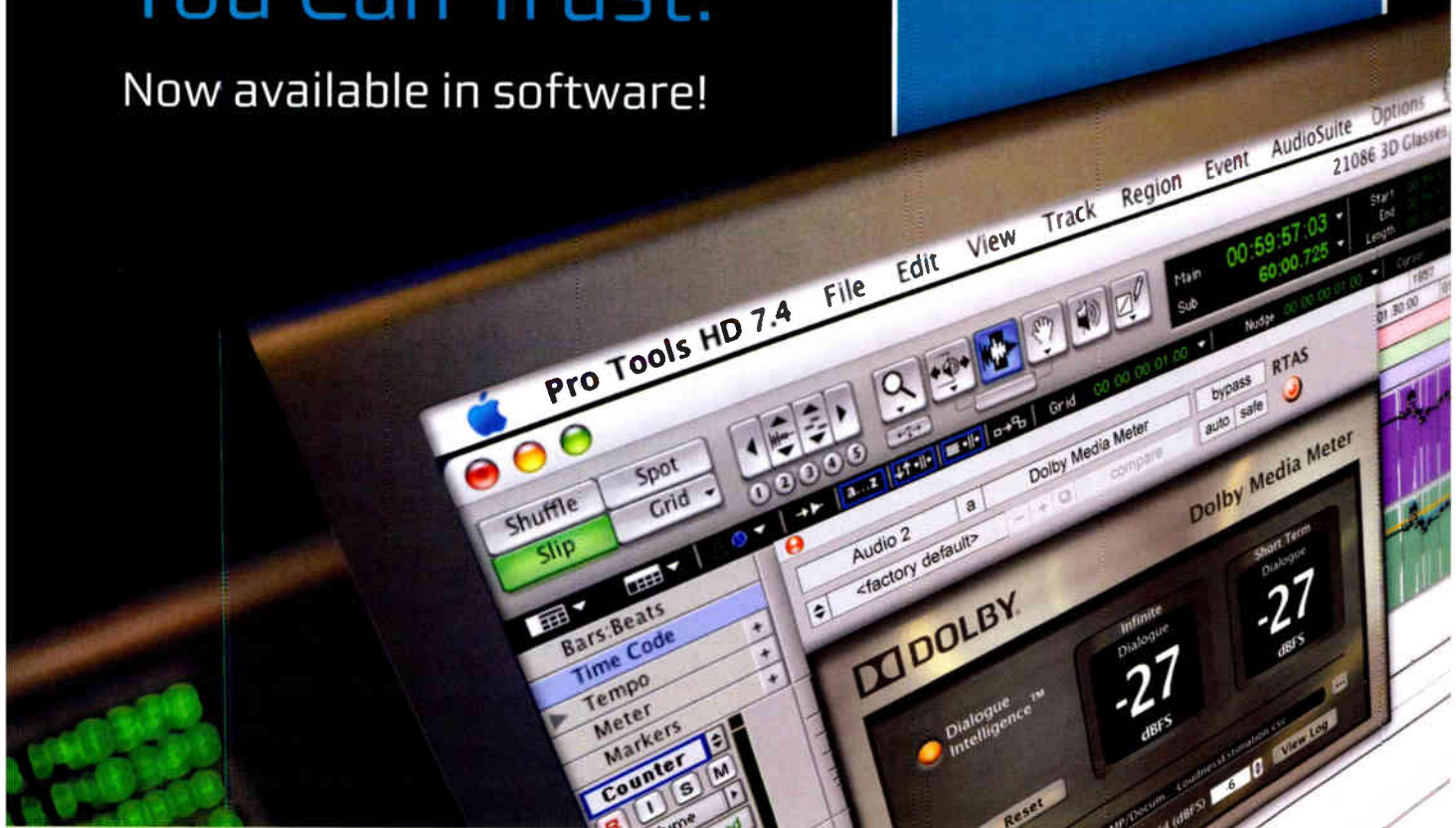


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R&B/pop icons Jimmy Jam and Terry Lewis settled into their new Flyte Tyme Productions (Santa Monica, Calif.) in 2006; the 9,000-square-foot facility is based around SSL AWS 900s, Pro Tools rigs and a museum's worth of new and vintage synths. Photo: Mitch Tobias. Story on page 18.

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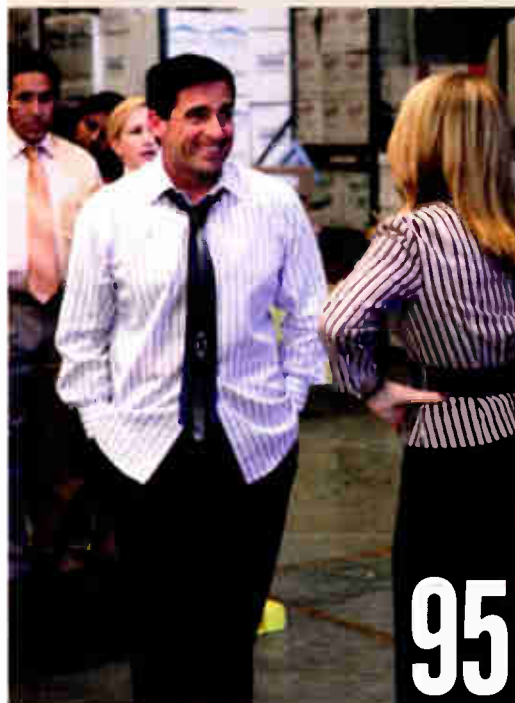
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► The Way We Work

The last time AES came to San Francisco, we declared that the show was "putting the pro back in pro audio," with advancements in core processing, modular consoles and quality boutique gear ruling the show floor. But notably, it also marked a trend that moved away from tricked-out products with supersized feature sets toward gear with real functionality—products that reflect the way people really work.

For a long time, especially in the software market, it seemed that in the marketing battle to outdo the competition's offerings, basic functionality sometimes got lost. I remember a columnist remarking, "Skip the features already!" Yet these days, it's clear that while technology continues to come down in price, developers are also focusing on efficiency.

Who's really leading product advancements? In our industry, technology development and workflow evolution often go hand in hand. This means that end-users lead the market; they are every bit as much the innovators that manufacturers are. Engineers and producers find new ways of working in response to industry shifts and technology developments, and the manufacturing community responds. And so the cycle goes.

For example, when workstations came on the market, they were touted as time-savers—freeing engineers up to be more creative. But as it turned out, that just meant making a different set of decisions, working at a different detail level. And with DAW technology, there's probably more "fix it in the mix" going on than ever. With hundreds of virtual tracks available, the "record 100 takes, then comp/edit the final take" approach is fast becoming the norm—vastly different from the old-school "play it until you get it right" method.

As a result, consoles are evolving to become workstation front ends.

Networking is key in many new live products, from mixers to amps, system controllers and loudspeakers. Changes in every aspect of our industry are focused on versatility and control—streamlining production and distribution. Product innovation responds to new ways of working.

This month's issue of *Mix* includes some prime examples of producers whose creativity has been influenced by, and become a dialog with, technology developers. For starters, there are cover producers Jimmy Jam and Terry Lewis, who, after moving to L.A., tapped into digital technology to build more flexibility even as they downsized from 30,000 square feet to 9,000. TEC Hall of Fame inductee T Bone Burnett recently began examining digital standards (or lack thereof) and developed his intriguing new CODE process, which promises to improve audio quality in any digital format.

The cost of entry has gone way down in every aspect of what we do. But there's a flip side: Just having a tool doesn't create an instant problem-solver. With any technology, the key is knowing what you want, but recognizing your limits—and working with the tools that best allow you to focus on your craft.

See you at AES.



