician Bill Evans to 'dust off' the new system.'"

BALTIMORE OPENS NEW VENUE

Baltimore SoundStage (BaltimoreSoundStage.com), a new performance space, will open at 124 Market Place in Baltimore's inner harbor on Labor Day weekend. The new venue is as collaboration between New York City's HighLine Ballroom and the management team responsible for opening Baltimore's Bourbon Street live music venue. The room will have a scalable capacity of 500 or 1,000 for standing room shows and 500 for seated shows.

Front-of-house engineer Paul Dorin was key in selecting the top-of-the-line audio gear, which includes an Avid VENUE SC48 board at FOH, a Yamaha 48-channel M7CL at monitors and a JBL main array (eight VRX 932LA, six SRX 728 subs). Four Electro-Voice Delta Max on four bi-amped Crown XTI 4000s handle outfill/delays, while a JBL VRX 932LA is for front-fill. Monitoring is via Crown and JBL.

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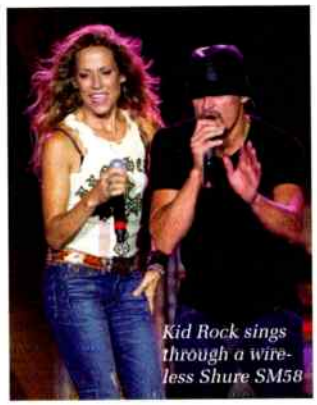
Photos and Text by Steve Jennings

KID ROCK



Kid Rock sings through a wireless Shure SM58

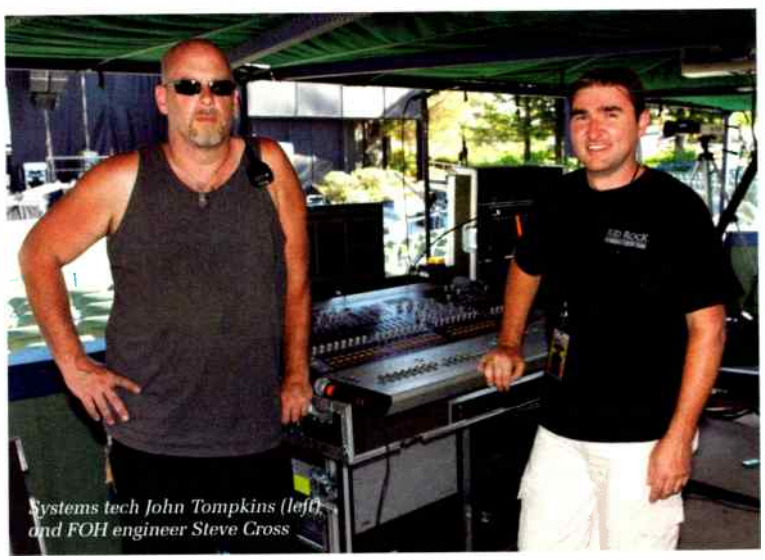
Kid Rock may have stormed onto the music scene in the late '90s as a rapper with a Southern edge, but during the intervening years, he's added rock, country, gospel and many other nuances to his performance. Touring in support of his latest, *Born Free*, Kid Rock (with a couple of songs with Sheryl Crow) rocked the house at the Sleep Train Amphitheater (Wheatland, Calif.), where *Mix* caught up with the Sound Image–provided tour.

When front-of-house engineer Steve Cross joined the tour in the fall of 2007, it was an extended promo run hitting clubs and theaters. Cross mans an Avid Profile, citing its size as a primary reason in choosing the desk. "From day one, it was clear that I had made a good choice," Cross says. "Kid Rock's Twisted Brown Trucker band grew from a 5-piece to a 10-piece in the first two days of rehearsal. I currently run 81 input channels and a host of effects and never have to reach more than arm's length. It allows me to concentrate on the music mix—not the technical side of what's in front of me."

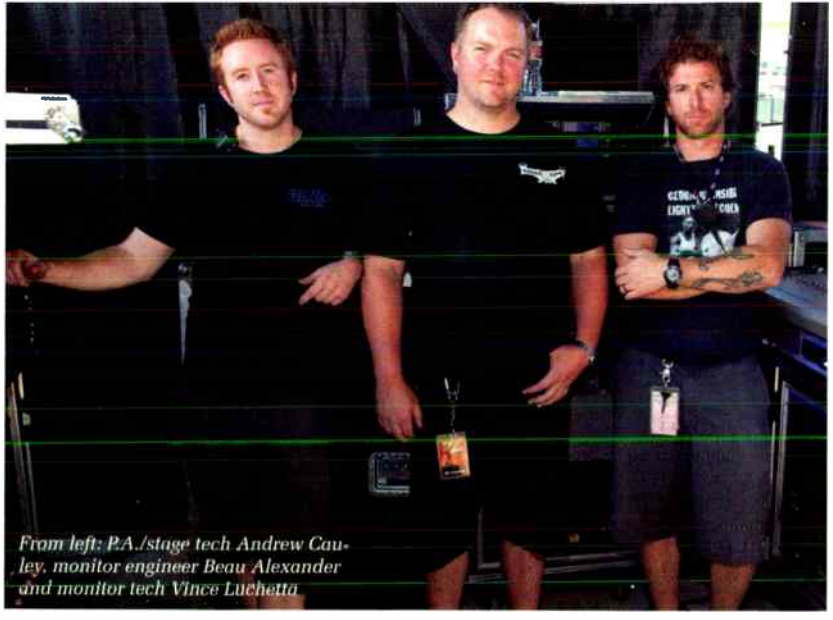
Onboard effects include Avid ReVibe for all reverbs. "It is versatile enough for all my needs in this show. With the exception of one 'effect' verb, I try to keep all the verbs for the vocals and instruments very similar in type and decay. If I move from a large hall to a plate verb, I make that change for all verbs and then tailor the times to get them to layer nicely with each other. Another plug-in I use a lot is the Crane Song Phoenix. It has a nice way of bringing things forward in a mix without simply turning them up. Other than that, there are lots of delay cues that use the Avid delay. I use channel compression where needed, but no compressor plug-ins at all."

Cross is also doing redundant recording, using Pro Tools of each show with stem mixes and audience mics; a DVD has the stereo and audience feed, with all stems and feeds coming from the Profile.

"Kid Rock is a bit of an oddity for a mixer in that he is not any one thing: metal, rap, rock, country, bluegrass, gospel. He expects his country songs to sound country. Smooth rhythm section with a twangy lead. And his hip-hop stuff, he wants to punch you in the face and rumble your seat. I do my best to constantly evolve the mix as he arranges the show. The show is constantly being re-tooled, re-arranged and mashed up with every song that ever inspired him. This mix is the most demanding I have had in my career."



Systems tech John Tompkins (left) and FOH engineer Steve Cross



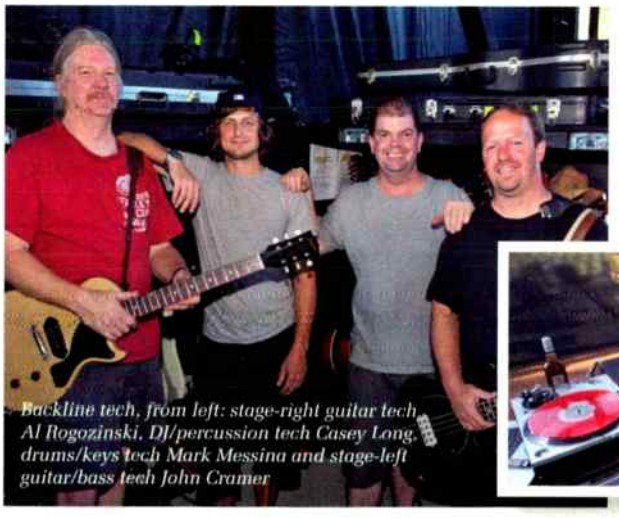
From left: P.A./stage tech Andrew Cauley, monitor engineer Beau Alexander and monitor tech Vince Luchetta

Monitor engineer Beau Alexander is also on an Avid Profile. "Using this console makes my footprint very minimal," Alexander says. "I'm not using any plug-ins; they would prefer to hear everything dry and not effected." Comps and gates are also onboard. Alexander reports that the radio systems are Shure U4RD for wireless mics, saxophonist Dave McMurray's Shure clip-on mic attached to an instrument wireless pack and for all wireless piano channels. IEMs are eight channels of Shure 900 systems. Onstage wedges are Sound Image Double 12s.

Stefanie Eulinberg's drum kit is miked with a Shure SM57 on snare top/bottom; Audix D6 in the kick; and AKG 414s for hi-hat, overheads, ride cymbal, chimes, cowbells and gong. Her vocal mic is a Shure Beta 57, "well-suited for rejecting drums and capturing a good female vocal sound," says drums/keys tech Mark Messina.

Keyboardist Jimmie Bones plays a Kurzweil SP-2 and PC-3 (pictured), Triton Extreme and Hammond B3. Kid Rock's grand piano is wireless to help move it quickly on- and offstage. "It is an inserted keyboard with a car battery and two Shure wireless packs," explains drums/keys tech Mark Messina.

Lead guitarist Marlon Young's amps include a Fender Twin and Deluxe, and a Marshall Tremolo 50-watt All amps are miked with a Shure KMS32: one on the Twin, one on the Deluxe and a stereo pair on the 4x12 Marshall cab (pictured). According to guitar tech Al Rogozinski, Young's foot pedalboard comprises a dual-amp switcher, MXR Carbon Copy and Phase 90, Mercury 3 Harmonic Boost, Boss distortion and tuner, Ibanez Tube Screamer, Fulltone OCD and Clyne.



Backline tech, from left: stage-right guitar tech Al Rogozinski, DJ/percussion tech Casey Long, drums/keys tech Mark Messina and stage-left guitar/bass tech John Cramer

According to DJ/percussion tech Casey Long, DJ Freddie "Paradime" Beauregard's equipment comprises a Macbook Pro with Serato, two Technics SL1200k5, a Rane TTM 57SL mixer, MPC 4000, instant replay, Pioneer DVJ 1000, APC Pro1500, and a shaker and tambourine.

Percussionist Larry Frantangelo's instruments are miked with Shure SM98s and AKG 414s.

Stage-left guitarist Jason Krause uses custom-made Diamond 100W Phantom amps and Diamond cabinets. "We use a stereo setup on Jason's rhythm guitars by putting two KSM32s on him and spreading them wide," says guitar/bass tech John Cromer. "It gives us a huge rhythm bed to mix with." Bassist Aaron Julison uses Ashdown Evo III 900W amps and Ashdown cabinets, miked with Audio-Technica AE2500s.

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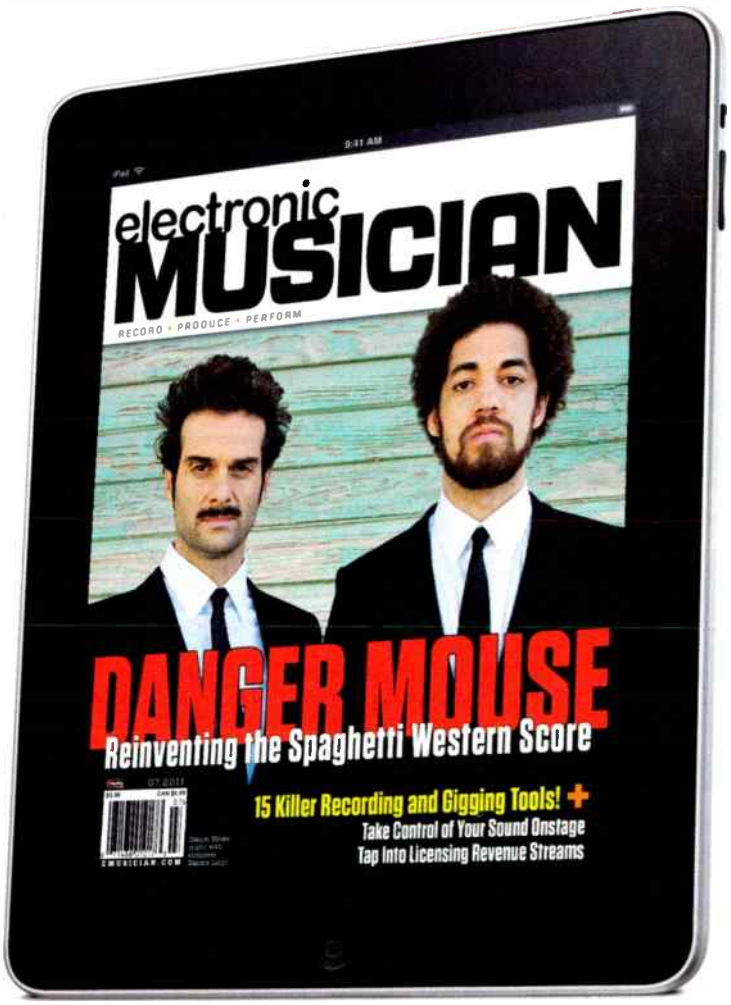

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Studio 1 has an 80-fader AMS Neve Gemini console and 7.1 Meyer EXP monitoring.

THE MAGIC OF DE LANE LEA

A Music Mixer's Take on Bond, Potter and a Meyer Sound Makeover

By Wes Maebe

I think that at some point every young aspiring sound engineer dreams of being involved with film. All those loud explosions, fantastic string arrangements, fast edits and, most of all, ginormous mixing desks. So when I moved to London as a student in the early 1990s, I walked past De Lane Lea dreaming of working on the next *Bond* movie.

One of London's top post-production facilities, De Lane Lea was founded in the late 1940s by a French intelligence attaché for the British government, Major De Lane Lea. Initially established to dub English films into French, the studio quickly expanded in the '60s and '70s. Technical growth and development in radio and television secured more work in the advertising sector, and there was expansion into music, too, with many of the giants—Pink Floyd, The Beatles and Queen, to name a few—recording here, as well. (Fans should note that these sessions took place at De Lane Lea's former Wembley and Kingsway sites.)

Today it's easy to miss the six-room studio's entrance, located unobtrusively in the heart of London's SoHo district. Once you've signed in and been led to the bar area, it opens up into a warren of offices, corridors and rooms. The walls are lined with posters of well-known films and signed photos of actors most of us are used to seeing 30 feet tall on the big screen. Suzanne Facenfield, scheduling manager and energetic ray of sunshine, greeted me and made me feel like part of the family in an instant; I then sat down to chat with general manager Mike King and their two first-call mixers, Chris Burdon and Doug Cooper.

Studio 2 has a 24-fader AMS Neve Gemini and 7.1 Meyer EXP monitoring.

CATASTROPHE BECOMES OPPORTUNITY

Work on *Fantastic Mr. Fox* was well under way in the summer of 2009 when De Lane Lea's neighboring building caught fire and the resulting smoke and water damage forced a temporary relocation of most of the operations. So what did the DLL crew do? They decided this was the perfect time to rebuild, upgrade and install a brand-new speaker system. The studios that benefited the most from the rebuild are 1, 2 and 3, according to the principals. They had started to feel a tad tired, so it was the perfect time to spruce things up. The rooms now feel airy and pleasant, with an instant feel of comfort; the "I can do some great work in here" factor is extremely high.

Most of this positive vibe should be credited to the close collaboration between Meyer Sound, Munro Acoustics and ace consultant Dennis Leonard. New acoustic treatments dealt with the slightly uneven bass response of the original Studio 1. This meant increasing the bass reverberation slightly and evening out that end of the spectrum, resulting in a bigger and fatter sound. New diffusers were installed to help glue the surrounds together. It doesn't matter where you sit in the room, you'll always get a good sonic perspective. With the choice of monitoring system, it became clear that the De Lane Lea team is not afraid of making bold decisions and staying ahead of the curve.

Meyer Sound is not usually thought of in film sound monitoring, but the company has obviously made a first-class foray into the industry. I couldn't help but be excited to hear the rooms, having experienced Meyers several times in a front-of-house capacity and marveling at the system's power, even sound and clarity. Plus, the Skywalker folks love them—need we say more?!

The Meyer Sound EXP monitoring systems in the three studios include Acheron 80s, Acheron LFs, Acheron Studios, HMS-10 full-range two-way loudspeakers for the surrounds, X-800 subwoofers, the Galileo loudspeaker-management system and SIM3, Meyer's Source Independent Measurement system. Although the choice to switch to Meyer for post was unprecedented in the UK, King and all at De Lane Lea were convinced it was the right one to make. Translation to other environments has not been an issue, and the new acoustics in combination with the Meyers has resulted in a livelier and more natural sound. This is being confirmed daily by clients, directors and mixers alike.

TOOLS OF THE TRADE

At the heart of each room is an AMS-Neve DFC Gemini console, with Studio 1 housing the largest of the three fitted with a very cool Soundmaster Ion Virpad. De Lane Lea runs on Pro Tools, which allows for the DFCs to be supplemented with sidecar Avid D-Commands if required. This uniform configuration makes it extremely easy to move projects from room to room; a project stays in the same format and will be laid out on the same consoles, which means better budget management as a client moves from smaller room to massive dub stage.

All the rooms are equipped with at least one Lexicon 960L and a TC System 6000, which again emphasizes the studio interchangeability. At the time of my visit, *Harry Potter 7* was in Studio 1 making use of five 960Ls!

Sitting in Studio 3 and chatting with mixers Chris Burdon and Doug Cooper, whose credits include *X-Men First Class*, *Gnomeo & Juliet*, *Scott Pilgrim vs. the World*, *KickAss*, *10,000 B.C.*, *Children of Men* and *United 93*, among countless others, it becomes immediately clear that De Lane Lea will do anything to accommodate clients.

For example, the crew has gone old-school in an effort to make mixing easier, faster and more compatible with the other mix rooms. They've been using MIDI program changes for automation and switching within the effects processors. As all the automation data is stored within the DAW's MIDI section, you can simply cut all of the MIDI along with the picture and all automation is locked.

Cooper also explained that the studio sometimes gets so busy that he has to disappear into the preview theater with a small Pro Tools rig and an MC Mix so as not to interrupt his workflow. Incidentally, this 37-seat theater is also going to get the De Lane Lea makeover, allowing for these impromptu sessions to take place more often.

I'm a music engineer, so my visit to De Lane Lea was a fascinating insight into the world of senior-league, Hollywood-style post-production. In challenging times for their industry, the De Lane Lea team's willingness to adapt, along with its top-flight facilities, flexibility and outstanding client care, look set to keep them at the forefront of UK post-production for many years to come.

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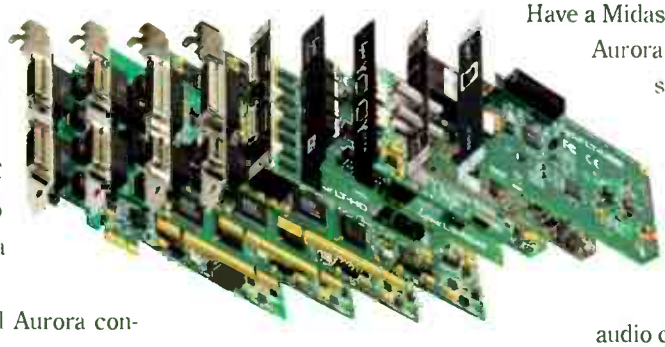

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Lynx STUDIO TECHNOLOGY

READY FOR FOOTBALL!