Sarah Jones
Editor

Mix

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In the Studio With the Lovin' Spoonful



I just finished reading Gary Eskow's Lovin' Spoonful article in *Mix* ("Classic Tracks: The Lovin' Spoonful's 'Do You Believe in Magic,'" August 2008), and had to tell you that John Sebastian told him the truth. I was [engineer] Harry Yarmark's BP (affectionately known as "button-pushers" because there were no remote starts on the tape machines) at Bell Sound in the '60s and wound up on a lot of the Spoonful dates.

At that time, I was a jazz piano player and just got off the road with Lesley Gore. I got a job at Bell to meet all the musicians and to try to get into the studio scene. So working for two hours to get a drum sound wasn't my favorite thing, and as hard as I tried Harry wouldn't let me off the Spoonful dates. Looking back, though, it was a lot of fun and I remember that Zally [Yanovsky] was nuts (good nuts) and John was serious.

All this to say thank you for bringing back great memories.

Jim Czark
Nola Recording

Radical Mixing Tales

In keeping with the theme of the feature "Mixing Outside the Lines," which appeared in the August *Mix*, we asked readers to tell us about their own radical mixing techniques.

I am mixing an album for a Turkish/Swiss producer involving three European singers (Italian, Spanish and Turkish). The album is currently called *Aventia Crooners* and is a "Three Tenors" type of album with songs from movies from the past 50 years.

The tracks were recorded in Switzerland and then fully orchestrated and overdubbed by the Czech Philharmonic Orchestra (103 musicians). Pretty normal, except that this huge project started at an SSL studio (Studio Relief in Belfaux, Switzerland) and is being mixed at my home studio using a Pro Tools HD3 system running at 96 kHz and feeding 30 outputs into Inward Connections analog summing mixers. The signal is then converted back to digital and fed into the digital input of my audio computer.

So far, this is not so radical, except for the fact that we are mixing "live" while being about 6,215 miles apart. The mix arrives as a 48k MP3 stream at 320KB/sec, high-quality settings via Rogue Amoeba Nicecast software (which I reviewed for *Mix* in the November 2007 issue). I put "live" in quotes because there is at least a two-second delay between hitting Play in Los Angeles and hearing music in Switzerland.

Here's the "radical" part: I use Apple's iChat video conferencing on my laptop to connect with the producer in Switzerland. I then use screen-sharing to take over his computer from my laptop. Once I have control of his laptop, I navigate on his computer to open screen-sharing and then connect his laptop to my audio computer running Pro Tools. (I do it this way so that I can input the password to my audio computer without him knowing what it is.) He can now see my mix screen from my audio computer on his laptop. I close the screen-sharing between our laptops and then re-establish a video iChat between us.

Three computer events hap-

pen simultaneously: He sees and hears me using iChat; he sees my Pro Tools screen from my audio computer on his laptop; and he hears the mix sent via Internet broadcast (Nicecast) and monitored by opening an Internet stream in iTunes on his laptop.

Total cost (assuming you already have all the computers and hardware): \$40 (Nicecast, from Rogue Amoeba).

Erik Zabler

Although the project was coming out well, there had been a lot of tension about the budget and the tracking had taken longer than planned. Then, during the mix I discovered—to my horror—that on one song the snare track ended about a minute before the song did. There had been a glitch and the rest of the file was gone. I was working on a Roland VS-2480 [workstation], and this had never

happened before (or since). I knew that even if I could get the drummer back in to track it again, it would take all day to reproduce the setup to match the other songs and I would have to eat the cost (and it would put the project even further behind schedule).

I still had the track with the bottom mic so I tried to work with it but just couldn't get a believable sound—it might have worked if [the music] wasn't heavy metal, but this snare had to cut hard. I pulled the top and bottom snare tracks into [Syntrillium] Cool Edit Pro and carefully replaced the missing snare hits using the first half of the song for source material and matching the timing with the bottom track. After several hours of tedious work, I transferred the tracks back to the VS-2480, but the last part of the song still sounded different. I tightened the gate and compressed until I could no longer hear the transition, and then EQ'd and added ambience until I thought it was acceptable. (I didn't actually like the snare sound but I felt I had done the best I could.)

When the band heard the mixes, they sent me an e-mail with some minor changes and noted how much they liked the snare sound on this song and asked me to make all the others sound the same. I wasn't expecting that.

Michael Wagener mastered the project. He immediately picked up the odd snare sound and said he thought it was sampled. Well, not exactly, but what great ears. I guess that's why he is where he is.

Jim (The Reverb King) Brown



Next month, we focus on education programs for all aspects of audio production. *Mix* wants to know: How did you break into the business? E-mail us at mixeditorial@mixonline.com.

A black and white photograph of an astronaut in a space suit, floating in the void of space. The astronaut is positioned on the left side of the frame, with their body angled towards the right. The background is a dark, starry expanse of space.

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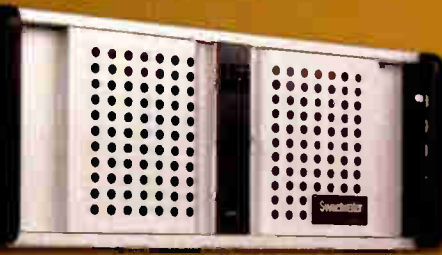
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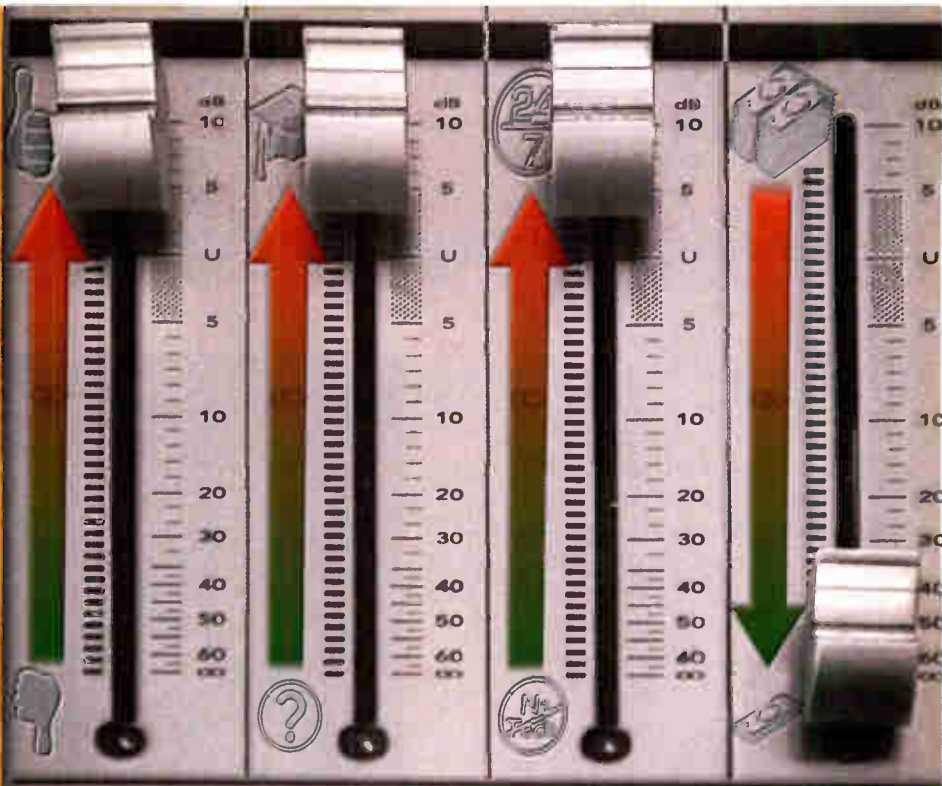


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Music Instruments & Pro Audio

Jam and Lewis Keep the Hits Coming at Flyte Tyme

The walls of Flyte Tyme studios tell a story. Here, at Jimmy Jam and Terry Lewis' Santa Monica, Calif., facility, Gold records line the hallway: Janet Jackson, Michael Jackson, TLC, Boyz II Men, Usher—the list goes on. A glass case overflows with Grammy awards, ASCAP Awards, a *Billboard* Award, an NAACP Award. A plaque commemorates a star on the Hollywood Walk of Fame. And there are the dozens of pictures of the duo posing with a who's who of R&B and pop legends—always looking sharp in their signature bespoke suits and crisp fedoras.

Upstairs, five studios buzz with activity. In one room, Asian pop sensation Tiana Xiao is tracking her latest album; in another, work is being done on The Time's upcoming release. Four years after moving to Los Angeles and two years after settling into their own digs, it's clear that the pair is working harder than ever and business is good.

It's been more than 35 years since these R&B/pop icons first connected as high school students. Although their roots were in performing—the two founded Minneapolis funk band Flyte Tyme, which evolved into The Time—their work on the S.O.S. Band's hit "Just Be Good to Me" put them on the production map, and after collaborating with Janet Jackson on her 1986 smash *Control*, their careers skyrocketed. Jam and Lewis became one of the most successful and influential songwriting/production teams of the '80s and '90s, shaping the pop sounds of those decades and laying the groundwork for pop and R&B music made today.

The sheer number of hits they've produced is staggering: 100 Gold, Platinum and multi-Platinum albums; 16 Number One pop singles; 26 Number One R&B singles. Just as far-reaching is the diversity of talent they've fostered, from Mariah Carey to Sting, from Mary J. Blige to Bryan Adams.

These days, Jam and Lewis continue to produce music and are involved in various business ventures including a record label and a publishing company—and Jam is heavily involved in industry outreach through his role as Chairman of the Board of the Recording Academy.

California Love

Various factors contributed to the duo's decision to move to Los Angeles from Minneapolis: Travel became difficult post-9/11, clients wanted to work in a warmer climate, and opportunities



Jam (left) and Lewis in Jam's studio, which includes an SSL AWS 900, Pro Tools and, of course, a TR-808

simply abounded out West. "The idea was to be able to have more spontaneity in who we worked with, and just more efficiency as far as getting people into the studio," says Jam. "I remember we went through a period of time when I was still in Minneapolis and Terry was out in L.A. [at The Village]. And Terry would be working on two or three projects at the same time, and I'd be working on one. And Terry would go, 'Jam, you need to come to L.A., man; it's jumping out here!'"

Jam says that downsizing from their sprawling Minneapolis facility to their temporary home on the third floor of The Village taught them the importance of streamlining workflow in comfortable surroundings. "So the thought of this place was, we want to have an environment where people want to hang out, feel comfortable; intimate rooms, where if you're just writing with another person, you're fine," says Jam. "And then utilize the fact that we're in L.A.—we didn't do a huge room because there's many huge rooms around L.A. to do huge string sessions or huge choir sessions.

"Basically, we took what we had in Minneapolis—which was five rooms, an office space, a

recreation area in 30,000 square feet—and we've done the same thing here in about 9,000 square feet," he continues. "We made choices—like for instance, there's a 2-inch tape machine, but rather than doing one for all five rooms, we did one tape machine. And everything's tie-lined."

For the most part, production has transitioned to digital with a few exceptions: when resurrecting old Time archives, for example, or working with artists such as Blige, who prefers to mix down to analog. "She likes the sound and somehow that feels like a finished master to her, so we have a nice Studer machine just for that," says Jam. The studio is equipped with Pro Tools rigs and SSL AWS 900's, which Jam says offer the "best of both worlds. It gives you a Pro Tools controller, as well as it's just a sound board. One of my pet peeves is that I hated walking into a room and I would hit a keyboard and nothing would happen, and someone would say, 'Oh wait, let me get the Pro Tools up.'"

Both agree that focusing on extreme detail can block the creative flow. "The engineer, a lot of times, we'll say, 'Bring that vocal up,' and he'll go, 'How many dB?'" says Jam. "I don't know, just



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ON THE COVER

turn it up. I don't know the difference between 1 dB and 3 dB, but I'll know it when I hear it."

Jam is also amused by the way DAWs allow engineers to work from a visual perspective: "We always like to have drama in our productions. The songs always start off at a lower point, and then we're adding to it so the song grows; the beginning doesn't sound like the end," he says. "And we had a couple of younger engineers come in, and somebody said, 'You know what's cool about your songs? The waveforms always start off kind of little and then they get bigger,' and I'm thinking, 'What does that have to do with how it sounds?'" Adds Lewis: "I don't believe in old school, new school; I believe in school. You just need to learn. Because three plus three has been the same math forever. You gotta learn the basics because one day you might not have the technology. Then what do you do?"

"Music is the soundtrack of life. But when you take it and put it in a format that you try to sell, there has to be business." —Terry Lewis

Digital technology has certainly changed the way they collaborate, from iChatting to exchanging tracks remotely—which can make it difficult to strike a balance between emotional process and intellectual process. "Music really stopped being emotional when we started getting synthesized instruments anyway," says Lewis. "Because then we could separate; one person could sit at home and make a whole track. When we first started out playing instruments, we needed a drummer, a keyboard player, a bass player; they'd all have to be in the room at the same time, so it was always that personal, emotional interaction." "A great band is like a great conversation," adds Jam. "When you're with a group of people and the conversation is just flowing, and it's maybe a serious conversation, and then the jokes start flowing back and forth and somebody adds two cents here and two cents there—that's what a collaboration of a band is."

Music Matters Most

Jam and Lewis work for the love of the art, and the business supports that. But that's not to say they don't play the game. "Music is the soundtrack of life," explains Lewis. "If you go outside, there's music in the air—you hear the birds tweeting, the cars, the rumble of just the air itself. That's all musical; it's all melody, it's all rhythmic. But when you take it and put it in a format that you try to sell—you make it an industry—there has to be business.

There have to be dynamics and rules and things that make it acceptable or palatable, and knowable by all so everybody can work the commerce. But we made music when it wasn't business; it was just a hobby, it was just something that we love to do. We'd pay to do it if it didn't pay us. I always say, 'If you love music, it will love you back.'"

"I've heard Terry say that," adds Jam, "and a lot of times, when he does say it, it's to record company people who rather than listening to what the actual record is, they're too busy trying to think about the marketing. Listen, if the music isn't there, then all the rest of the stuff doesn't matter.

"In the recording industry, the guys who were great music guys, who had great ears and had great passion, a lot of those people either aren't around or they're working independently, but they're not really working under the major structure anymore," con-

tinues Jam. "And those jobs have been replaced, it seems, with a lot of lawyers and accountants, and people that think about, 'How much is this going to sell?' rather than, 'Wow, what a great song.'"

These days, the entrepreneurs are gone, laments Lewis. "The music business was built by entrepreneurs: It was a guy who had an affinity for music, who had an affinity for a particular artist. That guy would go find that artist, pay for everything out of his own pocket and would know the process through and through. And when they would go to market with it, there would be a marketing plan because you lived with it the whole way. Now it's very impersonal. You can turn your record in at the last minute, and in two days, somebody says, 'I like it,' 'I don't like it'; nobody's involved anymore. And it totally changed the whole fabric of the industry.

"It's like a microcosm of America," Lewis continues. "It was an entrepreneur spirit that built America, and those were the people who were guiding America the right way. Now the record companies are the way they are because there's no Herb Alpert, no Mo Austin—there's not the same entrepreneurial spirit there. It's just a guy who says, 'What's hot?' 'Who you know?' 'Here's some money, go do it!' American music, especially African-American music, is the only indigenous art form in this country. But then you take that and you take the people who love that out of the equation, what do you think you're going to get?"