When Full Sail University launched its partnership with ESPN in late 2010, the goal was to get students involved in real-world production—audio, video, gaming, motion graphics; everything that goes into a professional program. The relationship has paid dividends right away, as 56 students—along with a jersey-wearing crowd from the community at large—took part in a multi-day shoot in mid-July for the opening video sequence of Hank Williams Jr.'s hit song "All My Rowdy Friends Are Coming Over Monday Night" for ESPN Monday Night Football.

The hi-def production took place at Full Sail University's "Full Sail Live" performance venue, with selected students assisted by ESPN and associated production crew professionals. "Over the years, we have produced the show open for *Monday Night Football* at various locations," says Bob Toms, VP, production enhancements & interactive TV, ESPN. "While creating this year's opening, we found Full Sail's facilities to be beyond our initial expectations, and we were truly impressed by both the enthusiasm and capabilities of the Full Sail students who volunteered and were selected to work on the project."

Williams Jr.'s vocal and guitar were recorded earlier at Quad Studios in Nashville. Prior to that, ESPN music producer Edd Kalehoff and lead sound engineer/mixer Brian McGee recorded the band and the House Jacks vocals at Kalehoff Studios in New Rochelle, N.Y. The final mix-to-picture will take place weekly (the lyrics change to match the teams on the field that week) at Kalehoff's studio.

"When we launched our relationship with ESPN, we knew our students would have the opportunity to take part in large- and small-scale projects that would impact national and global audiences," says Erik Noteboom, Full Sail VP of education operations. "Hosting the production for ESPN's *Monday Night Football* allows our students to participate in sports television history. We are humbled to play a part in such an iconic production."

FILM MIXERS ON THE MOVE

From left: Michael Keller, Scott Millan and Greg P. Russell

It was a summer of musical chairs in Hollywood as a couple of high-end post facilities announced the hiring of A-list recording mixers to their teams. In July, Technicolor announced the hiring of Scott Millan and Greg P. Russell as its theatrical sound mixing duo for the company's new sound mixing stages located at Paramount Studios. Meanwhile, Michael Keller has returned to leading independent sound company Todd-AO in Hollywood, and will team with re-recording mixer Mike Prestwood Smith. Keller has mixed more than 75 films, including Oliver Stone's *Wall Street: Money Never Sleeps*, Roland Emmerich's 2012 and Quentin Tarantino's *Death Proof*. Keller and Prestwood Smith are currently mixing *Abduction* for director John Singleton and Lionsgate.

Millan and Russell have both amassed impressive credits as re-recording mixers during the past three decades, with a combined 22 career Oscar nominations and four wins for Millan. Millan and Russell recently teamed up to handle re-recording on *Salt*, for which they received Oscar nominations.

While Russell and Millan will be moving over to Hollywood from the West side, the move marks a homecoming for Keller, who previously worked at Todd-AO in the 1990s and began his career in Hollywood at the company's affiliate, Soundelux.

ABBOTT MIXES 'X FACTOR' ON YAMAHA DM2000

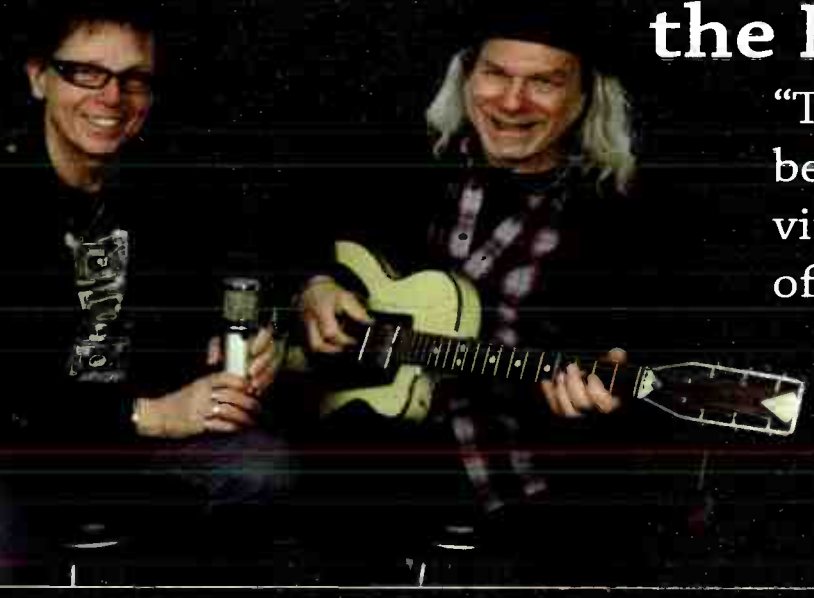
The X Factor will make its U.S. debut on Fox September 21, and Michael Abbott, owner of All Ears Inc., has chosen a Yamaha DM2000 for the broadcast mix of the audition phase of the production taped in Los Angeles, Dallas, Newark, New Jersey, Miami and Seattle. Sweetwater Video/NEP provided the audio/video facilities. The Simon Cowell–created show went across America to find the next global superstar or group who will ultimately win a $5 million Sony Music recording deal.

"The Yamaha DM2000 was chosen because *The X Factor* project required an audio console with a small physical footprint but with a large amount of audio I/O," says Abbott. "We used six MADI slot cards that were fed into a Euphonix Studio Hub, then routed out to nine MADI streams and converted to AES via RME MADI/AES converters.

"The GUI of the Yamaha DM2000 console allows for control of four AD8HR preamps, allowing for 32 external mic preamp channels in addition to the onboard 24 mic inputs," Abbott adds. "Also, the input/output patch library provides a variety of I/O mapping presets for the various stages of *The X Factor* production, as the input sources changed during the six weeks of production. The console's Group Control function allowed for control of faders located on the lower four layers of the console surface."

Recording devices for *The X Factor* include two Tascam X48 recorders and 11 Sony XD 1500 video recorders via AES.

Ray Kennedy, Buddy Miller and the Miktek™ CV4.



"The CV4 sounds better than all my vintage mics with none of the headaches."

Buddy Miller
Producer, Engineer and Guitarist
Robert Plant's Band of Joy, John Fogerty, The Majestic Silver Strings, Patty Griffin Steve Earle, Emmylou Harris Jimmie Dale Gilmore, Willie Nelson.

"The CV4 has the soul of a vintage classic. Deeply smooth yet crisp and clear with sweet harmonic textures. There's a feeling that there's no mic in the way of the vocal being recorded, total accuracy and full emotional impact."

Ray Kennedy
Grammy Award Wining Producer and Engineer
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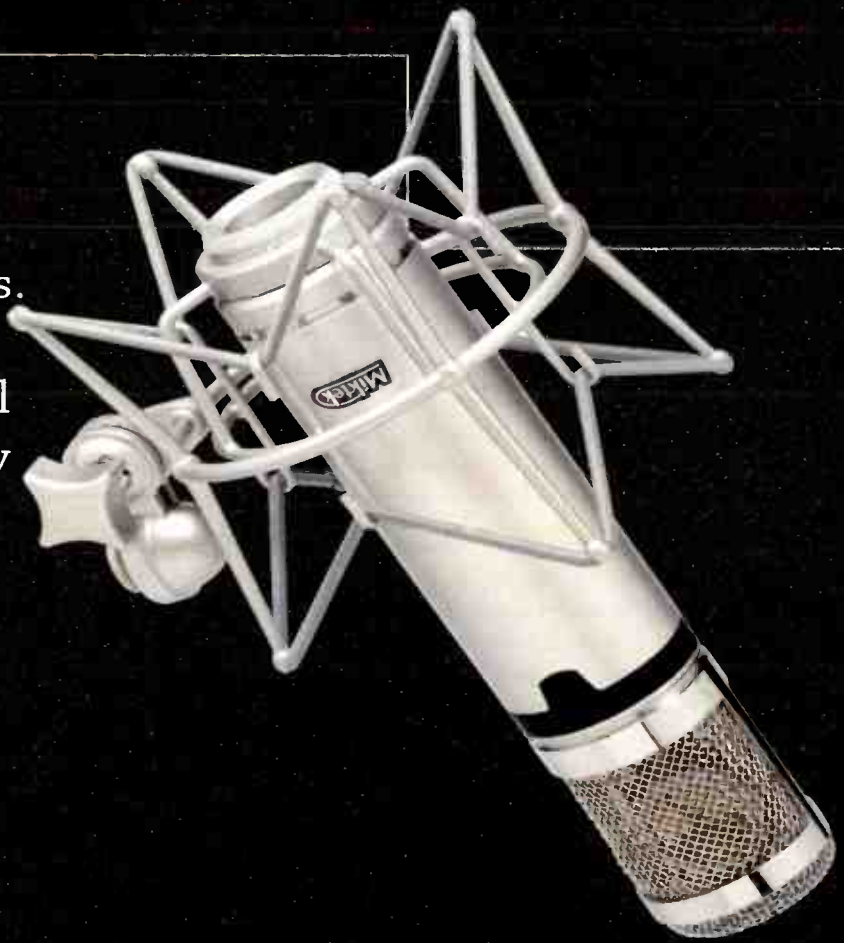

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AN INSIDE LOOK AT THE CREATION OF MOVIE SOUND EFFECTS

By Mike Levine

Cars! Weapons! Machines!

From the clang of a sword to the roar of a monster to the rev of a car engine, Hollywood directors depend on sound designers and sound effects editors to craft the sonic elements that help add impact and interest, set the mood or ratchet up the terror of a scene. Working with Foley artists, re-recording mixers, composers and others, the creators of film sound effects have challenging jobs that require imagination, creativity and technical abilities, not to mention a great ear.

There are two primary job titles for those who create and edit effects—sound designer and sound effects editor—though the differences between the two job descriptions have become blurred over time, and both are essentially involved in effects creation.

To learn more about the techniques used to create effects for films, *Mix* spoke with three pros at Soundelux (Hollywood), all with sound designer and sound effects editor credits to their name. Harry Cohen has worked on such titles as *Inglourious Basterds*, *Star Trek*, *Robin Hood*, *The Green Lantern* and *The Perfect Storm*. Chris Assells has credits on films like *Fright Night*, *The Green Hornet*, *Wall Street: Money Never Sleeps* and *Gladiator*. Jon Title's filmography includes *Final Destination 5*, *Red*, *Blood Diamond* and *The Bourne Ultimatum*.

THE SCRIPT IS KING

Before delving into specifics, it's instructive to mention a few general points that all three of the interviewees agree on. The most important is that every film is different, and a sound designer must base his/her approach on the needs of the particular film and the director's vision for it. "With almost every problem, everything that we tackle," says Cohen, "it always goes back to the story."

The three interviewees also concur that the best source material for effects based on real sounds are custom field recordings, made with the needs of the film in mind. That said, a great deal of layering, processing and pitching up or down often gets done to these recordings before the final mix.

"We do a lot of recording for every film," Cohen says. "There are a couple of reasons. One is that no matter how much you have in the library, it seems you never have exactly what you're looking for. And the other is that we look at a scene and we talk about what it is we want to accomplish with sound. When we go out to record, we've got that in mind, and we're recording things in a particular way, specifically for that instance."

If there is no time or budget for custom recordings, quality libraries can provide pretty good substitutes. "I worked in low-budget places early in my career where it was just library effects," Assells says, "and you do what you can. To make it more dynamic, you'll pitch it way up or you'll time-compress it way up—something to make the sound really pop."

When building and cutting their sounds,

TOOLS: OLD AND NEW

Sound FX editing has come a long way since the days of Moviolas and razor blades. Today, the editor of choice is Avid Pro Tools, the de facto standard in Hollywood post-production houses and mixing stages. In addition to all of the sonic manipulation that can be done in Pro Tools, sound designers and sound effects editors also use a lot of plug-ins, both of the instrument and processing variety. Because manipulating pitch is so important to sound effects creation, sampler plug-ins such as Native Instruments Kontakt are very popular.

"With the samplers that they have today," says Harry Cohen, "there are several different modes, where you put the sound on the keyboard and you play it lower and it can be lower pitched and slower, but you can also have it so that you can play it at a lower pitch and it's not slower, it's the same speed. You can dynamically change the pitch, you can put it through rough filters and just do whole bunch of different stuff with it."

Convolution reverbs are also very useful for sound effects. Cohen says he uses Audio Ease Altiverb and Ircam Spat. Jon Title talked about using the convolution reverb built into Kontakt. These reverbs are more often used as sound-design tools, or on internal layers of a multilayered effect, rather then to provide overall ambiences. That task is typically left for the sound mixers. Cohen, Title and Assells all talked about being pretty ginger with their use of reverbs on the predubs they submit to the mixer. "Generally," says Assells, "I'll present it two ways since tracks are free. I will pre-reverb something and paste it in there, and I'll also give them the raw sound so that if a reverb that I've created isn't matching what they think it should be, they could either turn it off or go to my untreated sound and reverb it the way they think it should sound."

"Ninety-nine percent of the time they like it and they use it," Cohen says, "but by rendering it separately, I haven't locked us into anything."

sound designers and sound effects editors are always mindful that the other important sound elements will also be occupying the soundtrack. Sometimes the key is what *not* to include. "If we're in the middle of a car chase and a gun fight," says Cohen, "you've got three car engines, the gun, the tire skids, the impacts, the ricochets, the dialog and the music. If we present all that to the audience, then they hear nothing; they hear the mishmash. Then we can start saying: 'What can we take out?' 'What do we want the audience's experience to be here?' So one of the things we would realize is if we take out the engine in a couple of these shots, now we can hear the guns."

The balance between the various sound elements is handled on the mix stage by the re-recording mixer, so effects and levels often change quite a bit during a final or one of the temp dubs. "Nine times out of 10, the [sound effects] mix I prefer is way hotter than the one the mixer prefers," says Assells. "Dialog is king, then music and then effects. That's

Among the sounds created by Harry Cohen are the guns in Inglourious Basterds *(pictured above), gadgets in* Green Hornet *and various sound design in the upcoming* Apollo 18.

usually the way it goes."

Sound effects are synched to picture and edited, and the effects sequences frequently contain large track counts. Sound designers or sound effects editors will often make 5.1 submixes of their work, using the internal busing available in Pro Tools, to present to the mix stage. "They've got tons to do and hundreds of tracks to deal with," says Cohen, "and if I bring in something that is 200 tracks for this one idea of making the character of the machine change, then I'm not helping the process. We'll bring it in as a complete rendered thought—a series of thoughts, maybe, a couple of different ways to go—but much more well developed and comped down than all the individual elements are."

These submixes are especially important during temp mixes, where time is even shorter than at the final. "There just isn't time to go through 60 tracks," says Title. "When there's more time and you're predubbing for the final, those mixes can be unwound, and the mixer can start from scratch if he wants to. But a lot of times, the 5.1 submixes sound fine."

KILLER SOUNDS

Gunshots are a big part of many action films and require a lot more than just the placement of a gunshot recording in the appropriate spot on the Pro Tools timeline to sync with the action on screen. "In real life, most guns just go, 'pow,'" says Title. "But in the movies, for the most part you don't want it to just go 'pow,' so you add these other elements to give it texture and make it exciting."

An old sound editor trick is to put a gap before the impact sound because it makes the sound hit bigger.
–Chris Assells

Recordings for gun sounds can be quite involved. As an example, Title mentions his work on *Black Hawk Down*, where the guns were recorded in a setting that was acoustically similar to the Mogadishu, Somalia, streets where the film was set. "It all takes place in an urban environment between buildings," Title says. "We went out and recorded all the main weapons for that film: the AK-47s, the M-16s, and the mini-guns and the 50-caliber. There's a bit of a slap on those weapons that is natural, that came from where we recorded it."

"There's often eight to 10 [recorders] going from different positions," adds Cohen. "You've got one that's kind of on the side of the gun so you try and record the mechanism. There are a couple that are further away to get the boom. And some that are downfield. And some that are close to the muzzle but in back of it so the pressure wave doesn't hit the capsule. Then we'll take all these recordings back, and the librarian will line them up so all the recordings are in sync

to each other. And that gives you a wonderful tool kit to create an interesting shot."

The editor can then choose a specific combination of these synched recordings to use for that single gunshot sound. "Maybe I'll have one very tight, high-frequency, snappy gun in the center," says Title, "and then maybe [layer in] a boomier stereo pair for the left and right. And then depending on how close it is, if it's a big, in-your-face gun, maybe I'll use a sweetener with a subwoofer element."

Especially in a complex battle scene, the 5.1 panning of a gunshot can be quite important for sound placement and impact. "On close-up guns, I use a center-channel element so it's right there, connected to the middle of the screen," Title says. "For the most part, my general rule is to do an L/C/R and a sub. Sometimes not a sub, but definitely an L/C/R. If it's a gunshot right in your face—a close-up of someone firing a gun—it really attaches to the image. For medium and distant sounds, I'll use a stereo pair or just a mono. I can use that same gun, but choose a distant recording of it."

Cohen says compression plays a big role in making gun sounds work in the movies. "We can't really re-create the exact experience of being in the presence of the sound of a real gun," he says, "because there's this huge pressure wave that's damaging to your ears. So we have to kind of imply that by making the large part of the sound last longer instead of a single transient at maximum volume. We'll work with the sound to keep the front part of it at maximum volume for longer than a single transient. We can't really make it louder, but we can make the loudest part of it last a little longer."

For this application, Cohen typically sets high ratios and low thresholds on his compressor plug-ins; McDSP's Compressor Bank and ML4000 are among his favorites. "All the big Hollywood-sounding guns and big punches and stuff, we're listening to a lot of compression artifacts," he says. "You just want to find compressors and limiters and things that behave the way tubes and tape did, and give us that large warm sound, which the audience has been taught represents size and power. The sound of a Hollywood punch, a chin sock, that doesn't exist in the real world. It's a compression artifact."

There are other elements to gunshots such as the sound of the bullets flying. "'Bullet whizzes' or 'whiz-bys,'" says Title, "are those little 'chu, chu chu' sounds. If you watch a movie like *Glory*, they really played up the sound of the bullets going overhead. And it really added to the tension. And then there's the bullet impacts, which also represent danger. And you get the sound of bullets not only impacting and going into things, but also 'ricos,' ricocheting off of things. And that whole package of the gunshot, the whizzes and the bullets impacting or ricocheting is what really makes the gun battles exciting."

Other types of weapons are also created as larger-than-life sounds and often have multiple layers. Assells talks about working on the sword sounds for *Gladiator*, where he started with sword recordings from Soundelux's extensive library. "Sometimes the sword sounds aren't as big or as heavy as you want so you can pitch them down," he says. "You could add sounds such as bells hitting." He also added whooshes, which were synchronized with the arc of the sword movements. "If you watch the picture again and listen," Assells says, "you'll hear that whoosh on almost every impact.

"These gladiator battles were so full of stuff that you try to find a place in the soundscape so it would kind of sit by itself," Assells continues.

"An old sound editor trick is to put a gap before the impact sound, an actual gap of silence, because it makes the sound hit bigger. We use this a lot in gunshots and gun battles, where a gun will be fired rapidly and you'll actually make a little empty frame or two of no sound at all so that when the sound hits—boom, it smacks you, and the previous sound is not bleeding into the next sound."