PHOTOS: MITCH TOBIAS

These days, Jam and Lewis focus heavily on giving back to the community. As Chairman of the Board of the Recording Academy, Jam attended both political conventions as a nonpartisan ambassador to keep music part of the discussion. Anc Flyte Tyme recently hosted a Grammy camp experience, giving 60 kids a chance to experience studio life. "The responsibility we have is a divine responsibility because we've been blessed to be able to do it for so long; the giveback now is at the forefront of our lives," says Jam. "We want to get kids excited about the possibilities that are out there. We are very privileged to be in the position we are in." ■

Sarah Jones is the editor at Mix.



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CURRENT

Compiled by Sarah Benzuly

Jerry Wexler 1917-2008



mon Burke told the AP after hearing of Wexler's passing. "He had a feeling for it, he had the knack to keep it going in his heart and recognize the talent that he felt was real. Jerry Wexler didn't change the sound of America; he put the sound to the public. He opened the doors and windows to the radio stations—and made everybody listen."

Wexler's first foray in the music biz was landing a job writing for *Billboard* magazine in the late 1940s after serving in WWII and studying journalism in college. At *Billboard*, he coined the term "rhythm and blues" for the magazine's

He loved black music...rhythm and blues was his foundation.

Legendary music producer Jerry Wexler passed away in mid-August of congenital heart disease at a hospice in Sarasota, Fla.

Wexler, along with the late Ahmet Ertegun at Atlantic Records, helped bring R&B music into the mainstream. The duo brought the sounds of Aretha Franklin, Ray Charles, Otis Redding and other groundbreaking African-American musicians onto the airwaves. Later, Wexler would help define the careers of Dusty Springfield, Bob Dylan, Led Zeppelin and many more.

"He loved black music, R&B music, and rhythm and blues was his foundation," Solo-

black music charts, they were listed under "race records" previously. While at the magazine, Wexler met Ertegun and so began the groundbreaking label Atlantic.

E-mail mixeditorial@mixonline.com to share your memories of Wexler or the ways he has inspired you.

Ray Benson to Receive Les Paul Award



Ray Benson—bandleader, singer/songwriter, multi-instrumentalist, producer and studio owner—will be honored with the prestigious Les Paul Award at the 24th Annual Technical Excellence & Creativity Awards, to be held Friday, October 3, at the Westin St. Francis in San Francisco. Sponsored by the Gibson Foundation, the award will be presented by a surprise guest.

Best known for work with Asleep at the Wheel, Benson and the band have tackled almost every style imaginable—from honky-tonk, Big Band and rockabilly to folk, country and standards.

Benson is also a talented producer and studio owner of Bismieux Studios in Austin, a state-of-the-art facility with a huge control room, a vintage API console, tons of outboard gear and the latest digital systems.

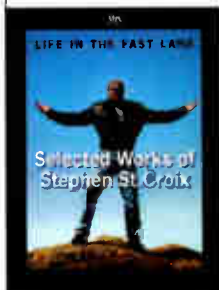
BOB SARLATTE TO HOST

Tickets for the 24th Annual Technical Excellence & Creativity Awards are now on sale (available at mixfoundation.org or call 925/939-6149). Comedian Bob Sarlatte will host the show, backed by the all-star 2Cold Chili Bone TEC

Band. Sarlatte's career took off as an announcer, writer and regular comedy contributor on the first *David Letterman Show* for NBC in 1980. He then went on to appear on the *Late Night* version of that program more than 20 times, and has followed Letterman's show with guest spots on the CBS version, *The Late Show*. He has also appeared in or voiced-over 5,000 radio and TV commercials and cartoons, as well as numerous TV series.

Go Back to "The Fast Lane"

MixBooks Releases Selected Works of St.Croix



Stephen St.Croix's "The Fast Lane" was one of the most popular columns to appear in *Mix* for 18 years. Now, two years after the author's passing, MixBooks releases *Life in the Fast Lane: Selected Works of Stephen St.Croix* (Mix books.com, \$29.95).

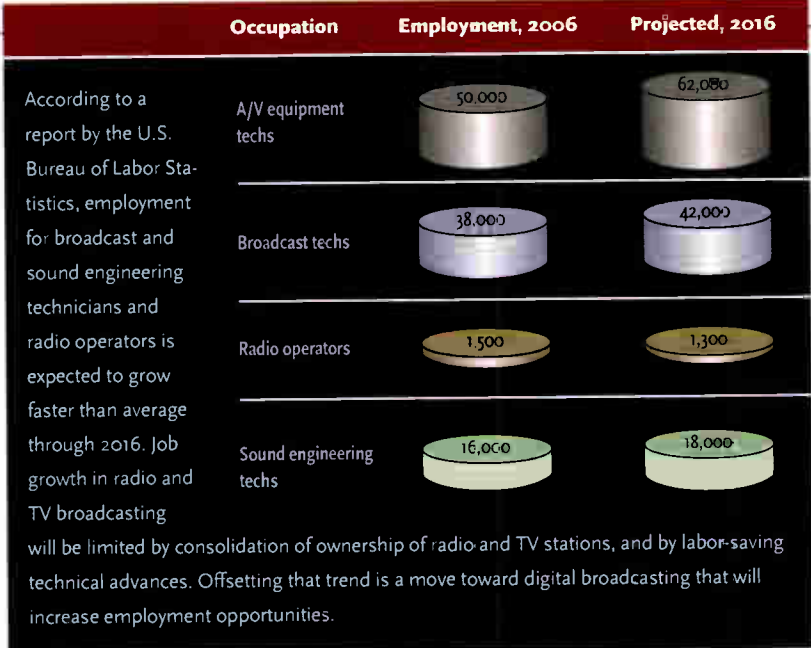
Included are some of the most important, well-loved and controversial columns on subjects such as piracy, pitch-shifting, electric guitar recording tips, surround sound and, most important, the meaning of music as the soundtrack to our lives. Interwoven with the columns is a private collection of St.Croix's drawings, notes and personal photos.

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Previous lives

- 1998-2008, Cardinal Brands CFO (1998-2003), CEO (2003-2008)
- 1992-1998, Sabreliner Corp. CFO
- 1978-1992, Ernst & Young staff

The most exciting thing about joining the audio business is... the opportunity to lead a team of execs with more than 200 cumulative years of industry experience.

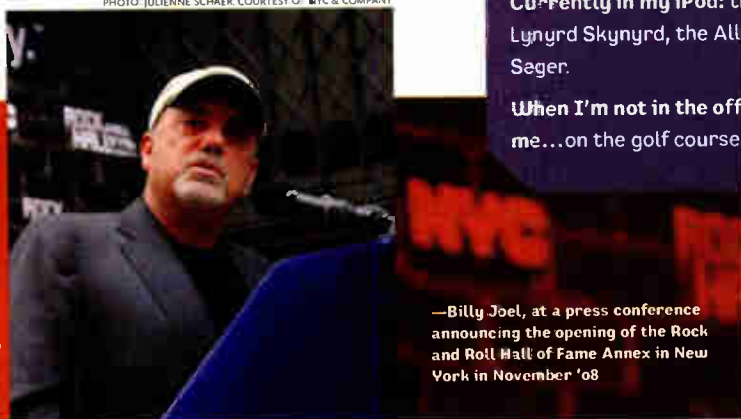
Currently in my iPod: the Rolling Stones, Lynyrd Skynyrd, the Allman Brothers, Bob Seger.

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



seen & heard

"New York gave me my words and my music, and rock 'n' roll gave me a place for that."



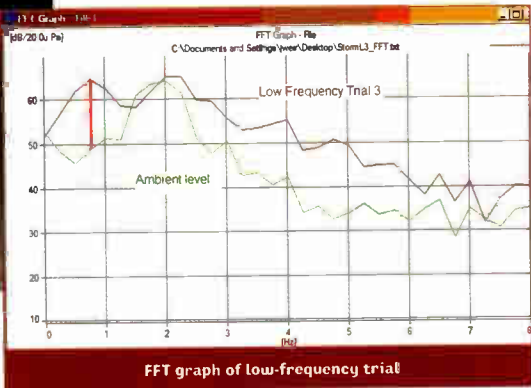
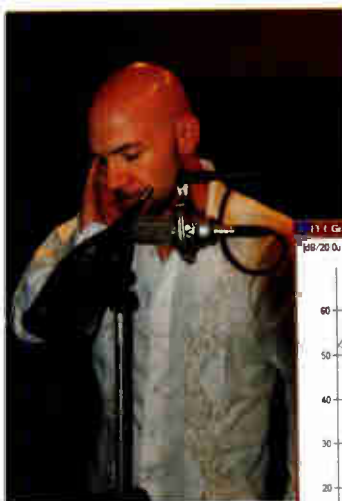
—Billy Joel, at a press conference announcing the opening of the Rock and Roll Hall of Fame Annex in New York in November '08

How Low Can You Go?

On August 12, Tim Storms (left) broke both of his current Guinness world records for "the lowest note produced by a human" and "widest vocal range for a male." Measurements taken at Citywalk Studio with engineer Mark Owen were performed using a Bruel & Kjaer Type 2270 sound analyzer with a Type 4189 mic with a LF extension adapter, which lowered the -1dB cut-off frequency of the mic from 7 Hz to 1.5 Hz. The data was saved to the analyzer's SD memory card and sent to Bruel & Kjaer for analysis (performed by Jim Weir, a senior application engineer at the company).

For the low-frequency trials, the analyzer was set up to measure maximum and exponentially averaged FFT spectrum with a frequency span of 100 Hz and 400 lines of analysis. In addition, five ambient noise-level measurements were performed. The data collected showed that Storms can produce acoustic output below 1 Hz (the lowest frequency recorded was 0.7973 Hz) in repeatable trials.

During the widest-range trials, the analyzer was set up to measure the FFT spectrum in a maximum hold mode. A frequency span of 5 kHz was used with 6,400 lines of analysis. The highest pitch recorded was at a fundamental frequency of just over 800 Hz.



TV Stars Rock at Netflix LIVE!

Band From TV, a rock 'n' roll group comprising performers from popular TV shows (guitarist James Denton from *Desperate Housewives*, drummer Greg Grunberg from *Heroes*, rock violinist Jesse Spencer from *House M.D.* and vocalist Bob Guiney from *The Bachelor*), took center stage with stars Teri Hatcher, Hayden Panettiere and Adrian Pasdar on August 9 as part of the Netflix LIVE! On Location outdoor concert and screening series (from Netflix's library of TV content) at the Autry National Center in L.A.

According to production director Tom Nicks, front of house saw a Yamaha PM5D board with Clair iO system EQ and control. At monitor world was a Digidesign Profile with Clair iO EQ. Crown MA-3600 amps, QSC Wideline 10s and PL380s, and CBA sub-lows were positioned onstage.



James Denton: "Being able to be onstage and play music is a dream come true."



Industry News



Jonathan Firstenberg

Jonathan Firstenberg has been promoted to VP, business development at **Universal Publishing Production Music (L.A.)**...New York City-based **Sterling Sound** has promoted **Jay Franco** to mastering engineer. In more promotion news, **Christopher (Kimo) Kemp** climbs the ladder at **Elias Arts** (Santa Monica, CA) and is now associate creative director...New composers at **Modern Music** (Minneapolis): **John Hermanson** and **Eric Fawcett**...**Euphonix** (Palo Alto, CA)

named **Mike Franklin** to executive VP of worldwide sales...**Fairlight US** (Pasadena, CA) new national

sales manager is **Jeff Goodman**...**Bob Romero**

is **Clear-Com's** (Alameda, CA) new global customer operations director...

Distribution deals: **Radian Audio Engineering** (Orange, CA) appointed

On the Road Marketing (New England, metropolitan New York) and **Ark**

Productions and Marketing (Upstate New York); **Dale Pro Audio** (NYC)

is master distributor for **Linear Acoustic's** (Lancaster, PA) range of gear;

and all **TRUE Systems** (Tucson, AZ) products will be distributed

in Germany, Austria and most of the EU by **Synthax Audio AG**.



Jay Franco

The Gold Standard

The RIAA celebrates 50 years of Gold Records this year; here are a select few to take you down memory lane. Visit mixonline.com for a full list.

1958

Perry Como's "Catch a Falling Star" (first Gold single)

1958

Oklahoma! Cast Album (first Gold album)

1964

Barbra Streisand's The Second Barbra Streisand Album

1979

Pink Floyd's The Wall

1993

The Bodyguard soundtrack

2004

Shania Twain's Come on Over



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5%
CLASSICAL

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SESSIONS

BASS—New Space for Engineer, Musicians

Bay Area engineer Stephen Hart (www.hartmixer.com) has found a new home for his gear and projects: Bay Area Sound Studios (www.bayareastudios.com), a new rehearsal/studio facility in San Rafael, Calif. The 11,000-square-foot business was conceived by Michael LeValley's Live Oak Design Group.

"When we were designing the building, the intent was rehearsal space only," LeValley says. The space was divided into 15 rooms of varying sizes, from the 100-square-foot practice rooms geared toward individual musicians all the way up to the 2,000-square-foot Studio 1, which is large enough for professional bands to rehearse on an arena-sized stage. To ensure the best-sounding environments, LeValley hired Sam Berkow to tune the room acoustics.

"It then became apparent that the rooms could serve other functions," LeValley says. "Right before we opened, I was approached by Stephen."

Hart, who serves as regional president and co-chair of the Re-

cording Academy's P&E Wing, had left Fantasy Studios (Berkeley, Calif.) after seven years as chief engineer. At BASS, he found spaces that he says are "even and punchy. The larger rooms aren't cavernous sounding, but they have effective bass trapping and quiet air. Walls, floors and ceilings were already nonparallel. Room tuning is a lengthy and costly procedure, and it was a massive benefit to me to have the bulk of it done."

Hart installed his full-blown Pro Tools HD3 system with C24 control surface and an arsenal of plug-ins (he acknowledges endorsement deals with a few companies) in the studio now called TheMixRoom, and had it wired to BASS' 1,300-square-foot Studio 2. Two-way audio and video were added for talkback. The studio went online in April, and Hart has already completed recording, mixing and/or mastering projects for blues



Engineer Stephen Hart (left) with Michael LeValley in Studio 2.

artist Lady Bianca, jazz star Terrence Brewer, indie rock band Built for the Sea and country guitarist Jackie King, among others. He also continues to balance his work at BASS with a freelance career. When projects take him to other studios, BASS' audio projects are handled by in-house engineer Brad Dollar.

Meanwhile, LeValley says booking in the rehearsal rooms has been healthy since day one; those clients include high-profile artists such as Tommy Castro, Carlene Carter, Pri-

mus and Van Morrison, as well as working bands and music students.

"I believe in this as a contemporary media facility," Hart says. "It's got recording, rehearsal, events—we hosted a surround-sound event for the P&E Wing and JBL last month. There's a lot of versatile space. I'm fortunate to be in at the inception of BASS where unexpectedly, with a modest investment in infrastructure, I have access to a large, beautifully tuned room."

—Barbara Schultz

project studio

Stampede Origin by Barbara Schultz

Whether tracking happens in his four-room Stampede Origin studio or he mixes tracks that were recorded elsewhere, engineer Ryan Freeland (www.ryanfreeland.com) is all about live performance. "It's almost all I do," he says. "For an engineer, that's the most fun because you've got five or six musicians in a room, and day one, take one, everybody is playing live and it might be a master. You're under extreme pressure to make sure you record it properly; it puts me to the test, and I love that."