ON THE ROAD

Another major effects category is car sounds. Assells describes how for many movies, budget permitting, there will be a custom "car series" recorded. "A car series means they'll take a particular car and record everything it does," he explains. "So you'll have a library of a 5-mph-by, a 10-mph-by, 15—all the different speed-bys. It's backing up, slowing down, chase driving. They'll do a parking-lot-maneuver series where it just kind of creeps around a parking lot, slowing down and getting quicker."

Recordists will place mics in the tailpipe, the engine and the interior. The different recordings can be synched and used in any proportion that works for the given moment in the film. "Let's say you're driving along," says Assells. "It's a dialog scene, two characters are talking. You can use the interior recording [for background], it's kind of washy, but it's got a nice spread to it, you're not crowding that middle speaker [where the dialog is]. And then he says, 'Oh no, the bad guy's after us,' and we've got a chase. He stomps on it, then you can bring in the tailpipe recordings, which are nice and beefy and throaty."

Although realism is important as a baseline, more often than not the recordings (or library recordings) get beefed up considerably. "The way films are now," Assells says, "cars are over the top, and there's CGI, and they're doing things no real car would do. In those cases, I'll pitch stuff down to give it more heft. Or I'll EQ it or run it through plug-ins just to give it more bottom and more boom."

Car sounds have many elements, and Assells likes to do separate sub-

Photo: Marc Vanocur/CSS Studios

Chris Assells created the sounds for the sword fight scenes in Gladiator *and worked on the* Green Hornet *(above).*

NOT-SO-STUPID CAR TRICKS

Chris Assells has cut a lot of automotive sounds in his career and has quite a few tricks up his sleeve for creating more impactful sounds. Here, he explains a couple.

From a sonic standpoint, how do you make a car chase more exciting?

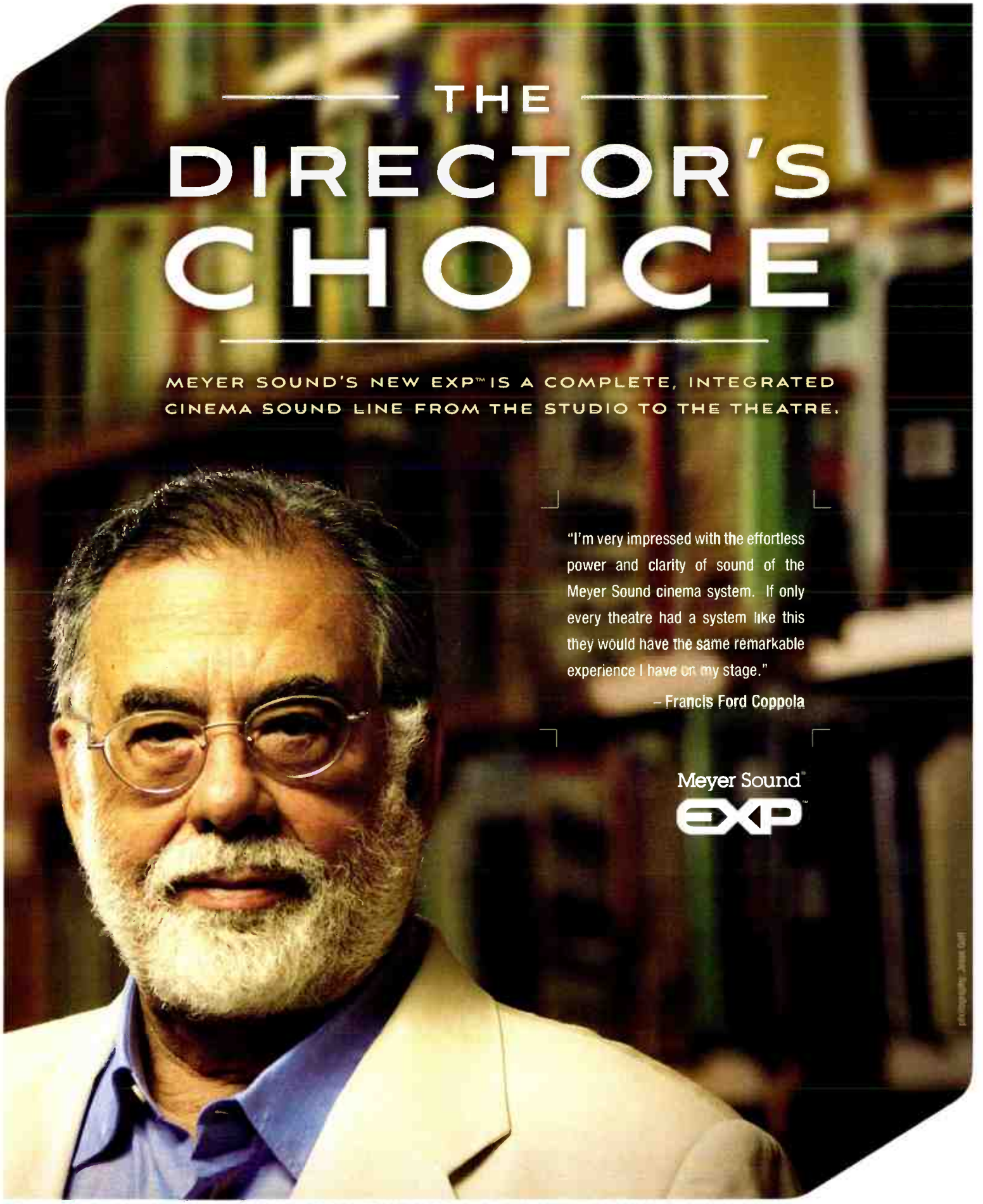
There are several things you can do. For instance, a close-up car-by by itself can sound great and very exciting. But if you sweeten it with a jet-by...Here's something that works great on motorcycles: You have a recording of a small helicopter "whip pan," which means the helicopter is coming one way and your microphone is pointing in the opposite direction. As the helicopter comes by, you sweep the microphone in the opposite direction that the helicopter is coming so there's a real big peak. So you don't hear it coming that much, and when it's in your face, it goes "pow" and pushes the air into your face. For some reason, I found on motorcycle chases, you take a smaller helicopter like a Little Bird and you use a whip pan on one of those to make it go by, and it raises the hair on the back of your neck. It works just wonderfully. Jets work very well for close-up car-bys. Sometimes you want to throw some stuff in the sub when it's right in your face so your pant leg kind of wiggles a little in the wind as it comes by.

Is the whip pan recorded in stereo?

Generally yes, but even a mono recording of it will work because what you want is the dynamic of that thing coming into your face; coming from almost nothing. And again, it's because the microphone is [initially] pointed away. Let's say the helicopter is coming from the right, your microphone is pointed to the left. As the helicopter crosses in front of you, you bring your microphone from left to right. And again, so you're not really hearing it coming that much, but when it peaks, it really pops on the peak.

Do you have any other tips for cutting car sounds?

This took me awhile to learn. This is for a car coming in and stopping. Generally, cars today when they come in and stop [with an automatic transmission], the engine disengages and the car kind of floats in and stops. In that situation, I will frequently use a "reverse in." And the reason is, you've got the tailpipes coming at you, which gives you a sound of the engine instead of just air coming in. Also, if you're in reverse, the transmission is tied to the engine so that the engine is slowing the car down instead of just this air coming in. When you go to park your car, listen and you'll see what I mean. When you take your foot off the gas and put it on the brake, the engine disappears. It becomes featureless and boring. I try to get these guys, when they record the car series, to do "in-and-stops" in low gear. That way, the engine is tied to the transmission. The transmission is slowing the car down, and you can actually feel and hear the engine slowing down.



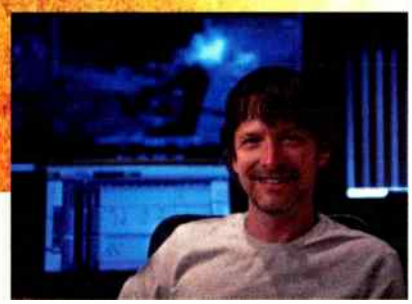


Photo: Marc Vanocur/CSS Studios

Jon Title recently finished work as sound designer for Final Destination 5, *in which he had to create the myriad sounds of a massive suspension bridge collapsing. He also worked on* Black Hawk Down *(pictured).*

mixes of the various categories to give the mixer ultimate control. "There will be the engine category that's going to the engine predub," he says. "And this is so when we final, if they want to just bring up the engine, they can. The tires will be separate, they'll go under another predub. Rattles/impacts will go under another predub. Wind/buffeting will go into another predub. And then we have another one we call Design/Special Effects. That will go into another predub."

Assells says that tire recordings are key to creating a convincing car sound. "A big item that we use a lot is called 'gravel roll,'" he says. "It's basically somebody with a mic, pointing down at a tire rolling on gravel. And we'll use it on parking lots, on asphalt, and even though it's not gravel on the asphalt, you play it at the right volume and it gives a sense of movement and it glues the car to the ground. Even if I'm cutting a car driving along at 35 miles an hour, I will always cut a tire steady, even if you're barely playing it at all."

A classic technique for making car chase sounds more exciting is to subtly layer in a lion (or other large animal) roaring to add to the tension of the sound. Although that's become somewhat of cliché, it can be very effective. "If you mix it right, it's kind of subliminal," Assells says, "so you just kind of

BRIDGE TO NOWHERE

Jon Title was tasked with designing the sound of a massive bridge collapse in the recently released *Final Destination 5*.

Obviously, a bridge collapse isn't something you can go out and field record. How did you create those sounds?

The way I did it was to just take it one element at a time. In that case, we have a huge library of sounds, and I'm very lucky to work in a company that has this. You start there. In case of that scene, you start with concrete crumbling and breaking. And metal ripping and groaning. And then you go on, using explosions strategically to help with the power of it. You try to use all the speakers, to make it even more massive, using the LFE or the subwoofer. And you just keep building on it. In the case of that bridge, and with a lot of movies that we're working on, it's so CGI-intensive. The visuals are made in a computer and a lot of the time they're not done until days before we're finished mixing. So it's an evolving process of adding and taking away as we continue to work on it.

When the bridge actually falls, I assume you put in a really big roar?

It's a roar, it's earthquake-type sounds, it's cables snapping. The constant sounds would be like earth rumbles and concrete crumbles, punctuated by these explosions and metal snaps and things like that. And then interesting things on top of that: metal groans and moans and higher-frequency screeches that can cut through music.

And a lot of stuff rumbling in the subwoofer, I assume?

Oh yeah.

And what do you use for that?

Sometimes I like to leave that until we're on the mixing stage. It can be hard to know how a low-frequency sound, especially something huge and sustaining, is going to translate to a big theater. That being said, I think in the case of the bridge, I did cut a low-frequency sweetener for that, which I think was an earthquake rumble that I then wrote the volume on, just to kind of help the arc of the action.

So you automated some volume changes in Pro Tools?

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sense something's there."

Title agrees. "I don't want anyone to go, 'Oh, I heard that lion in there,'" he says. "But for some reason, those sounds, because they're organic, are very powerful; they feel dangerous."

GHOSTS IN THE MACHINE

If a machine is more of a prop than the "star of the show," the sound team has more latitude regarding how much sound to include for them. "I have this theory," says Cohen, "that in normal life, when you're listening to something, your brain and your ears tune out anything that they start to think is unimportant. If there's a Coke machine outside your office door, after a while you won't notice it. But in film sound, we have to be that filter for the audience."

He put that theory into practice in his work for the upcoming movie *Apollo 18*. "The movie spends a lot of time in the Lunar Excursion Module, the lander. So all of the background machinery becomes like a character," he says. "We have to constantly change the level of these elements in the background because your brain won't. So we'll come into the scene and we've made all these elements that sound like heartbeats, or fetal heartbeats, and they're like the oxygen scrubbers and other little pumps and mechanisms that turn off. We have to decide moment by moment what we want the audience to hear. And we have to do it in a way that's a little unnatural. It's not just deciding that the background is at this level and that's how we run it through the scene. We want to keep changing the depth of the background. Or we want to maybe introduce it loud and then bring it lower, and then bring it up later on for dramatic reasons."

When a machine is front and center, the audience is visually focused on it, so sounds must be designed and cut to match its movements. Cohen describes such a situation in his work on the movie *Wanted*. "There are these scenes that revolve around this big power loom. There was a basic rhythm that was built into the production track and we would use that as our guide," he says. "I'd come up with a bunch of [looping] rhythmic elements."

Cohen faced the challenge of how to get all the various loops he created to stay in sync, not only with each other but with the visual motion of the loom, which wasn't always consistent due to picture edits. His solution was REX loops because they can change speed without changing pitch, and can follow a tempo map created in Pro Tools. "I literally had 100 different loops that would all be in rhythm," Cohen says. "We would have heartbeats in sync with the loom, we would have train sounds in sync with the loom, we'd have all these different elements in sync with the loom. I gave some of those pieces to the composer, Danny Elfman, early on so that when the music showed up, it was based around that rhythm, too."

IS IT REAL?

For sound designers and sound effects editors, a lot comes down to the balance between realism and entertainment value. "For the most part, you're making a movie, it's not real," says Title. "Punches in fight scenes would be a good example of reality versus movies. And it's something that we struggle with because most of the time, filmmakers don't want to hear big, over-the-top, *Rocky*, Hollywood-style chin socks. They want to hear something real. Actually, they don't want to hear what's real, they want to hear something that's *more* realistic, that isn't over the top, but still they want it to be exciting and cinematic. So you're kind of constantly trying to find the middle ground between reality and it being a good movie-sound experience."

Where the sound effects will fall in that continuum depends a lot on the specifics of the movie. "Whether you want a car that sits like it was recorded on the set, or if it's a crazy car chase where it's a smash cut and the radiator's in your face, zooming by, and you want to sweeten it with a big lion roar or a jet-by," says Assells, "the film totally dictates it."

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Mike Levine is a New York–area recording musician and music journalist. He's the former editor of *Electronic Musician*.

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SOUNDS OF FUTURE PAST

Creating the Sonic Worlds of *Terra Nova*

By Matt Hurwitz

It's a great gig to land if you work in sound for picture. A hotly anticipated sci-fi series with the name Spielberg attached. A plot set in the future *and* the prehistoric past, opening up all kinds of sound-design possibilities. Machines and gadgets, weapons and vehicles, nature and science, humans and dinosaurs. Supervising sound editor Michael Graham, MPSE, knew that he and his team at Smart Post Sound (Burbank, Calif.) were in for an exciting challenge when they picked up *Terra Nova*. But there was one catch.

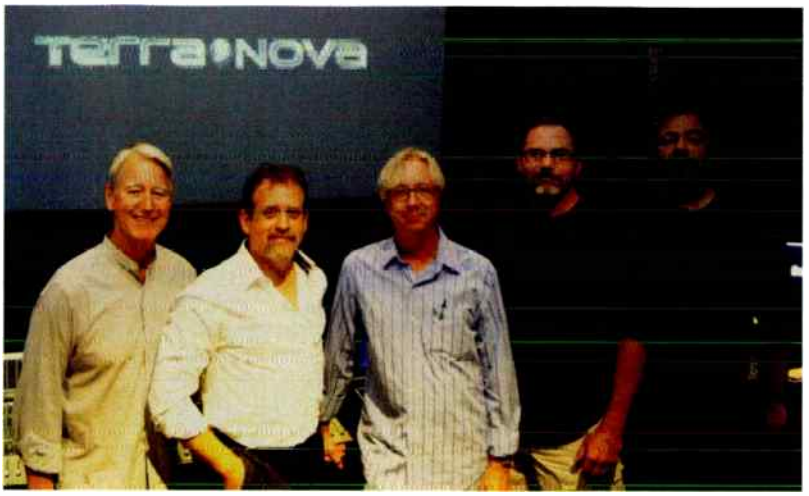
Already busy at work on another big Steven Spielberg-produced sci-fi series, *Falling Skies*, Graham was given a mandate or, more accurately, a restriction. "It was explained to us that the dinosaurs in *Terra Nova* shouldn't sound like anything in *Jurassic Park*," he recalls. "You can see the dilemma: Every child who's ever watched *Jurassic Park* knows that is the vocabulary of the dinosaurs. Everybody knows that's what they sound like!"

Terra Nova begins in the year 2149, when Earth is overcrowded and in decline, and the government is desperate for options to relocate and repopulate. Meanwhile, a physics accident has resulted in the discovery of a particle accelerator capable of passing humans back in time through a portal located in the fictional Hope Plaza in Chicago. The accelerator lands travelers to a lush existence millions of years earlier, in the Cretaceous Era, in the settlement of Terra Nova. The past then becomes home to military and civilian populations, who must share the planet, naturally, with dinosaurs.

The premiere episode was one of the more complex pilots the Smart Post team had worked on. "It really was very much like a feature film," says Graham, who supervised the first hour, while his co-supervisor and ADR editor, Chris Harvengt, picked up the second hour and the remainder of

the series. The initial sound design was developed by Graham and Smart Post's primary sound designer, Rick Steele, along with Bob Costanza and Mike Dickeson, whose main focus was on the show's fascinating collection of vehicles, both in year 2149 and in Terra Nova.

Smart Post's roots in Burbank go back nearly 40 years, when it was founded as Echo Sound. Now owned by Graham and partners Mark Friedgen, Joe Melody, Rob Weber, Sue Jesse and Matt Preble, the company operates out of two buildings: an editorial/layback center in the equestrian district on Riverside Drive; and mix, ADR and Foley stages on Hollywood Way. The company has garnered numerous Emmys and Golden Reel Awards for its work over the years, both as Echo and Smart Post.



From left: supervising sound editor Michael Graham, MPSE; sound designer Rick Steele; co-supervising sound editor Chris Harvengt; and sound designers Bob Costanza and Mike Dickeson

TWO WORLDS OF SOUND

The 2149 version of Chicago has one key quality that the producers wanted to convey: disrepair. "It's a future environment that has broken down," says Graham. "It's a planet that has consumed itself." Adds Harvengt, "The machine has taken over plant life, so to speak. So what you hear is the sound inside: a low, thundering machine life. It's really about coming up with sounds that the audience will connect with as being of that time, but always slightly different."

Vehicles, such as the maglev trains ferrying passengers around the city, are given such a treatment. Though, by definition, a maglev vehicle is suspended above its track by a magnetic field, it has a decidedly squeaky wheel to it. "They still have the telltale sign of disrepair—a squeal," Graham explains.

"We change the pitch of it and add other elements," says Harvengt, "so it takes us out of what we normally hear, but it's still grounded in what we know."

Rick Steele has been editing and designing sounds for 25 years. He has access to an extensive library of sounds, maintained across 6 terabytes of local and server storage space. Steele searches and accesses files through Sound Wrangler, a proprietary software developed by Steele (and available in Beta form for free online at SmartPostSolutions.com).

"I can search either by the sound's name or by the path at which the sound is stored," he explains. "So if I'm looking for 'Matterhorn roller coaster,' I can search 'Disneyland,' 'amusement' or 'coaster,' even if the sound's file name is only 'LOUD BY.' I can then cut any section of that sound right to my timeline at the cursor position, in any track or stream configuration with handles. Or just drag and drop the entire selection set to my timeline and start cutting away."

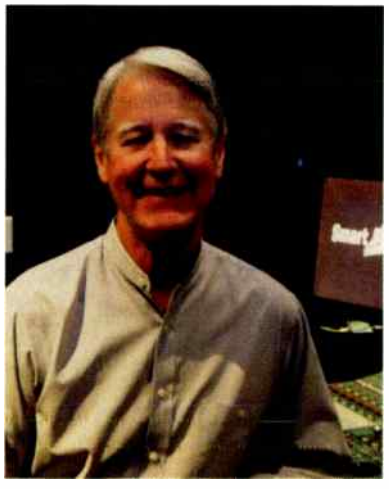
Hope Plaza's particle accelerator required Steele to preview no less than 2,500 sounds to find an appropriate combination of roughly 13 sounds that went into the effect. First, he took the explosive "whoomp" sound of a parachute opening and looped it at various intervals and processed it to give it a pulsing "whappy" sound, adding an explosion underneath with a previously created sound called "Green Rubber Slime."

"I had used Sound Toys' Crystalizer plug-in and processed a short lion snarl and I doubled it up," he explains. "That sound runs underneath the whole thing." The startup of an industrial electric pump begins the whole process.

"The producers wanted to feel that this place was enormous, full of energy and dangerous at the same time. Then we had to explode them back into the past," Graham explains. "Most of that was Rick Steele."

Steele and fellow designer Dickeson use similar rigs—Pro Tools|HD Accel with 24-fader ICON control surfaces, which, in Steele's case, is strictly used for monitoring. "I'm pretty much a keyboard cutter," he says. "To me, that is really the editing process—cutting, pasting, dragging, trimming."

Working in the box, the two make use of some favorite plug-ins from Avid—including Vari-Fi for ramping up sounds, such as engine revving—and a collection from Sound Toys, including Crystallizer, FilterFreak, Tremolator, PhaseMistress and, Steele's main workhorse, PurePitch. "Pitch is really almost everything, and PurePitch is especially useful in the formant of the sound— changing the pitch of the intonation without changing the pitch of the vocalization itself. And when you apply it to non-vocal effects, it has some very interesting characteristics."



Co-supervising sound editor/sound designer Michael Graham

While creating the sounds of a rundown future provided the base, Graham says creating dinosaurs that don't sound like, well, dinosaurs (i.e., *Jurassic Park*) was the show's biggest challenge. "We all identify certain sounds coming out of certain dinosaur faces," says Steele. "So the real task is to come up with groups of sounds and put them together with what we're seeing, and, in a sense, try and create a personality."

So what makes a good dinosaur? "Anything that roars," replies Graham with a laugh. "You can use a bear, a lion, a cougar—you can use all of those, but they all have to be treated, manipulated in such a way that it'll fit the size of the creature. And they need to be married with a large-body-cavity animal, such as an elephant, rhino or walrus, to give it size and weight, especially for low growls and breaths. And the key is combining all of those sounds so that they have one vocalization and sound like they're a single animal."

Creating a personality for the beasts is what sets them apart from the real thing, says Steele. "Every roar can't be the same; you have to create that deviation. If you listen to animals in the wild, they kind of sound the same from vocalization to vocalization. They don't have human-like personalities, but you still have to create that emotional attachment. These are characters, not just animals."

For the beastly Carnotauruss, Steele worked up a new, intimidating sound. "The producers told us they wanted it to have a bird-like quality," Graham explains. At the core of Steele's Carno is a condor with lots of other ferocious animals added. "But it's that condor that gives it that distinct, bird-

like feel," says Steele, noting that it can be heard as the last sound out of its mouth before it attacks.

Sometimes the dinosaurs interact with each other, not "speaking" per se, but communicating nonetheless. In the second hour of the pilot, some "Slasher" creatures—prehistoric animals that hunt in packs, with large tails with a saw on the end—are heard offscreen "talking" to each other as they form their attack. "It makes the scene more terrifying, the fact that you're not seeing them, but you hear them going back and forth," Harvengt explains. "Each one of those vocalizations has to be as if we're hearing an actor offstage playing a role. That's the difference between design effects and hard effects; design effects have an emotional effect on the audience."

Another dinosaur is the giant, green-eating Brachiosaurus that, in one scene, is found bending down from the tree branches to eat out of a little girl's hand. The direction from co-producer Livia Hanich and executive producer Brannon Braga during the episode's spotting session was simply that the animal needed to sound "friendly."

"The producers give us clues, in a way, as to what they're looking for," says Harvengt. "So we have to take those simple clues and create sounds that we know will forward the story. A lot of times, it's like a jigsaw puzzle. You're looking for that piece to put in there that will complete the full picture."

The friendly Brach, says Steele, is a combination of a bear, a dog "and certain parts of a walrus." And when it bends down, "That's from a cow."

Terra Nova *re-recording mixers Dean Okrand (left) and Brian Harman*

THE MECHANICAL WORLD

Dinosaurs aren't the only sounds that had to be created in *Terra Nova*. Mike Dickeson was charged with, among other things, creating the electric-powered vehicles the military uses to get around. "The problem with electric vehicles is that they are very quiet," Graham explains. "If you look at a Prius, you

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just can't hear them. So Mike had to create electric vehicles that have an acceleration and a deceleration, with revs, et cetera. It was a big challenge; these are vehicles that don't exist in any library, and Mike responded with great stuff."

Dickeson also created the sounds for the unique weaponry used in Terra Nova to ward off the dinos. "We had to create a sonic canon, something that would have impact on them, make 'em mad, but would also make them afraid, without killing them," Graham says. "The design has an energy that ramps up, then an expulsion and there's a projectile. There are three different events that take place in a matter of a tenth of a second. They had to be distinct elements. And most people won't even notice. But if it were cheesy, they would. They'll just know it sounds cool."

THE PROCESS

Once all of the sound elements for an episode are completed, they are copied from the server in the editing studio on Riverside Drive and brought over on a drive to the dub stage at Hollywood Way for the final three-day mix. Re-recording mixers Dean Okrand (dialog and music) and Brian Harman (sound design/effects/Foley) work a pair of 24-fader D-Command control surfaces in Pro Tools, something Harman says has vastly sped up the process. "We can work independently or we can work together. That's one of the nice things about Pro Tools and digital video versus the old days. I can be working on a scene at the 10-minute point, and Dean can be at five minutes working on a different scene. It's an extremely powerful tool."

Though the impressive pilot episode featured a whopping 300 tracks, Graham expects the typical episode to have between 125 and 140. Harman typically receives eight to 10 mono and eight to 10 stereo effects tracks, mostly for the dinosaurs themselves. "I spread them across the front wall, adding sub for each," he says, before moving to the rear speakers. "I love using the surrounds. It fills out the rooms and really gives the mix life. I'll take certain birds or calls and put them in the back, and then put some reverb on it to have it wash around back up to the front. The surrounds and the boom are fully utilized in this show."

It's not unusual for design effects to require some additional attention during the mix. Graham handles the changes himself from his MacBook Pro. "I have a 2TB drive with 100,000 sounds, and another drive with all the dialog and ADR in case they want an alternate take or something," he explains. Notes Harman, "I'm able to go inside and grab the sound, and then I have the plug-ins where I can pitch-shift things down or time-expand it or compress it—all right here. In the old days, it would have to go back to the shop and be done. I'm doing it right there at the console."

An example of such a change took place during the mixing of the scene when the Brachiosaurus bends down to eat the plant out of the little girl's hand. "We were dubbing that, and [co-producer] Livia [Hanich] said, 'You know what? When it bends, I'd like for us to want to pet it,'" Graham recalls. "So I'm able to go into that library of stuff that we created, find a sound that evokes that feeling [in this case, the cow] and I could re-cut it, right there on the stage. And I'll put it through the board, they'll mix it in, and the producers say, 'Yeah, that's great.'" Problem solved.

Hanich and executive producer Brannon Braga are typically at the dub providing feedback and direction throughout. "They actually enjoy the process. And it's fun to watch them," says Graham. "Particularly if they've written an episode, and all of a sudden something comes to life, something they only thought about in their head. And now they're seeing it and hearing it. That's exciting for me, as the supervisor, to watch because it means you've done your job."

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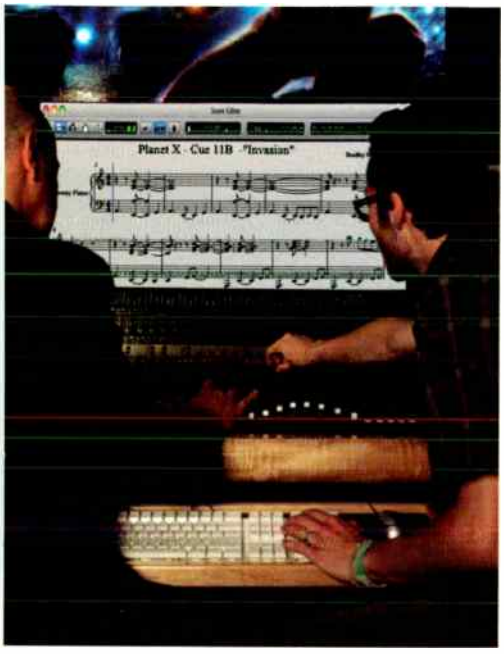

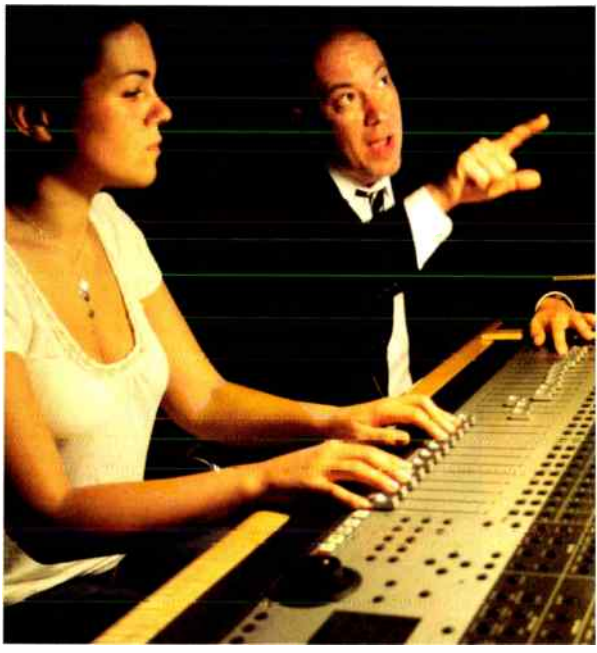

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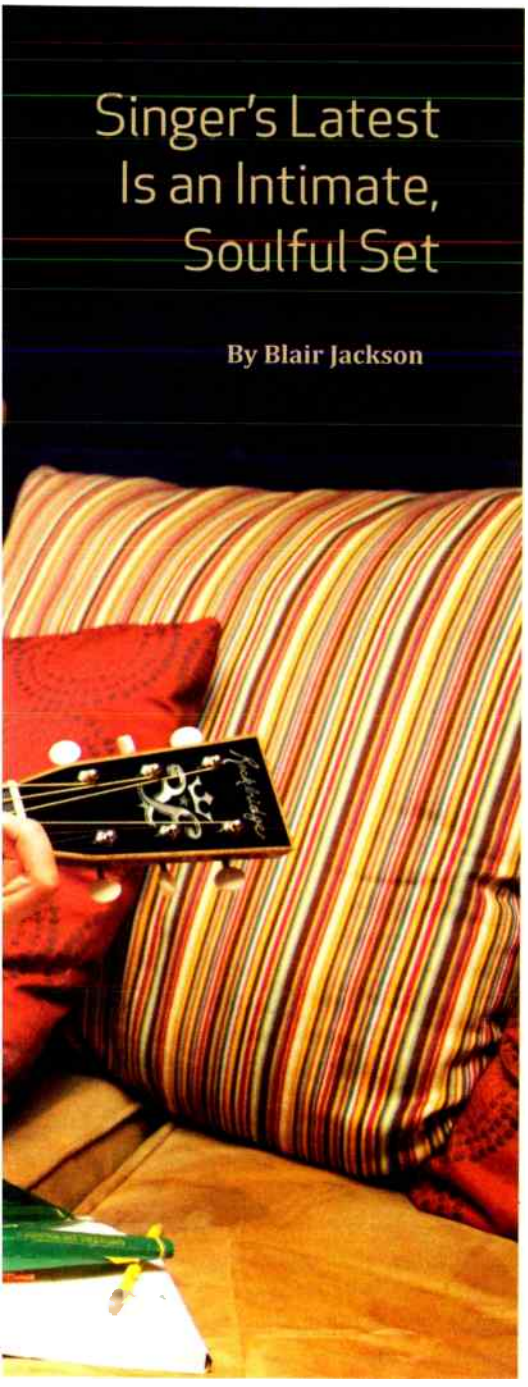
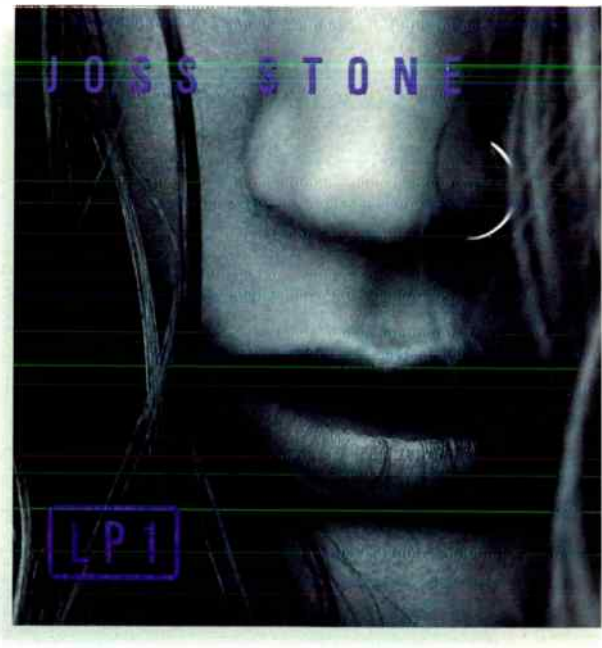
Joss Stone, Dave Stewart Get Loose at Blackbird

Photo: Kristin Burns

Singer's Latest Is an Intimate, Soulful Set

By Blair Jackson





At the ripe old age of 24, Joss Stone is already a wily record industry veteran. The gritty and passionate British singer made her initial splash in her mid-teens with the trans-Atlantic hit album *The Soul Sessions*, which played beautifully into England's long love affair with American R&B, and in retrospect helped pave the way for later UK "blue-eyed soul" sensations such as Amy Winehouse and Adele. More chart successes followed in Britain and America. She's been nominated for numerous Grammy Awards and always seems to be available for high-profile benefit concerts when they crop up, from Band Aid to Live 8 to Live Earth, and many more. She's nearly as famous for her collaborations as her own records, having worked with everyone from Melissa Etheridge (a heart-stopping duet on two Janis Joplin tunes at the Grammys) to Herbie Hancock, Patti LaBelle, Stevie Wonder, Common, Jeff Beck and countless others. What could be considered her ultimate collaboration—the group SuperHeavy, featuring Stone, Mick Jagger, Dave Stewart, Damian Marley and A.R. Rahman—is hitting the stores this month.

Stone's also been in the biz long enough to have had a dispute with her last record label, EMI, over a variety of issues. After much legal wrangling, she managed to free herself (though EMI will be releasing *Super Duper Hits: The Best of Joss Stone* in late September), and, feeling newly liberated, has taken a slight left turn on her latest album, *LP1* (on her own Stone'd label), which was co-produced by the singer and longtime friend and musical associate Dave Stewart, and recorded in Nashville at Blackbird Studios in less than a week using local players. No, she hasn't gone country—the album is still brimming with characteristically soulful performances (maybe more Memphis, in some cases, than past records). But the change in scenery and musicians and the relaxed way the album was cut resulted in a record that feels as if it may be her most intimate to date.

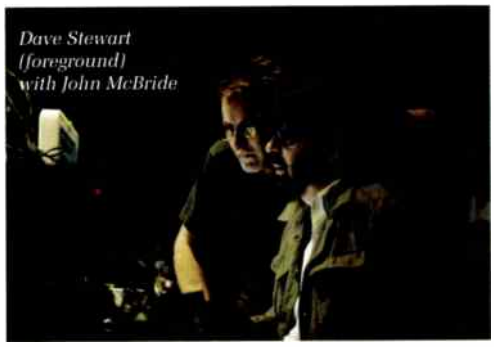
The story of *LP1* actually begins several months before Stone showed up at Blackbird—with the recording of Dave Stewart's latest album, *The Blackbird Diaries*. In June 2010, Stewart flew to Nashville to meet with Blackbird owner/engineer John McBride and his superstar wife, Martina, about a proposed television show called *Malibu Country*. They met at the studio, went out for dinner and drinks, "and then we went back to the studio and listened to some music in a couple of rooms, and Dave got to experience a little of the Blackbird thing," John McBride says. "He had already arranged the following day to have a writing session [at Blackbird] with Martina, Hillary Lindsey, who's an extremely successful songwriter in Nashville, and a guy named Gordie Sampson. So the four of them

"I KNEW [STONE] WOULD HAVE SUCH A GOOD TIME [AT BLACKBIRD] AND WOULD REALLY ENJOY THE PROCESS AND BEING SURROUNDED BY GREAT PLAYERS.

—Dave Stewart

got together and started a couple of songs. Dave flew out the day after that, and then I get an email from him that said, 'John, I want to make my first solo album in 13, 14 years. Please put a band together for me. I want you to engineer it. I want to call it *The Blackbird Sessions* and here's the album cover.'"

Stewart told McBride to "think along the lines of Neil Young's *Harvest*" in forming the band, so he started by calling one of Young's favorite drummers, Chad Cromwell, and then built the group around that anchor, and included such Nashville stalwarts as bassist Michael Rhodes, A-list guitarist Tom Bukovac ("because he's a little left-of-center and incredibly tasty," McBride says), Mike Rojas on keyboards and versatile guitarist/steel master Dan Dugmore, "who can play anything and is the sweetest and coolest guy on Planet Earth."



Dave Stewart (foreground) with John McBride

In July, Stewart flew back to Nashville, and with McBride engineering in Studio D (a great API console-equipped rock room, where Grammy-winning albums from Kings of Leon and The Raconteurs have been cut) made Stewart's entire album in just six days, employing scads of vintage gear. The regimen was that Stewart would write in the morning and then teach the band the songs. Around 1 or 2 p.m., they'd run it down once or twice and then record it live, usually getting a usable take in just a couple of tries. It was love at first twang!

[STONE'S] OLD SCHOOL. SHE DOESN'T SIT THERE AND COMP TOGETHER A VOCAL.
—John McBride

"Then about 7:30 or 8, it was Martini Time, and it was hard to get too much done once Martini Time kicked in," McBride says with a laugh. "But we'd do overdubs at night usually—background singers, whatever. In five days we tracked 16 songs and overdubbed most of them. A little later we got back together for five more days and we did more overdubs, mixed [on the vintage Neve in Blackbird A] and mastered this whole record. So in 10 days, essentially, we had a record. I'm not accustomed to working that way, and I *loved* it! It was intense but fun."