Freeland tests well, apparently. His first job out of college was at House of Blues in Memphis. First gig as a second for this engineer/piano player: a Jerry Lee Lewis session. Then he moved to L.A. to become Bob Clearmountain's second engineer. Freeland learned from the master mixer, and in off-hours he built up his gear and freelance clients.

"Bob gave me one of his early Pro Tools sys-

tems when he upgraded," Freeland says. "Once I went independent, I started spending every dime I had on gear. I lived in a one-bedroom apartment in Westwood, and I made a lot of great records in that apartment. We did Aimee Mann records there."

Later, Freeland moved to West L.A. and set up shop in his living room. A year ago, he built out a guest house on his property to accommodate a large control room and three additional tracking spaces. "I designed and installed everything myself," he says. "The drywall, the electrical, the patch-bay—some jobs were more fun than others!"

Now, Freeland has a permanent home for his Pro Tools HD Accel-based rig; his racks of vintage mic pre's, compressors and effects; and his carefully chosen mic collection. Projects he's completed in the new rooms include mixing Mann's @#%?! Smilers, as well as releases for locals Miss

Willy Brown, Gaby Moreno and Kristy Hanson. He can also mobilize his gear. He's been working with acclaimed producer Joe Henry for six years, and they often track in Henry's home studio. For example, Rodney Crowell's latest, *Sex and Gasoline*, was recorded in Henry's Garfield House studio and then mixed at Stampede Origin.

"Joe's studio is the bottom floor of his home in South Pasadena," Freeland says. "I roll all my stuff into his space, but he's got a lot of equipment there, as well. The combination of what he has and what I have is pretty lethal!" It also helps that both Henry and Freeland use ProAc Studio 100 monitors.

"I record the way I want things to sound," Freeland explains. "So the playback everyone was nearing on Rodney's record was the vibe everyone was getting in the studio, and the vibe we wanted for the final product. I would do roughs at the end

:: Scott's 'Modern' Remedy

Darrell Scott was scheming and overdubbing, making a densely layered album called *The Invisible Man*. It turned out to be a success, with a song on it called "Hank Williams' Ghost" winning last year's Americana Music Association Song of the Year Prize. But in the midst of that project, something was driving Scott crazy. "I just hit the wall," Scott says. "I needed a break from it. So I tried something else, as medicine. I wanted to go in, record and get out quickly."

Scott called engineer Gary Paczosa. The two were fans of the Sheffield Lab series of recordings from the '70s, in which musicians recorded direct to master.

"Those had the immediacy and the live vibe, but also the studio control," Scott says. "It was great sound, and that's what I was after. There was no multitrack hiss to them, and they were audiophile quality."

Scott and Paczosa went into George Massenburg's Studio C at Blackbird Studios (Nashville). Massenburg's place employs more than 1,500 sheets of 1-inch-



Darrell Scott in Blackbird's Studio C

PHOTO: SCOTT SIMONACCI

thick, medium-density fiberboard, cut in unique tines. The place looks like some futuristic city art project that taxpayers gripe about, but its construction allows musicians to stand in the room and hear each other without headphones. It was built for mixing, but Scott and Paczosa wanted to track there.

"There was close-miking, but we also flew overheads so information was shared," Scott says. "We did almost everything live, without headphones, and we had no click track and did minimal edits. It made for something kind of tight, yet with a vibe of looseness."

Scott and a crew of musician friends recorded 12 of his favorite songs, from 12 favorite songwriters, and then Scott went back and worked, refreshed, on *The Invisible Man*, released that, and now he has also released the Studio C album, *Modern Hymns*.

"These are songs I love, and this is Massenburg's vision of a room and this is Paczosa working his magic," Scott says. "With all that, we got music that is immediate and in the moment."

Track Sheet ::

Slipknot spent four months recording their fourth album, *All Hope Is Gone*, at Sound Farm Studio and Recording Environment (SFSRE) in Jamaica, Iowa.

The album was largely produced and engineered by Dave Fortman (Evanescence, Mudvayne), but the studio owner, producer/engineer Matt Sepanic, was at the helm for a few tracks. The band also filmed the video for their first single off the album, "Pyscosocial," at Sound Farm...Dubway Studios (NYC) went mobile to record a number of performances for iTunes' "From SoHo" series at the small theater inside the Apple Store in Manhattan. Artists recorded by Dubway's chief engineer, Jason Marcucci, include Gnarlz Barkley, Gavin DeGraw, Puerto Rican rockers Black Guyaba and Disney's mega-pop stars the Jonas Brothers... Janis Ian is releasing a new autobiography to be accompanied by a career-spanning double-CD. Most of the 30-plus tracks on the collection were remastered from original source material; all work was done by Don Cobb and Eric Conn at Independent Mastering (Nashville)...Summer sessions at The Cutting Room Studios (NYC) included a writing/tracking collaboration between Danger Mouse and Julian Casablancas of The Strokes, who worked with assistant engineer Tom Gardner and producer Eshy Gazit. John Legend also returned to The Cutting Room to work

on new tracks with engineer Anthony "Rocky" Gallo...At Catalyst Recording (Charlotte, NC), Final Curse recorded their debut CD for Fallen Brother Records. Studio owner/producer/engineer Rob Tavaglione describes the release as "old-school-inspired thrash metal. Guitarists Mike Plowman and Madison Steagle lead the band through a set of up-tempo, staccato rockers punctuated by blazing guitar solos and dreamy, clas-



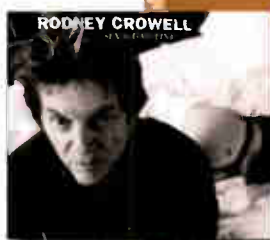
Slipknot's Sid (red mohawk) faces producer/engineer Dave Fortman (with laptop).

sically inspired quiet sections."...Avatar Studios (NYC) introduced a Sessions Blog offering practical advice for studio engineers and recording artists. Topics include tips for choosing an assistant engineer for your project and where/why to keep safeties. Check out blog. avatarstudios.net.

Send "Sessions" news to bschultz@mixonline.com.

of the session, and the mix part at my place was basically a touch-up of the rough. The important thing is the recording has to work at its core. If it's not working during tracking, you've got to fix that during tracking. The real fun is when you capture the vibe. It could go out the door that day. You could take the rough and it would be a pretty good representation of what I was going for—as long as Gavin Lursen masters it!

"I'm one of those guys who was always into the way records sounded," Freeland continues. "I had a reel-to-reel in my basement from age 12, and when I went to Interlochen Arts Academy for high school, I took the bed out of my dorm room to make more room for equipment. Now I've got a proper studio. It's nice not to sleep in the middle of my studio anymore." III



RODNEY CROWELL



Ryan Freeland mixes Joe Henry's productions and others in his Stampede Origin studio.

S.F. Spotlight

by Heather Johnson

Recording industry veterans may associate the 1340 Mission St. building in downtown San Francisco with Coast Recorders, a well-known studio that opened in 1969. Artists and engineers who worked there in the '90s will remember it as Toast. Now, the property is simply called 1340 Mission, and partners Matt Boudreau and mastering engineer Michael Romanowski, along with industry vet/mastering engineer Paul Stubblebine and producer/engineer Michael Winger, are infusing the historic facility with a vibrant new energy by offering a classic recording space (redesigned by Bill Putnam in 1970), excellent



L-R: In the Broken Radio studio at 1340 Mission are Paul Stubblebine, Mike Winger, Matt Boudreau and Michael Romanowski.

equipment and talented personnel. Most importantly, it's a place where

musicians can work in an environment that emphasizes collaboration, communication and creativity rather than the more isolated situations that are now so common in our industry.