Not long after that, McBride relates, "I get a phone call, and Dave says, 'Hey, let's put the band together and do a Joss Stone record!' So we ended up doing the same thing with Joss Stone, though I didn't mix that one. But again, the tracking was about six days; same guys, same kind of schedule—including Martini Time!

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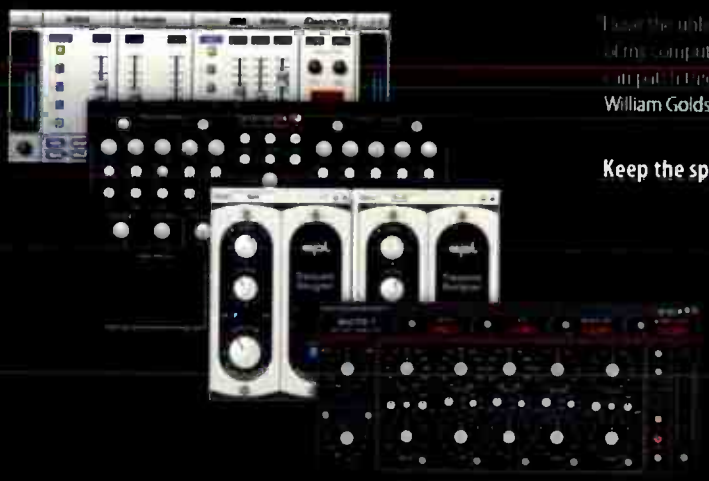

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in the room. She loved the sound that John had in her headphones—she could hear herself crystal clear and see the people playing when she was singing. That was exciting for her."

For guitars, McBride used the same approach he had on Stewart's album—a single vintage RCA BK5B ribbon mic on each amp through an RCA BA11A pre. Because of the project's slightly retro sound, McBride originally thought he might do a simple three-mic approach to capture Cromwell's drum kit, "But because I wasn't going to be mixing it [it was mixed in New York by Steve Greenwell], I didn't want to tie him down with a more minimal mixing approach." In the end, McBride settled on Neumann tube 67s on the toms; an RCA 44 along with either a Sennheiser 421 or a FET 47 on the kick; two Shure SM57s on the top of the snare and an AKG C12 on the bottom; C12s on the hats and overheads; and Neumann M50s as room mics.

"John's such a great engineer, so conscientious," Stewart comments. "The studio's got all those amazing vintage amps and microphones and limiters, and the guys who are playing bring in their favorite guitars and amps and things, so basically, as producer, I'm not worried about any of that. I'm just worried about capturing the essence of the song and the atmosphere and making sure the song is a great song, as are the performances. I know the rest of it is being taken care of brilliantly."

As he had on his own Blackbird sessions, Stewart had the Stone sessions videotaped from top to bottom for a future documentary. So the whole process—from Stewart and Stone running down tunes to the band with just acoustic guitar and voice, to the live band tracking, to Stone and Stewart's Martini Time vocals on "Picnic for Two" ("We were so drunk we could barely do a take for laughing," Stewart says)—was captured for posterity.

"The whole session everyone was having a good time," Stewart notes. "In fact, I'm having a little problem editing the documentary together because you don't have that trauma or tension where something goes horribly wrong! People won't believe that all the time we were having a great time, but that's the way it was. Actually, now that I think about it, it's good for people to see that, too."

Since the Joss Stone record was completed, Stewart returned to Blackbird for a third round of sessions the first week of August. This time, he and the band tracked a dozen new tunes—"It goes off a bit psychedelic sometimes, some of it's really rockin', and it has a some delicate moments, as well," Stewart says. "It sounds like a natural progression."

"He's unbelievable," McBride says of Stewart. "He's probably the most creative person I've ever met. He gets stuff done and it's *all* good work. And Joss, she's just so wonderful; a ray of light. You meet her and she makes you feel so comfortable and so relaxed and at ease. It's so great when you can have that type of vibe at a session, yet the quality standards remain extremely high. Just because everyone's nice doesn't mean you can get away with anything," he chuckles.

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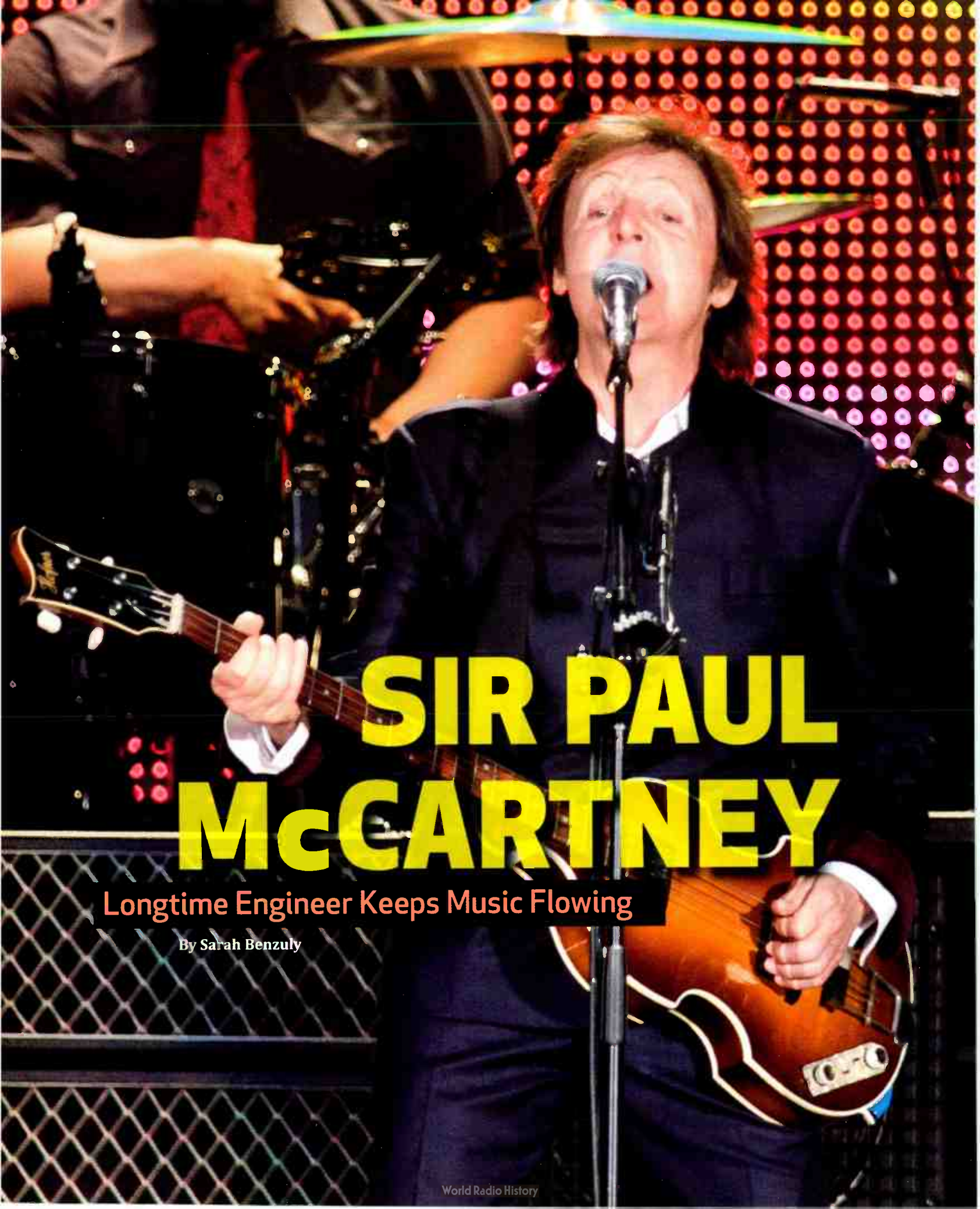
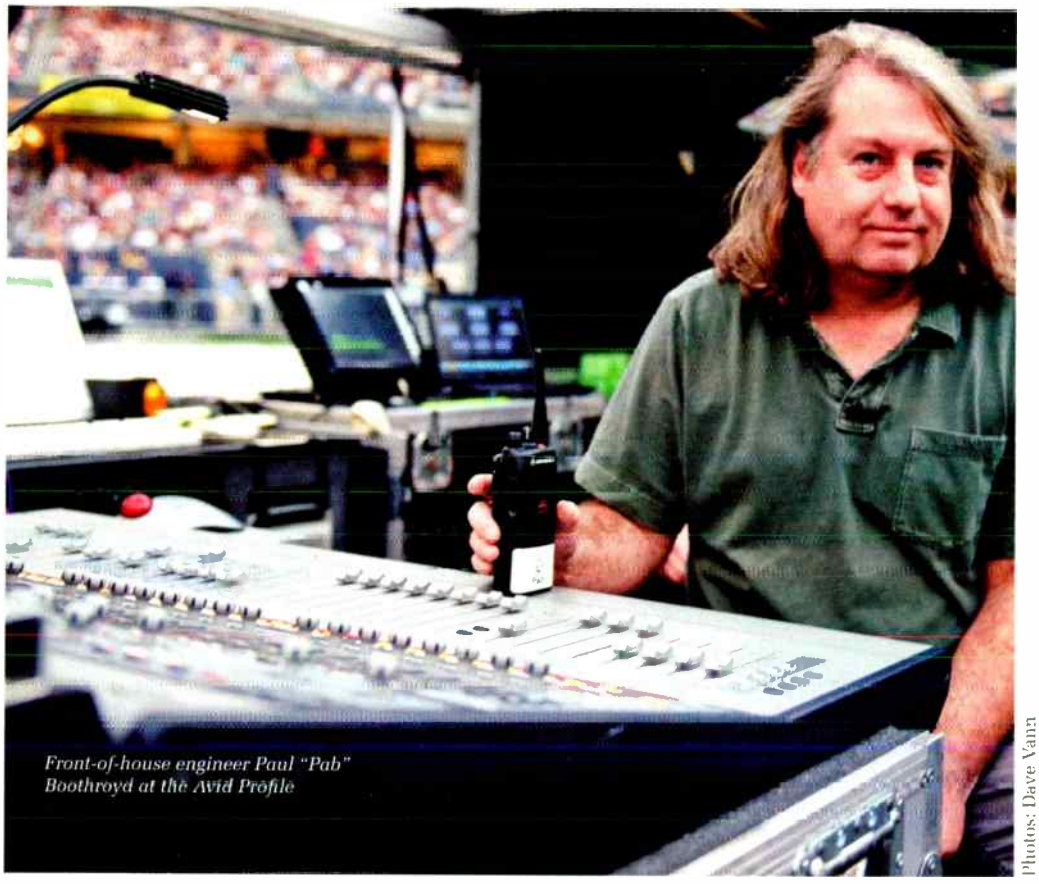


SIR PAUL McCARTNEY

Longtime Engineer Keeps Music Flowing

By Sarah Benzuly

For the past 22 years, front-of-house engineer Paul "Pab" Boothroyd has had the best seat in the house for Sir Paul McCartney's world tours. Granted, he has to work while the rest of the world gets to sit back or bop along, but he wouldn't change chairs with anyone. It's too good a show to miss. *Mix* caught up with the tour in mid-July at Yankee Stadium—McCartney's return to New York City—to kick off his new On the Run tour, which spotlights hits from his near-50-year career.



Front-of-house engineer Paul "Pab" Boothroyd at the Avid Profile

Photos: Dave Vann

CHANGES IN THE RIG

During his tenure with McCartney, Boothroyd has seen numerous changes in technology—some he's brought into his rig, others he's dismissed. "You adapt to new technology that comes out," Boothroyd says. "You take it onboard and see whether it will do anything differently and better. New microphones, recording techniques and mixing platforms. There's so much out there now, it's a vast choice from when I first started working with him. I think I started out with a Midas XL3 and then to an XL4—a great analog console—and racks and racks of toys, and now I'm on an [Avid] Profile, which is a very powerful but small console. It's a good thing because Paul tends to play a lot of different-sized venues—from clubs to really anywhere; I think I mixed inside a cupboard when we were at The Cavern [Liverpool]. It was the only place we could go because the room was so full that we took the doors off of a broom cupboard and I set up in there. [Laughs] You think about all this kind of stuff and you apply what's around to the job, and if it's the right thing for the right job, then you use it.

"When new things come out, it's all exciting and everyone wants to have the latest toy," he continues. "Just like the latest versions of software. It's always good to let something sneak on by for a month or two and wait for the bugs to be out. I see what the gossip is—if people are enjoying it and finding good things about it—then I put my own hands on it and see what I think. And if I think it'll do the job better, than I would slowly move around to it. With Paul, there's a lot at stake when you're doing big shows all the time—40,000 to 50,000-plus people—you don't want to just use something for the sake of using it and then it lets you down."

With the Profile, Boothroyd is making extensive use of the onboard snapshots, especially with the 50-plus songs McCartney plays each day. "I have many songs on snapshots, which puts everything in order very quickly," he says. "Our show is about three hours long, and Paul will soundcheck every day and he'll play for about an hour and do different songs for a V.I.P. audience during soundcheck. Four hours of music just in a day and covering different songs; it's good to recall from a list and go straight into it a bit more accurately than just doing it manually. With the different sounds and eras of his music, I've built in different tweaks that put the song immediately into the character of when it was recorded. So snapshots are really useful for those different EQs on vocals, reverbs, et cetera."

As for effects, Boothroyd employs a general vocal reverb that he'll tweak per song—a bit longer or a little more pre-delay. "Paul has basic effects; he likes his ADT delays, a little bit of Harmonizing on BVs, an Eventide HP5000 pitch-shift/delay just to give a bit of shimmer and some mono delay on some songs. Toms reverb, snare reverb and that's about it. Everything's onboard; it's what the desk can offer. Thinking about, 'Maybe I'll be in a cupboard' theory, it's great. Also traveling a lot with him, all I really need is the console. I just keep it all onboard now and I don't think anything suffers for it."

STADIUM-SPECIFIC P.A.

The slimmed-down FOH gear is provided by Clair Global, a sound company McCartney has worked with since its ShowCo days. Boothroyd works extensively with the company's M.L. Procise, whom he calls his "partner in crime." In addition to the gear, Clair Global also has an audio crew in force—FOH and monitor techs, as well as system tech Chris Nichols, with whom Boothroyd had worked on previous AC/DC and Paul Simon tours. "We're in a stadium mode, so with delays and delay towers, there's a lot going on, and we have to get in, get it up fast and make it work. Great crew," enthuses Boothroyd.

The tour is using the latest version of the Clair line array, the i5. Boothroyd has used this type of rig on McCartney since the introduction of the i4 and has grown with it. "The i5 is a good, tough P.A. for doing a lot of outdoor shows, which is what we do. It's fine in arenas, also," says Boothroyd. "We use the new iDL cabinets on the delay towers, which are great. We've been getting really good results—the promoters and Barry Marshall, our tour director, and our production manager Mark Springs constantly walk the buildings and check that everything's going okay, and they come back with their smiling faces and give us glowing reports of how it's covering the venues.

"We're doing ballparks at the moment, which are yet another shape," he continues. "The mix position is normally on second base. It's been great, I can't complain. With the i5, you can change various angles of the boxes and shape of the array. Clair has a shoot program where you take measurements of the building with a laser measure and you put it into a program and it gives you the different angles you need to set the array to. So we shoot each venue as an entity and build the P.A. accordingly. That's

pretty important because you don't want to be firing at ceilings or glass walls if you can help it. "

Being in ballparks, do Boothroyd and system tech Nichols have any problem containing the low end? "With Paul's show, a lot of his music isn't really about masses of sub-bass," Boothroyd replies, "and you think about The Beatles' music and it's not really a massive kick drum sound. [We have] a full-range P.A. with a lot of bass coming from the flown arrays, and then I bring in the subs just to anchor that sound, just to give it a bit of feel. That way, I don't want to be battering people sitting in those first rows in front of the sub blocks. I leave the subs off and get the sound going in the flown part of the rig and then just bring in the subs to add a bit of weight. Working like that, you can get the bass a bit more even around the building. I have a method of tuning with my system engineer and we also use some of the other special bass frequency-controlling programs that Clair has developed, which adds to any evenness, as well."

MICS AROUND THE STAGE

While Boothroyd has changed up his fair share of consoles during the years, there are some things with a McCartney tour that just don't get messed with—namely, his vocal mic: a Shure 58A. "Paul's very old school and he doesn't need to get too crazy with stuff; if it sounds fine, he's happy with it. And he' familiar with a 58 and how he sings with it." All background vocals (Paul "Wix" Wickens, keyboards; Rusty Anderson, guitar; Brian Ray, guitar/bass) except Abe Laboriel Jr. (drums) are 58As; for Laboriel Jr., Boothroyd employs a 57A due to proximity.

"Drum mics I might experiment with and have done," Boothroyd says. "I like the Audix range—D6 in the kick, D4 on toms, i5 on snare. I've had great success with them. For cymbals, I've got DPAs. We have massive video screens behind our sets so I didn't want lots of overhead mics and stands cluttering Abe's world; I wanted to keep it minimalistic and let him stand out. He's a character and a big part of the show. He's very visual in the way he plays so I don't leave a lot of hardware around him. I do undermiking on the cymbals and the ride with the DPAs."

Guitars see a mixture of Shure and RODE, while DIs are "everything from Avalons to the Radials," Boothroyd says. "Basically, I try stuff with an individual instrument, and if it seems to make it sound more correct or better, then I pick out one. A multitude of sound around the stage."

CONSTANT RECORDING

Boothroyd is also multitrack recording (Pro Tools|HD rig connected directly to the Profile, tracking about 70 inputs) every show, including soundcheck. And the reason for pressing Record during soundcheck, Boothroyd says, is because "sometimes he'll just jam on a song and he likes to get that down on tape, so to speak, and then it's up to me to make sure it's properly captured. We basically record everything he does. As soon as he steps on the stage, I hit Record and it doesn't stop until he leaves."

In addition to the inputs coming off the stage, Boothroyd includes four shotgun audience mics (placed at the downstage edge of the stage) and a couple of X/Y mics into the mix. There are about eight channels of ambience to capture audience sounds. "We've used recordings for live releases, but I think it's mainly for the archiving side," Boothroyd says. "If it's a special show and we know it's going to be a film shoot and we'll be multitracking, then we probably will get a redundant Pro Tools rig—or I become the redundant rig! [Laughs]—as a safety and we'll add more audience mics, et cetera."

After so many years working with McCartney, Boothroyd has the artist's sound dialed in—with or without technology updates. The two have formed a wonderful professional bond that goes beyond the mixing board. "It's a privilege because he's such a nice guy anyway," Boothroyd says. "He's just a very professional, talented person. He's conscientious about his performance yet never forgets music should be about fun, and when he's up on that stage, he's enjoying himself. We have our little banter during soundcheck with talkback mics: Being a fellow Liverpudlian, we go off into our little accents and jokes. It's great and a privilege."

Sarah Benzuly is *Mix*'s managing editor.

Bob Rock

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Ask Eddie

By Eddie Ciletti

IN SEARCH OF: SEMICONDUCTORS

The Quest for the Perfect Datasheet

Many of the questions I receive on a regular basis involve the often-frustrating process of searching for replacement parts. This month's reader question comes from someone who is also a friend. Darron Burke of Makeshift Studio teamed up with local Boston-area artist/technician Kevin Micka after a series of emails did not reveal the hidden secrets of a troubled unit.

KEVIN'S QUESTION: How do I find compatible replacement parts for my dbx 165 compressor/limiter?

I did my best to provide several options. But before getting specific on sleuthing for the dbx, a bit of background is in order. Back in the day, vacuum tube and semiconductor cross-reference books ranged in size from small "bibles" to big-city phone books, then evolved into software (on floppy) and eventually migrated to the Net. Google and other search engines are often a better resource than dedicated tools, provided you know what *not* to click. What you really want is a free "datasheet" from the device manufacturer that offers pin-out and operating parameters. Manufacturers include National Semiconductor, ON Semi (formerly Motorola), Fairchild and Texas Instruments (TI), to name a few.

Zillions of semiconductor devices have been made during the past 60 years. The country of origin is often identifiable by the prefix: 2N (U.S.), 2S (Japan) or BC (Europe). Transistors have three legs—Base, Emitter and Collector—and come in all shapes and sizes to accommodate a wide range of power and gain requirements. Old parts are discontinued and replaced by equal or better parts, which can be a challenge for search engines because the improved specs are not easily reconciled against the original. When in doubt, the original's pin-out can often be determined by following circuit board traces back to the next component. Make a drawing and compare with the replacement part.

SEMICONDUCTOR TEST

Nearly all multimeters have a diode-junction test mode. (See Fig. 1.) A transistor is essentially two diode junctions linked at the Base. Some multimeters have a transistor socket that tests for static hFE. With the multimeter in Diode Test mode, connect the probes to the Base and Emitter of a known-good transistor. If there is no reading, reverse the probes for the transistor polarity (NPN or PNP). When correct, the junction voltage appears (0.3 volts for germanium, 0.6V for silicon). The voltage is temperature-sensitive and not exact. Now move the Emitter probe to the Collector and get a similar reading. There should be no reading when the probes are reversed. There should also be no reading between emitter and collector in either direction (polarity). When all else fails, read the multimeter manual.

Figure 1: This multimeter tests diode and static transistor hFE.

BACK TO THE QUESTION

dbxpro.com has an extensive collection of "classic" and "vintage" manuals, and product manuals from that era often included schematics. The schematic downloaded from the dbx site differed from the one in my library, in that all of the IC op amps and transistors had factory part numbers, which are not at all compatible with cross-reference libraries and datasheets. The one in my collection had standard part numbers. Neither schematic has great resolution—I was not able to "decode" the LM308's factory number. This is not a huge problem because the part numbers are usually on the components themselves, and so with the schematic and the unit side-by-side, you can sort it all out. (See Fig 2.)

The parts in question were the op amp OA11 (LM308) and transistor Q13 (dbx142081 = BC453). As mentioned in my blog, the National Semiconductor site had the original LM308 datasheet and a recommended replacement and its datasheet. But Kevin and I both had trouble finding any BC453 info.

I scrolled through Google's search results until something promising showed up at alltransistors.com, which is a new site to me. There was no "official" datasheet, but the operating parameters in the table have nearly everything you need to know about the BC453,

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except for its pin-out, which cannot be assumed (alltransistors.com/transistor.php?transistor=23213). By the prefix we know it's a European part—or is it? The manufacturer is listed as Toshiba. The BC453 is a silicon NPN transistor in a TO-92 package. At 30V max (between collector and emitter), it's a low-voltage device capable of 300 milliWatts (mW) dissipation. It has a "forward-current transfer ratio" (aka, "beta" hFE or current gain) of 110 minimum.

I had no luck finding the BC453 on Toshiba's site, but here's where it gets easier. Most parts distributors—like Allied, DigiKey and Mouser—include datasheets on their sites. Their geeky search engines suck so avoid narrowing the search parameters too much; it's better to have several pages to sort through than no pages at all. None of the suppliers listed the BC453, and the first narrow search on Allied yielded only an NTE 289. (NTE's numbers do not relate to device manufacturer's numbers.) DigiKey provided at least three possible contenders—2N4401, 2N3904 and MPS-A06—that Allied also carried after I relaxed the search parameters. From Mouser, the BC-548 was added to the list. All have better specs than the original, beta being the one parameter that should be close to the original. All datasheets were downloaded into my library.

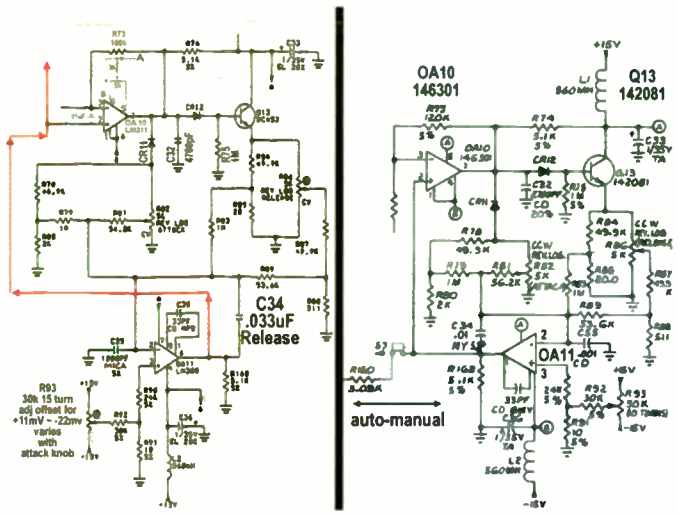

Figure 3: Two schematic excerpts, same circuitry. The left version has actual op amp and transistor part numbers, the right version has factory part numbers.

One final note about the dbx 165: The sidechain goes through two switches! On most signal processors, the audio signal path (AC) is pretty straightforward, but the sidechain comprises DC circuitry that is not as easily negotiated. (The sidechain is what turns the audio signal into a control voltage that can be manipulated by ratio, attack and release.) We know what audio sounds like through a 35-year-old switch or pot, but we can't hear what happens to this important DC signal. From OA11 (LM308), the signal goes to OA10 (LM311 for attack/release) and then through the Auto-Manual switch (ouch-1), followed by OA14, OA4 and the master/slave switch (ouch-2) before the journey ends at the VCA.

Ask Eddie Ciletti whatever you want at blog.mixonline.com/mixblog/category/ask_eddie.

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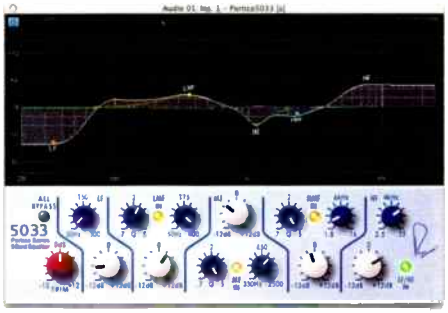


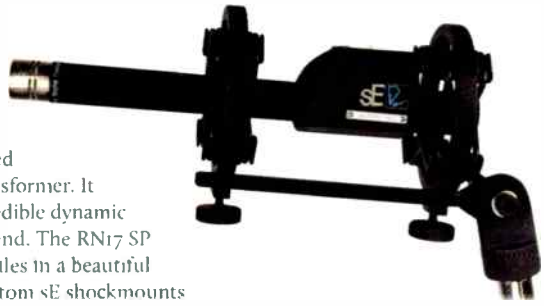
STEINBERG/ RND PORTICO 5033, 5043 PLUG-INS

Colossal Collaboration

Steinberg (steinberg.net) has released the RND (Rupert Neve Designs) Portico 5033 and RND Portico 5043 ($799, bundle), two signal-processor plug-ins reflecting the close cooperation between Rupert Neve, Yamaha and Steinberg. The RND Portico 5033 is a 5-band equalizer with three fully parametric filters and one band each of high- and low-shelving filters. The RND Portico 5043 plug-in is a high-end compressor featuring two entirely different characteristics: feed-forward and feed-back. By incorporating the punch, warmth and clarity of its hardware counterpart, this plug-in promises uncompromising compression quality for various applications. RND Portico 5033, RND Portico 5043 and the 5033/5043 bundle are available as a boxed version from authorized Steinberg resellers or as boxed and download version from the Steinberg Online Shop.

SE RN17 SP MICROPHONES

Proud Pair



sE Electronics (fingerprintaudio.com) has released another mic in collaboration with Rupert Neve. The SE RN17 SP ($3,149) comes as a stereo pair and features the world's smallest gold-sputtered capsule coupled to the world's largest transformer. It promises extended high frequencies, incredible dynamic range, and a massive, rich and warm low end. The RN17 SP ships with factory-matched cardioid capsules in a beautiful custom wooden box and includes two custom sE shockmounts and a stereo mounting bar—all in a striking, rugged flight case.

SHURE SRH940 HEADPHONES

Cans for You

The Shure (shure.com) SRH940 ($375) professional reference headphones promise to be your headworn everything with accurate frequency response, tight bass and smooth high-end extension with minimal distortion. Their collapsible, lightweight design sports a premium padded headband for superior comfort and portability. Accessories include a threaded, ¼-inch gold-plated adapter, two detachable cables (straight and coiled), a replacement set of velour ear pads, and a zippered, hard travel case.

PROPELLERHEAD BALANCE AUDIO INTERFACE

Integrated Music Creation Solution

Propellerhead Software (propellerheads.se) has released its first hardware interface, Balance ($499). The slick-looking, 2-in/2-out desktop I/O box is integrated with Reason Essentials Software and is compatible with Mac and Windows. Fully USB 2–powered with separate volume controls for monitors and headphones, Balance contains eight input connections to keep all instruments, mics and devices connected and ready to record with the press of a button—without software pop-ups or control panels. Hardware buttons on Balance bring up a large meter/tuner in Reason and also can enable "Clip Safe," Propellerhead's new recording technology that with one click heals clipped recorded audio.

CAD 10TH-ANNIVERSARY GXL MICS

Shiny, Happy Transducers

To commemorate one of its most popular and best-selling lines, CAD Audio (cadaudio.com) introduces the new 10th-anniversary GXL Black Pearl Mics and Studio Packs. Compact and road-rugged, the GXL1200BP ($79.99) condenser features a transformerless design and a fixed cardioid pattern. The GXL1200BP's small size, accuracy and high-SPL capability make it ideal for miking overheads, hi-hats, cymbals and stringed instruments. The GXL2200BP ($99.99) is a large-diaphragm condenser microphone that features a 1-inch gold vapor-deposited diaphragm promising exceptional sensitivity and low distortion. The GXL3000BP ($139.99) features a precision-engineered, 1-inch gold vapor-deposited multipattern (cardioid, omni, figure-8) dual-diaphragm capsule. All the mics come in a black-pearl chrome finish and include a shockmount or mic clip, vinyl pouch and polishing cloth.

ELECTRONAUT M63 PREAMP

Hand-Crafted Gain Machine

The M63 ($3,495) 2-channel microphone/instrument amplifier from Electronaut (electronaut.info) features Lundahl amorphous-core transformers; 63 dB of gain; slow start tube-rectified high-voltage power supply; and phantom power with ramped start/stop action. Other features include two level controls per channel, Sifam VU meters, switchable 20dB pad, small-signal relays with gold-plated contacts, new-production Daka-Ware knobs and an optional custom case.

DNR COLLABORATIVE DESIGNS MIXCONTROL PRO

Promising Processors

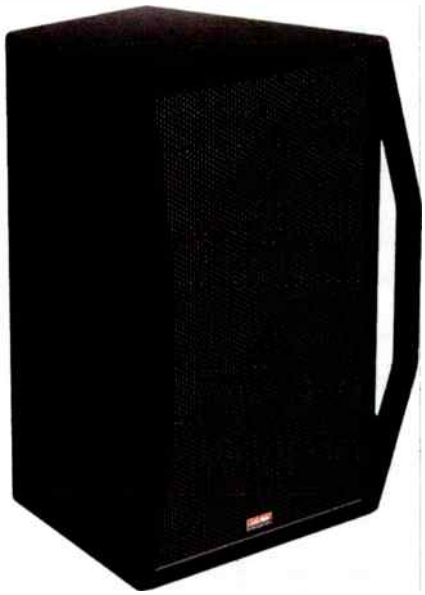
MixControl Pro ($129) is a successor to DNR's flagship mixing plug-in package, offering a complete high-quality, professional channel strip featuring flexible module processing and pristine audio quality. New features and improvements include high-quality oversampling, two new professional UI layouts, three unique analog-style saturation modes and a much more responsive FFT analyzer. Other features include solo for individual EQ bands, three new saturation modes, gate wet/dry-mixing function and full V1 backward-compatibility. MixControl Pro is available for purchase from DNR's Webshop at teamdnr.net/mixcontrol/.

MERGING TECHNOLOGIES OVATION

Outstanding Performer

Ovation ($1,120 to $6,960) from Merging Technologies (merging.com) is a media server and sequencer that provides a new and robust platform for use in any live, fixed install, or TV and radio production. It combines the power of MassCore DSP, virtually limitless I/O and busing, full VST support and complete integration with the Pyramix Virtual Studio editing system. Ovation can be operated as a media sequencer by using its own Show Controller Engine through a powerful, intuitive and fully customizable user interface specially designed to be accessible from any touchscreen or tactile devices, or simply as a pure, "Black-Box"-like, Media Server, transparently remote controlled by all of the most popular protocols.

New Sound Reinforcement Products



EAW VG SERIES

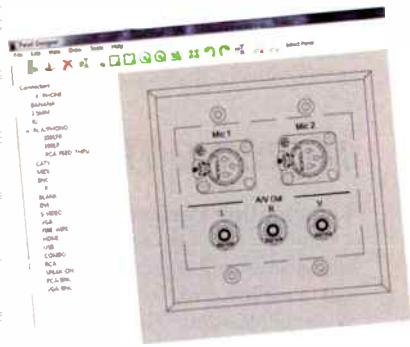
Mix and Match Your System

This new series from EAW (eaw.com) comprises five VFR two-way, full-range loudspeakers (VFR159 15-inch, VFR129 12-inch, VFR109 10-inch, VFR89 8-inch and VFR69 6-inch; all passive); two VFS subwoofers (VFS220 double 12-inch and VFS250 double 15-inch); and three VSM two-way stage monitors (VSM159 15-inch, VSM129 12-inch and VSM109 10-inch). The boxes can be configured as clusters and arrays, matching speaker/subwoofer pairs or standalone units. The VFR159 and VFR129 ship with a 90x60-degree horn that can be field-replaced with a 60x40-degree horn. All models will be available soon in black or white finish.

LECTROSONICS 64-BIT-COMPATIBLE

Upgrade Your System

New 64-bit-compatible software for Lectrosonics' (lectrosonics.com) DM Series processors and Venue receivers includes a new USB driver package that supports 32-bit and 64-bit versions of Windows Vista and Windows 7, as well as 32-bit Windows XP. Also included is the LecNet™2 Driver Installer program, which pre-installs the USB driver package on a PC prior to use. The programs communicate with either the USB or the RS-232-compatible interface built into LecNet2 components. The LecNet2 control panel programs remain unchanged, but the application "Help" USB driver installation topics have been updated. The LecNet2 programs contained in the new distribution are backward-compatible with the old 32-bit driver package. The updates are available as a CD-ROM image (.iso) file download. Once downloaded, the image file is burned to a blank CD-R disk and the software installer can be run as usual. Instructions for using the new USB driver installer are available on the Lectrosonics site.



RAPCOHORIZON DESIGNVISION

Envision the Next Install

With this panel-design program (Windows), users can create custom installation diagrams (rack panels, wall plates, floor pocket inserts, etc.)—no CAD experience necessary. To create a system design, a user simply selects the preferred panel and uses the drag-and-drop feature to place the desired connectors directly on the panel. By using a basic set of design tools, the user can even create a template for engraving. When the drawing is complete, the dealer can email a PDF and an accurate price quote to the tour manager for approval. Once approved, the integrator can email the same design with its full bill of materials to his/her RapcoHorizon (www.rapcohorizon.com) sales representative. The software is available for free download at the company's site.

WORXAUDIO I/O-4

For In and Outdoor Use

With its injection molded, high-impact polycarbonate enclosure, the new small-format SR system from WorxAudio (worxaudio.com) is available in black or white, and includes a standard mounting bracket with weather-resistant, stainless-steel hardware for flexible aiming and easy installation. Geared for use in 100-volt distributed audio systems, the I/O-4 ($230) employs a multi-tap transformer defined for 50, 25, 12 and 5-watt settings. The new I/O-4 may also be easily configured for a standard low-impedance direct input. It uses a two-element array of high-output, 4-inch LF transducers. The horn-loaded HF waveguide (1-inch driver incorporating a titanium diaphragm) is positioned between the two elements. The three-way, full-range bass-reflex enclosure provides Push Terminal connectors at the rear for easy system connection. The loudspeaker's frequency response ranges from 75-19k Hz.

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By Barry Rudolph

INGRAM ENGINEERING MPA685 MICROPHONE PREAMP

High-Gain, Handmade Unit Exhibits Sonic Versatility

Ingram Engineering's MPA685 dual-channel microphone preamp is a large, two-rackspace (14 inches deep) unit that's handmade in the U.S. and features three switchable input-impedance choices and up to 76 dB of gain. Changing the input impedance presented to a microphone by the preamp alters the mic's sound and operation. For the recording engineer, having this ability expands the range of sounds possible from any microphone.

You can order the retro-looking MPA685 in either of two impedance range options. Option 1 has 60, 200 and 600-ohm impedance choices for passive or active mics that sound best working into lower impedances. Option 2 (the unit reviewed here) has 600, 1.5k and 2.5k-ohm choices, and is better suited to condenser or ribbon mics that require higher impedances.

Input impedances are selectable using a front panel rotary switch that alters a switched resistor network on the secondary winding of a custom Sowter mic input transformer. This method "reflects" the impedance change back to the primary and provides the subsequent preamplifier section with a constant impedance load for good transient response, low noise, phase coherency and flat frequency response over a wide gain range.

Each channel of the MPA uses two Ingram-designed, J-FET-based, Class-A gain block stages, while a third module and an electronically balanced output buffer amp drives a Jensen output transformer. These three encapsulated modules use all-discrete components and the same pin-out and voltages as API's 2520 and Jensen's 990 modules.

A front panel 24-position Goldpoint rotary switch sets the gain of the second gain block to optimize its signal-to-noise, dynamic range and transient response predicated upon the mic's output signal level. The knob's "0" center position is unity, and rotating clockwise adds gain while turning the control counterclockwise attenuates gain. The front panel markings are for reference and do not indicate gain in dB.

There is 65 dB of gain adjustment in steps that are coarser (6.5 dB) at the low- and high-gain extremes and finer (2dB steps) in the more used, middle-gain range. The MPA also has a regulated +48-volt phantom-power on/off switch and a 1-megohm FET-buffered DI ¼-inch input with loop-through.

For each channel, there are front panel overload LEDs that light when 1-percent THD is reached. Another rotary switch selects the corner frequency for a 6dB/octave highpass filter. Choices include bypass, 70 Hz or 140 Hz. Finally, a continuously variable output gain control finely adjusts total gain.