The facility turned a corner in 2007 when Boudreau decided to move and expand his Broken Radio studios and join Romanowski, who had worked in the building alongside industry vet Stubblebine since 2002. "Paul and I had been here for years and wanted someone else to run the recording studio," says Romanowski. "When the lease came up for renewal, Paul asked me if I wanted to take it over, but I didn't want to run a recording studio either! So I decided to find a partner who really cared about music, about building a scene and doing good work. Matt was the perfect choice."

Expanding into a 30x40-foot studio was quite a jump for Boudreau, but the timing seemed ideal for him and Romanowski to bring their vision of a collaborative, creative environment to life. "For years, Michael and I talked about having a group of people in one facility," says Boudreau. "Then he came to me one day, and said, 'Well, do you want to move over and join me?'"

He and Romanowski put a plan into action that would not only incorporate their ideas for a community-based environment, but also put money in the bank. "Matt's focus was to make the studio affordable and a model where everybody pays the same price," says Winger. "His concept is very independent artist- and producer-friendly and more suited to today's recording climate."

On Stubblebine and Romanowski's recommendation, Boudreau re-oriented the control room 90 degrees so that the window is positioned to the side of the console instead of directly in front. That alone opened up the 20x22-foot control room considerably.

"I struggled through making several records in here and felt it wasn't ever going to work acoustically because the proportions were

wrong with the window in front," says Stubblebine. "With the console facing west, not only does it take the window out of the acoustical equation when monitoring, I find that it allows you to focus more on what you're hearing."

The Bob Hodas-tuned room features a 28-input Trident 16 console and a set of Klein + Hummel 0300 monitors with an 0800 sub. Recording options include Pro Tools HD2 Accel with Lynx Aurora converters and four Universal Audio UAD-1 expansion cards; Studer A827 2-inch analog with either 24- or 16-track headstack; and a Tascam DV-RA1000HD for high-resolution mixdown. Outboard gear includes Universal Audio mic pre's and compressors, and an EMT 140 plate, among other items, and the solid mic list includes models from Royer, Neumann, Audio-Technica, Shure, Earthworks and BLUE.

While Broken Radio was settling into its new space, Stubblebine and Romanowski reconfigured their mastering studios and combined equipment to make space for the Tape Project, a record label of sorts co-owned by Stubblebine, Romanowski and Dan Schmalte that offers a limited number of reel-to-reel analog releases to a growing number of audiophile subscribers. Romanowski's studio is now the duping headquarters for the Tape Project and home to the Scully lathe for album cutting.

Around the same time, Winger moved in his Pro Tools HD3 Accel rig, Yamaha and Genelec monitors, and other gear upstairs to create an intimate mix room in what was previously unused space.

With all rooms online, 1340 Mission has seen a flurry of activity, with clients ranging from George Winston, Joshua Redman and the Kronos Quartet, to regional talent such as Winger's own band, Super Adventure Club, folk-rock band Cannons and Clouds, indie pop-rock artist Nate Bennett, jazz artist Jacqui Naylor and alt-rock band Dialectic. Boudreau is also

Boudreau and Romanowski at the 28-input Trident 16 console



finishing up a mix for a new *Karaoke Revolution* videogame.

It's not uncommon at 1340 Mission for clients to exchange ideas over a cup of espresso in the lobby. In fact, that's one of the key "missions" of the facility. "It's nice to see the musicians, independent of us, making a connection," says Boudreau. "I see this place as a hub. Among the four of us, we have a ton of resources and a lot of experience to offer the community."

Heather Johnson is a contributing editor to Mix and author of If These Halls Could Talk: A Historical Tour Through San Francisco Recording Studios.



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L.A. Grapevine

by Bud Scoppa

Two years ago, David Bianco performed an extreme makeover on a once-great studio and brought it back to life. It was a significant act of landmark preservation, but for the Grammy-winning producer/engineer/mixer, who has a discography running from Johnny Cash to AC/DC, it was also a crucial career move.

"More and more," Bianco says, "A&R guys would call, and tell me, 'My artist really wants you to mix his record—you have your own place, don't you?' It became obvious that to keep the standards high during a time of declining budgets, it would be necessary to get my own spot. After several years of looking, I spotted a listing on Craigslist for what had been Mama Jo's."

Built in the late 1960s by producer/engineer Freddie Piro, the tracking room/control

engineering years constantly figuring out how to bypass electronics in consoles to find the cleanest signal path, that there was little point in having a board. After all, it's not like we're limited on tracks and have to combine stuff all the time. It's not necessary in the mixing process, either. I like using great mics with my favorite preamps and equalizers, and going directly into the drive."

We walk into the restored, Vincent van Haaff-designed control room. "That's my console," he says, pointing to a compact Audient Sumo, a Class-A summing mixer with a selectable G Series-style compressor and an insert point to which you can connect a different compressor, equalizer, etc. He uses it with a Digidesign Pro Control. "I like to break out of the box, and I like a fader every now and then," he explains. "I'm old-school in that way."

Bianco records through a Neve Suitcase with direct outs, and for additional preamps he uses a combination of old (including API and Altec) and new (Great River, SSL, Little Labs and Digidesign). "I like the Neve for the kick and snare," he says, "but for the clarity of overheads, I like a clearer pre, so I'll use something a little newer. I've got all my favorite colors here—Neve, API, Quad 8 and the modern stuff for recording—and when I mix I have the option of running it through them or not. But they're not attached to an enormous bus matrix with lots of wires and a bunch of amps that are taking the signal and deteriorating it. It's just the pure signal."

Bucking the conventional wisdom has been working for Bianco in the year and a half Dave's Room has been in operation. He's P/E/M'd albums for Big Head Todd & The Monsters, Blues Traveler and Keaton Simons, while serving as engineer/mixer for producer George Drakoulis on soup-to-nuts projects for Paddy Casey, Tift Merritt and, most recently, Susan Tedeschi. The bookings have been filled out with a variety of mix jobs.



David Bianco in Dave's Room, formerly Mama Jo's room

room facility at the northern tip of North Hollywood had drawn the likes of the Alan Parsons Project, Burt Bacharach, Smokey

Robinson, Pat Benatar, Ambrosia and other big names before falling into disrepair in recent years.

"I grabbed a friend to go check out the place," Bianco recalls. "When I pushed open the door, I saw that it was double-thick, with a resilient channel in the wall. It was a cave in here; the floor was all uneven from a water leak. We started looking around with flashlights, and I said, 'Man, this is the real deal!'"

Bianco stands in the renovated tracking room of what is now called Dave's Room, its walls covered in the original dark-wood paneling and period fabric. "Look at this wall," he says, opening the double door to show its thickness. "You don't see this in your basic Sheetrock project studios. It would cost several million to build a studio like this today."

He took a five-year lease from the landlord, a furniture-store owner who'd bought up the whole block. "My landlord was unaware of the quality or history of the studio and intended to tear it down," he says. "So it was serendipitous that I showed up. I did some bartering to renovate it—trading out studio time to a guitarist/flooring guy and a drummer/electrician."

Piro's original Trident desk was long gone, but that was a non-issue for Bianco. "I didn't feel a need to go that route," he says. "There was no deep-pocketed investor. I was using savings to get up and running, and the expense and maintenance of a vintage console was not part of the plan. I felt deeply that, having spent much of my early

The new system features an Audient Sumo and Digidesign Pro Control incorporated into an original acoustical design by Vincent van Haaff.



"One of the biggest pluses about this place," he says, "is that the acoustics are phenomenal, with just the right amount of live to dead material to allow the natural timbre of instruments to be recorded in a very pleasing manner. It's also the perfect amount of space for up to six musicians to record live, vibing off one another, with great sight lines and plenty of separation. I've been getting spirited and often magical takes that have so much more soul to them than I'd get from building the tracks, which is what people wind up doing with their home studios."