PREAMPS X3

The first test was a quick shootout to see where the MPA sits compared to other well-known mic pre's. I built a special four-way mic splitter for the occasion using a Jensen JT-MB-E transformer.

My first A/B/C test compared the MPA to GML 8302 and Neve 1272 mic pre's. I used a Royer 121 ribbon mic on a Fender Champ amp to record a clean electric guitar performance to Pro Tools|HD9 at 96 kHz. The MPA was set to high impedance (2.5k), the +6 gain position, with the output full up, while the GML and Neve were

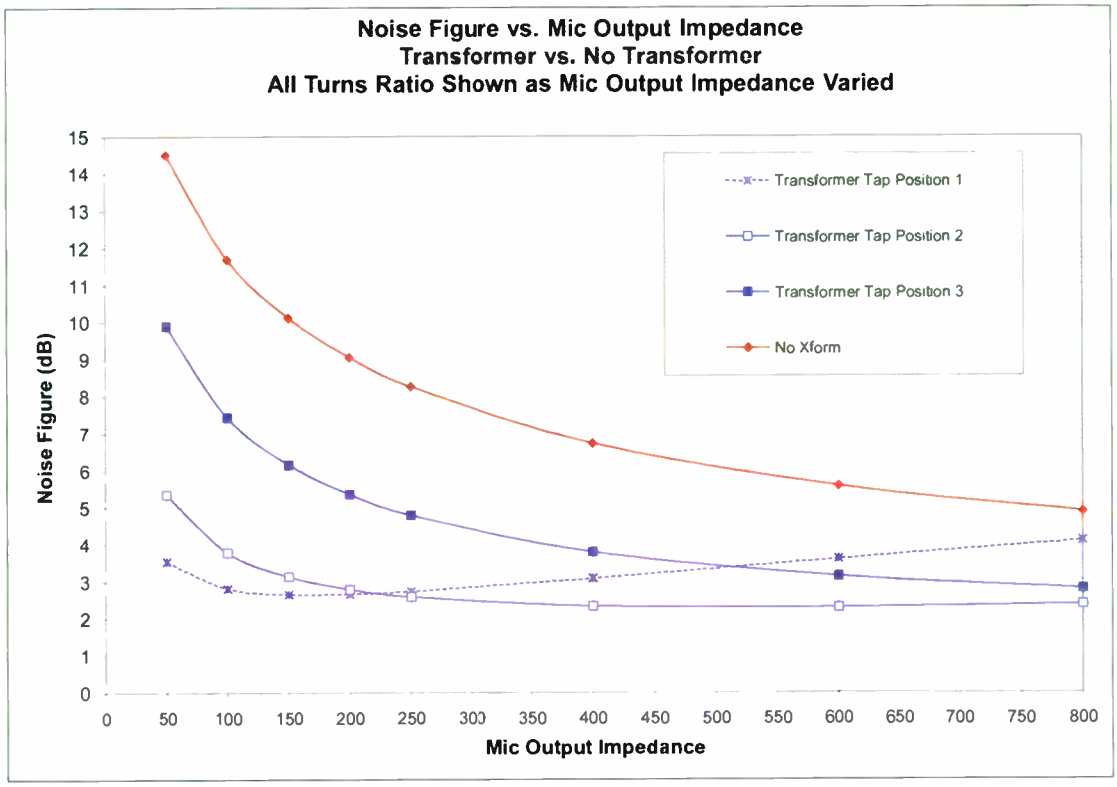
TRY THIS

You can use the MPA685 as both a guitar recording and re-amping system. For typical recordings, use channel 1 for a direct input for a guitar or bass and use that channel's loop-through to go to the amp out in the studio. At the same time, channel 2 will record the mic you place on the amp. For re-amping, it is possible to use either the high impedance or mic XLR input of channel 1 for a line-level feed from a previously recorded track in your DAW. Start with the gain control all the way counterclockwise and turn it up just before the overload LEDs light. I liked the XLR input for its input transformers' coloration when driven hard. Channel 2 is used exactly as before.

both set to 50 dB.

I found the MPA to have a lot of available gain, but at first it sounded thin compared the other preamps. Selecting the Ingram's low-impedance (600-ohm) position changed that right away. The lower-impedance position required more gain up at the +9 position. Now the MPA sound stood right up and was clear, fat and present-sounding. The GML sounded as expected, very clean and clinical, while the Neve was warm, thick and a little dark compared to the others.

For loud crunch sounds, I changed guitar amps but kept the Royer. I was surprised to hear the MPA (still on low impedance) holding up perfectly with gain set down to +1 and sounding big, open, clear and loud. The GML, at 35dB gain, became slightly midrangy and "barky," while the Neve, also at 35 dB, got "spongier"—softer sounding compared to the clean electric guitar tests. Unlike the GML or Neve pre's, the MPA didn't change in



Noise vs. Impedance with and without X-former

sound character with the increased input level.

MPA VOCALS

I took the MPA685 solo for a vocal session using my MXL Revelation tube mic set to cardioid. In general, compared to my other preamps, I found the MPA to be more transparent during peak level moments. One of these moments is just at the point where my loud singer hits his stride right up close to the mic. All preamps sound nasty when overloaded, but the MPA is more forgiving; it sounds better at those moments.

Switching impedances from high to medium to low steps the output level down, respectively. Depending on the mic, I found that I had to bump the gain up two to four clicks when switching to a lower-impedance setting to obtain the same recording level. The sound quality for the same mic is also different; the low-impedance setting, along with more mic gain, produces a warmer and more intimate sound.

Moving to medium seemed to change my singer's mic presence very slightly, with a change in the mic's LF character. Use the high-impedance position and the mic is loaded more like a typical bridging input of a modern mic pre.

Running five or more extras clicks of gain and winding back the output level will produce a "hotter" sound by way of a subtle increase in IM, and, as pleasant as this sounds sometimes, it is level-dependent and inconsistent.

ACOUSTIC GUITAR

I tried a stereo recording of a Martin D15 using a Rode NT4 X/Y stereo condenser. The two channels of the MPA matched exactly in level and sound. I swapped the L/R outs of the mic between channels to check this. This time, the tonal change between high and low impedance was subtle—just slightly warmer in low but more articulated sounding when using the high-impedance position; it just depends on what you're looking for. For the song I was working on, I found the low impedance and about +3 to +5 on the gain rotary with the 70Hz HPF was best.

DI, TOO

I tried the MPA's DI path and again found loads of gain. The front panel "chicken head" gain knob was now at the -7 position for a stock Fender Jazz bass with passive pickups. The sound was clear and precisely the way this bass sounds under ideal conditions. With this much gain available, guitars with low-output piezoelectric pickups would be no problem to amplify with this excellent-sounding DI.

PRODUCT *SUMMARY*

COMPANY: Ingram Engineering
PRODUCT: MPA685
WEBSITE: ingramengineering.net
PRICE: $2,425 factory-direct

PROS: Lots of gain, wide dynamic range, alternate mic sounds via variable impedance, excellent DI.

CONS: Bulky two-rackspace unit.

REDISCOVER YOUR MIC COLLECTION

The MPA685 allows you to rediscover your whole mic collection by way of its three input impedance choices, remarkable dynamic range and its huge reservoir of gain. Add the super-DI path, and you have an excellent, professional and worthwhile tool ready for any recording task.

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

PEAVEY REVALVER MK III.V

A Greatly Expanded Variety of Guitar Tones at Your Fingertips

When it bowed a couple of years ago, Peavey ReValver MK III guitar-amp simulation software garnered a lot of rave reviews for its tube-like tone and the ability to tweak its virtual electronics right down to the component level (for example, modifying the plate load of its simulated tubes). ReValver MK III.V—a paid upgrade from MK III—adds seven new amps, the Budda Budwah effect and Peavey VCL-2 compressor modules, to the mix. (See Fig. 1.) It also more than quintuples the number of convolution-based speaker simulations to 778, counting impulse responses that incorporate variations on microphone choice and position for the same cabinet.

Figure 1: ReValver III.V adds several new amps, the Budda Budwah stompbox, the Peavey VCL-2 opto compressor and a dizzying multitude of new impulse responses to the popular guitar-amp simulator.

ReValver MK III.V (Mac/Win) supports AU, RTAS and VST plug-in formats, and an included stand-alone version implements full MIDI mapping. I reviewed the AU plug-in in MOTU Digital Performer Version 7.21 using an 8-core Mac Pro running Mac OS 10.5.8. My sonic evaluations were made playing a '62 Strat routed in series through a Demeter tube direct DI box, Millennia HV-3D preamp, Apogee Rosetta A/D and MOTU 2408mk3 I/O box (digital input).

LOOKING BACK AND FORWARD

For the uninitiated, ReValver allows you to chain together scores of stompbox, preamp, power amp, amp (preamp and power amp), cabinet and effects modules in both serial and parallel configurations. Drag and drop modules allow you to change the order in which they are chained. You can add tone stacks and swap out or add virtual tubes to your amp sims and save the result as a custom impulse response (a stereo, 44.1kHz WAV file) to load into a speaker-simulation module. It's all very intuitive.

With the addition of its new modules, MK III.V now offers simulations of 21 stompboxes, 21 amps and 11 effects. (The Effects browser also includes a VST host module, which allows ReValver to use third-party VST plug-ins with AU and VST hosts.) In addition to its hugely expanded library of convolved sims, MK III.V also includes the same modeled speaker emulations (called Speaker Construction Sets) as offered in MK III.

ReValver MK III.V offers both a 32-bit mode for real-time processing and a 64-bit, 4x oversampled "mixdown" mode for bouncing the track offline. (Mixdown mode yields very high-resolution processing, but is too CPU-intensive for real-time use.) Both modes sound great.

More importantly, the MK III.V update still doesn't allow you to synchronize any time-based effects (delays and reverbs) to your host DAW's tempo. Only the stand-alone version of MK III.V can automate module parameters using MIDI; the plug-in versions of MK III.V support automating its parameters using your DAW's facilities. ReValver lacks undo and redo functions.

So the MK III.V upgrade is all about the new tone palettes that it brings to the party. For that reason, I'll focus this review on my impressions of the new modules, starting with the Redhot amp.

AMPED UP

The highly musical Redhot amp module emulates the Orange AD30. It has two dual-stage channels. Channel One is a bit brighter and grittier than Channel Two, yet manages to sound ultra-smooth and tube-

TRY THIS

Click on an amp module's "+" sign. In the Module Tweak GUI that appears, click on the icon for the output-stage tube. In the upper-left section of the Output Stage dialog, click on the Character drop-down menu. Choose from several different presets that emphasize the bass, midrange or treble band for the tube distortion. Unlike with inserting EQ after a speaker module, the Character tweak will not affect the undistorted component of your sound.

like, even when pushed hard on rock solos. Channel Two generally has a warm and thick tone that is perfect for cleaner rhythm guitar parts and very pristine arpeggios. But put a preamp module in front of it, and it too can really bark.

The Peavey Sensation 20 amp module is a single-channel affair with a vaguely similar vibe to the Redhot amp's Channel One when pushed hard. It doesn't sound as creamy and full-bodied as the Redhot and can sometimes seem a bit glassy on clean and bright settings. The Sensation 20 module includes onboard reverb.

The Peavey Masterpiece 50 amp offers two channels: one clean and the other overdriven. The clean channel gave nicely crunchy chords, but I couldn't make it sound pristine enough to produce bell tones. The overdriven channel cranked out gorgeous-sounding timbres for lead solos—full-bodied and creamy, with gobs of sustain. It accomplishes this by adding two stages of gain to the clean channel when you activate the module's Lead switch. On the downside, the module's onboard reverb was apparently broken: On its maximum setting, I could barely hear any effect, even on a soloed track. (Peavey is fixing the problem in a future software update.)

The Peavey 3120 amp module has three channels: Clean, Crunch and Ultra. I liked this module for overdriven rock tones but not much else. The Clean channel sounded very discordant; I can't imagine ever trying to use it to coax pristine tones. The Crunch channel easily provided enough overdrive for classic-rock guitar solos but I couldn't clean it up enough for blues chording. The Ultra channel produced over-the-top but very smooth distortion that sounded great.

Figure 2: The versatile Demon amp module offers three channels that together range in tone from sparkly clean to brutally distorted

Figure 3: ReValver MK III.V offers two superb Budda amp modules. The Budda Drive 18 Series II is shown here.

The versatile Diezel VH4 amp module (modeled after the Diezel Demon; see Fig. 2) has three channels, and it offers superb tones ranging from sparkly clean (Channel One) to massively distorted (Channel Three) and all timbres in between (Channel Two). You can get more sustain and attitude with the Diezel VH4 than with the Redhot amp, making it a prime candidate for laying down hard-rock tracks. A global mid-cut control provides far greater attenuation of midrange frequencies than the Middle tone controls dedicated to each channel; it's your ticket to a heavily scooped sound.

I really love the Drive 18 Series II and Super Drive V20 amp sims. These two modules sport identical control sets. They each provide separate gain controls for their Rhythm and Drive channels. It's a little harder to coax super-clean tones out of these sims, but you can get there by starving their gain controls almost to the point of killing all sound and cranking ReValver's output gain in the Title module. The crunchy and overdriven sounds are some of the best ReValver has to offer—warm, smooth and tubey. The Super Drive V20's Drive channel generally has a thicker sound than that produced by the Super Drive 18 Series II, which sounds tighter and more present.

SPEAKERS AND PROCESSORS

The amp modules' inherent sound can be modified far and wide using an almost unlimited supply of modeled and convolved speaker simulations. For example, the British Collection of stock impulse responses includes, among many other offerings, single-mic setups for a Redhot cab with a single 12-inch speaker. Your choice of virtual mics includes a Sennheiser MD 421, Royer R-121, Shure SM57 and Neumann U87, placed at zero, two or seven inches from the speaker cone or edge. If you can't get the tone you want from this deep of an impulse library—not to mention the abundant modeled speakers—it's time to hang it up and take up clarinet.

The new Peavey VCL-2 compressor module emulates an opto-electronic design. Threshold and gain controls dial in compression or limiting, depending on a switch setting. Placed after the Budda Drive 18 Series II amp module (see Fig. 3) and one of ReValver's default cabinets, the VCL-2 produced beautifully tight and slappy chords that brought out my inner Doobie Brothers. Inserting MK III.V with only the VCL-2 module loaded on a lead-vocal track, I got decent results: Dynamics were smoothly reined in, but depth suffered a bit more than when using my premium opto-compressor plug-ins.

The Budda Budwah is a stompbox effect modeled from the Budwah wah-wah pedal. While it can't produce sounds as extreme in range and resonance as ReValver's legacy Wow-Wah stompbox, the Budwah is much more musical, realistic-sounding and easy to use. Mouse-drag the virtual footpedal left and right to modulate the filter. Turn up the Curve control to make the pedal more responsive for the same amount of travel. Because the ReValver plug-in doesn't respond to MIDI, I simply automated the footpedal's action in Digital Performer.

BIG SONIC UPGRADE

MK III.V provides new tone-sculpting amps that, taken as a group, allow you to alternately dial in clean, slightly edgy, mildly distorted and severely overdriven tones with equal finesse. Not every amp is a home run, but together they constitute a grand slam. Add the musical Budwah and VCL-2 modules and the hundreds of new impulse responses of miked speaker cabinets, and ReValver MK III.V presents a very potent allure to both new amp-sim buyers and those looking to upgrade from MK III.

Mix contributing editor Michael Cooper (myspace.com/michaelcooperrecording) is the owner of Michael Cooper Recording in Sisters, Ore.

PRODUCT *SUMMARY*

COMPANY: Peavey
PRODUCT: ReValver MK III.V
WEBSITE: peavey.com
PRICES: $249.99 MAP; upgrade from MK III:, $99.99

PROS: Generally outstanding sound quality. Extremely versatile. Intuitive operation. Competitively priced.

CONS: Can't sync effects to host's tempo. Plug-ins can't be controlled via MIDI. No undo/redo.

WAVES AUDIO ONEKNOB PLUG-INS

Seven-Effect Bundle for One-Stop Tweaking Delight

As the name implies, the OneKnob Bundle from Waves is a collection of plug-ins designed for quick and simple operation through use of a single knob (though some also include a pushbutton). The package includes seven plugs and is available only in Native format, supporting sample rates up to 96 kHz. Two OneKnob plug-ins—Louder and Pressure—support sample rates up to 192 kHz. An iLok is required for authorization.

The OneKnob Bundle includes Brighter, Driver, Phatter, Filter, Louder, Pressure and Wetter; each name accurately describes the plug-in's function. You can automate all OneKnob plug-ins, which require minimal DSP resources. For example, in one particular 88.2kHz Pro Tools session, I had 55 instances of various OneKnob plug-ins, which collectively used 50 percent of my computer's CPU resources.

All OneKnob plugs are a breeze to use, though I found it odd that they do not appear under their respective menu categories in Pro Tools. For example, you will find Pressure under Other > OneKnob rather than in the Dynamics plug-in menu.

LOUDER, DRIVER, BRIGHTER

I'll start with the simplest of the bunch, Louder, which employs compression and peak limiting to make tracks louder by as much as 24 dB. Think of it as a way to take a track "up to 11." You may not need this feature every day, but when you do, it works. At most settings you won't hear Louder doing anything other than increasing gain, but as you approach 10, you'll start to hear a bit of added crunch.

Driver creates overdrive on a track. Crank it up on a vocal track and it sounds like you plugged a vocal microphone into a Marshall amp. Driver should be used carefully on sounds that contain substantial low-frequency information because it cuts the bottom end progressively as drive is increased. Though I liked the way it sounded on electric bass, it thinned out the bottom so you'll need to either feed Driver from an effects send and bring it back on a return, or duplicate the bass track and insert Driver on the duplicate.

Sorry to say that Brighter will not make you smarter, but it will add sparkle to a track. This plug-in definitely helps tracks poke through a mix, but I wasn't crazy about it on snare drum or male lead vocal, where it sounded papery. On a female jazz singer, it was wonderful, providing air and immediacy that was previously lacking. It also worked well on overheads in combination with several other OneKnob plugs (described below).

Waves' OneKnob plug-in bundle comprises seven DSP-sipping processors

PHAT AND WET

There is no way to describe Phatter other than to say it makes tracks Phat (note the capital P). It adds weight to electric bass, whump to kick drum or floor tom, and slam to synth bass, but somehow it does not turn these sounds to mush, even when cranked way up. It works well on male or female vocal, as long as you don't overdo it. In one case, Phatter put the warmth back into an acoustic guitar track that sounded overly bright and lacked body. When I processed drum overheads with Phatter, Brighter and Pressure, it produced outstanding results.

At its lowest "On" setting of 0.1, Wetter adds a sweet ambient/early reflection effect, placing sounds in a space without calling attention to itself. Moving the knob to 0.2 adds a subtle echo with a repeat-and-a-half and increases the size of the environment. The echo is apparent only on percussive sounds; on most sounds, it blends with the reverb. As the setting is increased, the echo does not change but the room gets larger, progressing to a hall. At 3.5, the high end can become grainy—again, most apparently on percussion.

I would describe Wetter as a serviceable reverb. It's certainly no competition for Waves' IR1, but there is a hidden benefit here for inexperienced engineers: Even when Wetter is maxed, it does not become uncontrollably sloppy. My students often ask me how to improve their mixes, and many of them don't pay attention to reverb decay time, so they aren't aware of the mud that long reverb adds to their mixes. They'd be far better off using Wetter because it won't add that rolling decay, which can destroy clarity in a mix.

TRY THIS

Here is a cool effect to use for a drum fill/breakdown: Bus your drum tracks to a stereo aux track in Pro Tools or Digital Performer. Insert Filter in the top insert slot and Pressure in the second slot. Set the Filter resonance to Moderate and start with the knob at 10 (fully clockwise). Set Pressure to Unity and set the knob to 0, and enable Record on the plug-in's automation. Just before the breakdown starts, quickly turn the Pressure knob to 3. After the fill ends, stop the transport and set the automation for Pressure to Play. Leave the automation for Filter in Record. Take another pass, and when the fill starts, sweep the Filter knob slowly counterclockwise. You'll hear a resonant filter sweep on the entire drum kit. As the fill or break ends, return the Filter knob to 10. (Filter is now fully open.) Then set the plug-in automation to Play and listen back.

FEEL THE PRESSURE

OneKnob's Pressure provides three modes of compression: Unity, Pad and Boost. Each mode creates distinctly different compression with varying attack and release times. Boost appears to have the quickest release, Unity a medium release and Pad the longest, which proved very smooth for vocals. Settings past 5 can accentuate mouth noise, with Boost being the biggest offender. Applying Pressure to room tracks on a drum kit was awesome. Settings of Unity and 10 produced classic pumping, while 5 produced a smooth, sweet compression. With Boost set to 10, grace notes in between kick and snare hits popped out of the mix. Using the Pad mode set between 8 and 10 produces dirt (i.e., distortion), but back it down to 5 and you'll barely know it's there. Inserted on vocal or guitar in Pad mode, Pressure lets a track sit nicely on top of a mix.

Pressure operates in stereo, but there's no way to link two instances on separate tracks. For example, in one mix I had separate tracks for left and right drum overheads; it would be nice if Pressure would allow one channel to key compression in the other to maintain stable imaging. As workarounds, you can either merge the two tracks into stereo, or copy the first instance of Pressure to the other track.

The OneKnob plug-in that is by far the most fun is Filter, a single-band sweep filter with four resonance settings: None, Moderate, High and Extreme. Filter makes it so easy to create telephone voice, wah and swishy-sweepy effects that it's tough to resist. The ability to automate Filter's sweep is very cool. You won't need multiple automation passes with several EQs to create dynamic equalization effects, like "low fi-ing" a mix. At settings up to 3, Filter is in the family of a lowpass filter. Moving through the middle settings, it begins to sound more like a bandpass filter, and at the highest settings you get a sweeping high boost. Setting Filter to 2 and Extreme Resonance on a mix creates the sort of low-frequency resonance you hear when someone with an obnoxious car stereo passes you on the street.

ONE-TRICK ONEKNOB?

All of the plug-ins in the OneKnob bundle are useful, some more than others. The highlights are Filter, Phatter and Pressure, all of which leave me thinking, "Is there anything that these don't sound good on?" The pricing is very attractive, and though the lack of extensive parameter control may put off tweakheads, the speed and ease of use make the OneKnob Bundle a very attractive proposition.

Steve La Cerra is *Mix*'s sound reinforcement editor and front-of-house engineer for Blue Öyster Cult.

PRODUCT *SUMMARY*

COMPANY: Waves Audio
PRODUCT: OneKnob
WEBSITE: waves.com
PRICE: $400

PROS: Easy to use. Minimal DSP load.

CONS: Advanced users will be looking for more parameter control. No way to link plug-ins on mono tracks.

By Brandon Hickey

ROLAND VR-5 A/V MIXER AND RECORDER

Impressive Desktop Video Studio

The VR-5 features touch-screen operation and easily managed audio controls.

The boom in streaming video has opened up all kinds of new opportunities for audio professionals, and the tools are coming out to make quality audio-based video productions. Case in point: The Roland VR-5 provides a simple, one-box strategy for full-on, multi-camera video production with audio. The features not only negate needing a generous complement of hardware, but also a specialized set of skills and knowledge. With applications ranging from multi-camera capture of live events to live switching of video displays during concerts or church services, the VR-5 can capture a production to an SDHC card, generate live analog or HDMI video, or connect through USB to a computer for instant streaming on the Web.

The VR-5 provides a five-source video switcher, an audio mixer and an onboard player/recorder. Small LCDs for preview and program monitoring are built into the top of the unit. The video switcher is impressive on its own. Three different analog video sources can be connected with either BNC composite connections or S-Video 4-pin mini-DIN-style connectors. This obviously rules out the possibility of HD connections, and to that end, the unit is designed to operate in a maximum resolution of 480p. In addition to its video inputs, the VR-5 has a PC input using a 15-pin D-Sub-style connection. It can receive higher-definition resolutions (up to 1,600x1,200 at 60 Hz) but will automatically conform this to the native 480p operation inherent to the unit. Also, the unit can switch over to playback of files from the built-in SDHC card reader or the USB jack. While the five sources are toggled, the integrated frame synchronizer relieves you of any need to synchronize the refresh rates of the sources in advance, providing seamless switching between feeds.

Each of the five sources can include its own audio, with each of the video connections being accompanied by L/R RCA inputs, or 1/8-inch mini-TRS in the case of the PC input. Also, a separate pair of analog inputs are available, using ¼-inch TRS or XLR connections to accommodate either an additional pair of stereo lines or microphone signals. Each of these signals, as well as the audio output of the built-in player, feed an audio mixer featuring four stereo faders (sources 1 through 3 and the onboard player), two mono faders for the auxiliary inputs and a potentiometer to balance the PC input. The main output level control is also a potentiometer.

Along with the built-in video monitors, BNC-style outputs connect the program and the preview monitor to outboard displays. Secondary connectors for programs using BNC, S-Video and HDMI allow the finished product to run to an external recorder. These connections would also be useful in feeding the picture to a video matrix that feeds large in-house displays in a house of worship, for example. Meanwhile, audio outputs include the built-in headphone amplifier with a convenient connector and level control tucked neatly under the lip of the front edge. The program output simultaneously feeds a pair of unbalanced RCAs and balanced XLRs, and passes through the HDMI output. MP4 video with MP3 audio can be recorded to the integrated SDHC recorder at 480i/60 Hz or 576i/50 Hz in qualities ranging from 2 Mbps to 6 Mbps, falling shy of DVD quality but providing quality that is certainly sufficient for Web distribution.

Streaming through the USB connection does not allow you to record the program directly to an external

TRY THIS

While the Roland VR-5 is adept at live capture for instant streaming, it also integrates well with computer-based movie-editing software like Apple's iMovie or Sony Creative Software's Vegas. One of the most time-consuming tasks when capturing live, multi-camera video is editing. With the VR-5 on-hand for the initial shoot, you could edit live during the event, then upload that feed into iMovie or Vegas for integration with B-roll, other audio and video feeds and stills, making for a quickly produced, slick, Web-ready production.

hard drive. Instead, video-capture software running on a computer can be used to collect or Webcast the video with only a minimal delay. It's hard to finger the culprit, but streaming video into QuickTime Pro crashed repeatedly on the QuickTime side. In cases where it was successful, QuickTime recorded for long durations with pleasing quality. Fortunately, the unit could simultaneously stream through the USB output and record to the internal SD card, so for me QuickTime was just a backup.

The video mixer couldn't be easier to use. The LCD preview monitor is touchscreen-operable and allows you to point and touch what you want to see. Otherwise, buttons aligned below the corresponding audio faders do the job, redundantly. The transition between shots is selectable between a hard cut, crossfade or wipe. The wipes and crossfades offer different duration settings, but no manual, fader-style control. There is not a great deal of extra real estate on the control panel to offer that type of control, but I'd have settled for a potentiometer. I loved the option to slave audio switching to automatically follow video switching. In that case, audio crossfades coincide with video crossfades while switching sources, or hard cuts are accompanied by hard audio switches.

BELLS AND WHISTLES

The video mixer features advanced functions like compositing and even a built-in chrominance or luminance keying section. With the compositing function, two sources can share the screen in a variety of ways. For one, a split-screen option allowed the screen to be divided in half, showing a different source on each half. The split could take place vertically or horizontally, with a variety of stretching or cropping options selectable through menus. Another picture-in-picture style of compositing offered a good amount of size and positioning options. With the chroma-keying, green or blue backgrounds could be selectively extracted, and with the luma-keying, either black or white backgrounds could be removed. These effects could be applied to either the video signal arriving at the PC input, video or graphics off of the SD Card, or the "user logo" stored in the system's onboard memory. This was very useful as I was able to make a series of title slides in Apple Keynote and superimpose them on top of the video backgrounds during production.

The back of the unit is packed with a variety of I/O and a V-Link connection to other Roland gear.

With so much going on, I found it helpful to have a connected external video monitor showing the live program output. While the small onboard screen is a blessing, it's very hard to accurately gauge what you are putting out while viewing the 2-inch display. Also, the boundaries of the onboard display seemed to fall short of the actual program output. The small screen for previewing the four selectable sources, however, seemed sufficient to judge whether a camera was ready to go live. It could also be taken over by a "PC Preview"; in other words, displaying the graphics being outputted by the connected laptop. One disappointment regarding this feature was the inability to preview the chroma- or luma-keying functions. If the gain control on the keying circuit is not set just right, cheesy artifacts result. Not being able to double-check the keyed version of the graphics before going live was nerve-wracking.

THE AUDIO

I was impressed with the VR-5's sound quality. The integrated mixer was clean and didn't seem to impart noticeable noise or coloration. The mic preamps were similarly clean and transparent. Simple dynamics processing is offered across each input, including a highpass filter, high-frequency EQ and low-frequency EQ, each at preset frequencies unlisted in the manual. The highpass filter was helpful for removing handling noise and AC rumble, and I would guess its drop-off point to be near 120 Hz. The onboard noise gate on each channel was also useful. It was a simple more-or-less control with a range of 0 to 127. For speech, whether through a lavalier mic, handheld or stand mounted dynamic mic, the preset attack and release were well-thought-out. They certainly served to remove unwanted background noise without being noticeable. I believe there is also an undocumented brickwall output limiter across the output of each mic pre, as well. Loud spikes due to laughter or movement sounded compressed rather than outwardly distorting.

In addition to the input channel processing, the main mix offers a number of dynamics processes. Noise suppression, harmonic enhancement and 2-band frequency-based compression allow you to put some finishing touches on the mix before leaving the box. It was clear that these processors are targeted toward easy operation for video-centric users without cutting corners on sonic quality.

GAME CHANGER?

There is no question that this unit is fun to use. I felt very comfortable in an area where my foundations were shaky. The VR-5 made the technical side of things user-friendly, allowing me to focus on the creative vision rather than the execution. For the most part, the interface and layout of controls were clear and ergonomic, providing easy access to key features.

The overall quality of sound and picture are absolutely on par with the intended use, which I believe to be readying materials for online use. While the compressed video and sound, as stored on the SD card, did not hold up that well on a full-sized TV, the live, uncompressed output was certainly of sufficient quality to step beyond the Web.

As engineers, we're always looking to add marketable new skills to our bag of tricks, and I could see this helping many people in a variety of ways. Studios, engineers, front-of-house mixers, educators, houses of worship and A/V pros should consider this a strong way to extend their "brand" in our Web-centric world. Any opportunity to create exciting, up-to-the-minute, Web-ready content should be welcome, and this little unit is certainly opening the doors.

Brandon Hickey is an audio engineer, film sound professional and educator.

PRODUCT *SUMMARY*

COMPANY: Roland
PRODUCT: VR-5
WEBSITE: rolandsystemsgroup.com
PRICE: $4,995 (street)

PROS: Impressive features. Easy operation.
CONS: No widescreen or HD video.

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By Kevin Becka

AUDIO IS MORE THAN AUDIO

While I've always tried to center my career goals around creating music, it hasn't always worked out that way. Fifteen years ago, the titles Educator, Magazine Editor and Video Editor/Producer weren't even close to being on my list of "Top 10 Skills You Should Develop by 2010." And while I wouldn't call the video bit necessary for survival, it's the one I'm having the most fun with right now. It allows me to communicate on a new level that, thanks to the Internet, is the hottest ticket in town.

Just recently, I got my hands on the Roland VR-5 A/V mixer/recorder (reviewed on page 86) and produced a live video teaser of an open house at the Conservatory of Recording Arts & Sciences, where I wear my educator hat as instructor and director of education. With a crew of eight, three cameras, rudimentary lighting, and wireless and wired audio all powered by a car battery through an inverter, we rolled through four studios, a live sound venue and classrooms, editing as we went. I then sweetened it in iMovie adding B-roll and titles. While it fell below my standards for release in prime time, it was a great experience in coming up with process, teaching me how to tighten it up next time around.

Audio tech Jeff Harris with the rolling VR-5 rig

In the past year, I've also produced Mix Webcasts sponsored by Mackie, Lynx and Shure using a combination of video, audio and stills all put together in iMovie, then streamed to thousands across the globe. The initial presentation is 30 to 40 minutes, ending with a live-moderated audience Q&A. The production values sit squarely between shaky home movies and CNN, often being rough, but the great part is that it doesn't matter. It's all about the access, and it's a growing trend.

On YouTube, you can watch "Pensado's Place," where engineer Dave Pensado interviews star engineers like Tony Maserati, Ed Cherney and Bruce Swedien, plus a range of other interesting audio folks including manufacturers and assistant engineers. There are nearly 30 well-produced episodes offering insights into the workflow, techniques and skills of people you would never have access to in the past unless you were on staff at a studio.

PureMix (puremix.net) promises that the viewer will Learn What's Not In the Manual. Engineer Fabrice "Fab" Dupont tackles a broad range of topics, like transparent vocal compression and tracking a variety of instruments. The videos are well done, with some free and others pay-to-view.

Back in February, while creating his latest album at Echo Mountain Studios (Asheville, N.C.) country artist Dierks Bentley streamed live video from his Website for 24 hours. It was a voyeur's delight and drew more than 30,000 visitors.

There's one elephant in the room with all this video, and that is, quite frankly, the horrible bandwidth-limited audio. It's often necessary to dumb-down the quality to be sure all viewers, many of whom might be in places with very limited bandwidth, have the same experience. However, this is a short-term problem.

Sonic.net, a small Internet company based in Santa Rosa, Calif., is replacing old copper lines with fiber directly to the home. The company's feeds are not data-limited, and the fastest package (40 Mbits/sec) is only $69.95. And it's profitable, according to a recent article in the *San Francisco Chronicle*. AT&T is laying fiber in areas of new construction, and Comcast, the largest U.S. broadband provider, recently unveiled a 1-gigabit/sec service over existing cable. All this competition means that we, as users, will see faster, speed-cap-free service in the near future. Once that happens, you could potentially stream full-bandwidth audio with video and that will blow the roof off.

Streaming and live-captured video is the next new way for studios, audio pros, manufacturers, artists, labels, churches and more to open new revenue streams, expand their brands and embrace the future of education. The good news is that the tools are cheap, the demand is high and there are ways to monetize the content through sponsorship and pay-per-view. The way this is growing is reminiscent of how the film industry expanded in the previous century. But now, instead of the business growing vertically on a limited number of platforms, it's a mile wide and in inch deep—open for everyone to find their way.

Bottom line? Making your audio more than just audio couldn't be easier or come at a better time.

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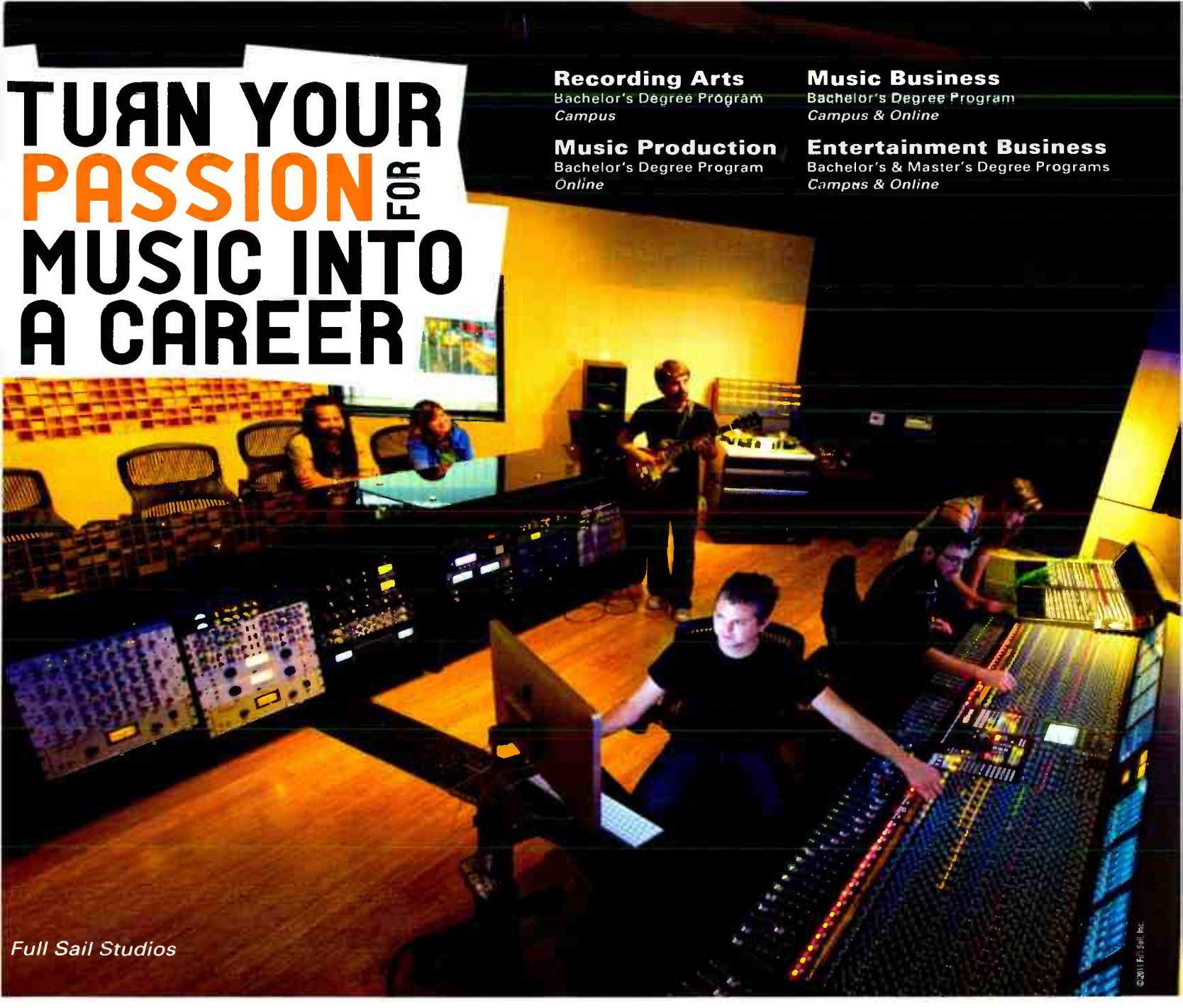

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