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NASHVILLE

Skyline

by Peter Cooper

They knew it was wrong, and they did it anyway. They gathered in a little place called Big Studios. They recorded Epiphone acoustic guitars direct. They played without rehearsing first. They didn't use a click track. They mixed in the box via a Digidesign soundboard. They never went to tape. They used Shure SM57s for room mics. They wrote charts from cell phone recordings. And they wound up with one of the most compelling country music albums of the new century.

the time. When you need to go to a chorus and it needs to go somewhere else, you can't; you're already there. So sometimes the biggest parts of the song sound smaller. Because when everything kicks in, the compressors kick in harder 'cause you have to keep the vocals up front. And, well, that's not how we did this one at all."

The musicians learned the songs on the fly, with handwritten charts that Brown and Kevin "Swine" Grantt wrote out from the demos Johnson kept on his cell phone. Then the men stood and made music, in real time, with the acoustic guitar and bass recorded mostly direct into Pro Tools HD. Cargile hung Shure SM57s as room microphones to capture the guitar tones and drum sounds that rocketed through the small space, and most of the album was made in a day, between 2 p.m. and midnight.

"And that was stopping to take a drink every now and then," says Grantt, who played his bass parts through a Vox DI using a Sadowsky Vintage 5 bass made of swamp ash.

The songs were often recorded without intros as such things require planning. Johnson, who had been released from a deal with Sony-BMG and gone through a divorce and no small number of hangovers prior to *That Lonesome Song*, just called friends together to play songs. Those songs wound up sounding altogether different from anything else being polished on Music Row, and Universal Records boss Luke Lewis decided to put the album out sounding as raw and real as Johnson wanted.

"Jamey was looking for something different, and so was I," says Cargile, who spent 15 years at County Q studios before joining with Noah Gordan to lease the building off 18th Avenue that they're calling Big Studios. "My whole reason for moving here was to get a specific sound. Thanks to Jamey, I got it. And we knew this wasn't the way you're supposed to record. It just felt right."

That's not to say that Big Studios doesn't have fine microphones or capable gear. Johnson's vocals were recorded into Pro Tools through a Manley Gold reference microphone, which Cargile praises for its substantial bottom end and tingling high-end edge. And the mixing took awhile, not because the basic tracks were problematic, but because Cargile spent time attempting to mix in a traditional manner, with outboard compression and all.

"I did the typical mix thing, started with drums and added bass and then compression," Cargile says. "It didn't sound right. It wasn't vibing. So I went back to the roughs, added little touches, all in the box, and that was that."

The mixing also took a little extra time because of all the revelry going on in the studio. The guys would start at about 2 p.m., and then by late afternoon it was time to amble down to a Nashville bar called Loser's. There, they couldn't help but talk up their unorthodox project, and by 6 p.m. there were usually 30 people or so who just had to go to the studio and hear what all the excitement was about.

"They all said the same thing," Cargile adds. "It was, 'I haven't listened to country in years because it doesn't sound like this anymore.'"

Jamey Johnson and his Kent Hardly Playboys would smile at that. It was Back to the Future stuff—via Pro Tools.

Send Nashville news to skyninemix@live.com.

L-R: Jim "Moose" Brown, Kevin "Swine" Grantt, T.W. Cargile and Wayd Battle at Big Studios

PHOTO: PETER COOPER

"I don't care what it takes as long as it sounds good," says T.W. Cargile, who manned the board for the recording of Jamey Johnson's *That Lonesome Song*, an album that has won nearly universal praise and broken into the *Billboard* Top 10 country charts with a sound that is much more reminiscent of Waylon Jennings' outlaw swagger than of the feel-good, minivan-friendly music that usually dominates the modern country mainstream.

"We didn't even know we were making an album," says Wayd Battle, who, along with several musicians and co-conspirators, is credited as co-producer on *That Lonesome Song*. (On the Mercury Nashville album, Johnson listed "The Kent Hardly Playboys" as producers.) "But then we started playing, and I was looking at Moose, and Moose was looking at Swine, and Swine was looking at Cowboy, and it felt like church in there. I called my wife, and said, 'Something's happening here. We're not making demos.'"

Church? Swine? Cowboy? Moose? Ah, yes. Take a deep breath. Nashville is back. And it sounds like 1972, only it's digital.

"I didn't realize how much I didn't like what was going on until I started producing some stuff," says Jim Brown, the Kent Hardly Playboy who's called "Moose." "The typical way records are made in Nashville is a kind of wall of sound. There's a couple of acoustic parts, a couple of electric rhythm parts, and then a piano and a Hammond B-3. They limit and compress everything so the level can stay hot all

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The World Series is upon us once again, but this month's "Metro" turns our focus back a few months to another huge baseball event: The 79th Major League All-Star Baseball Game held in July was the longest All-Star contest in history. But for at least one interested observer—composer Brian Langsbard up in Yankee Stadium's ancient audio booth—it was a 15-minute portion of the pre-game ceremony that felt like an eternity.

possible since that would have a big impact on how the director felt about the score. Then, being able to hear the real orchestra version of Joel's music later allowed me to A/B my mockups with the real thing."

Langsbard got an order for six different pieces of music for the 79th All-Star Game, including an intro, themes for the roll call of the National League and American League starters and non-starters, and one for the first pitch. Of particular interest, however, were the pieces that accompanied the entrance and roll call of 49 of the 64 living Hall of Fame Baseball players—an event of unpredictable length that would test Langsbard's nerves and experience for proper playback on the day of the big game.

Working out of his digital/analog hybrid personal studio in Mar Vista, Calif., Langsbard set to work using his Mac Pro Core 8 running a Logic 8 front end for Pro Tools HD. The computer side

is complemented by out-board gear that includes a Manley SLAM!, Avalon 747, Empirical Labs FAT-SO and Apogee PSX-100 converters. Of supreme importance to Langsbard are the East West Symphonic Orchestra and Vienna Symphonic Library,

taking up multiple gigs of memory on his hard drive. "I should give credit to those sample libraries," Langsbard says. "I would never choose one or the other when I could have both."

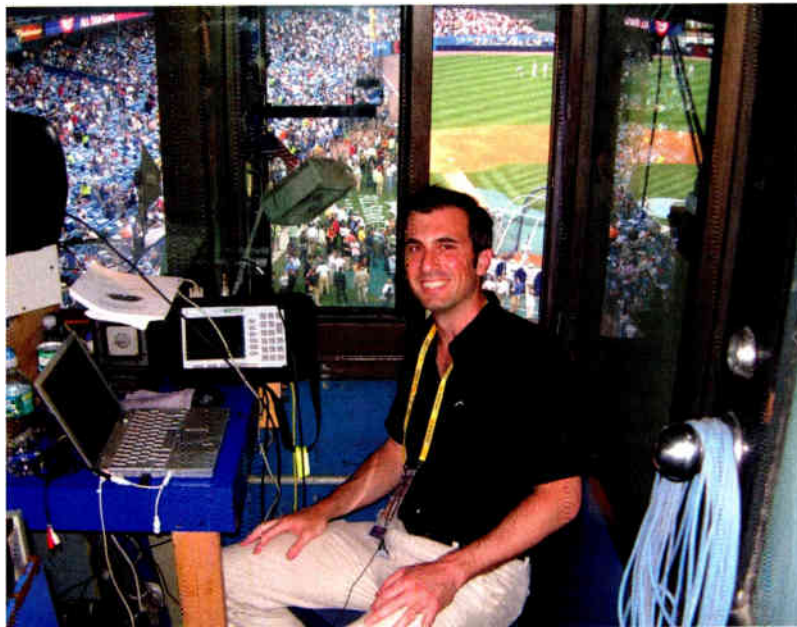
Langsbard set out to reflect the MLB sound. "We always toss around words like cinematic, heroic, orchestral, patriotic, moving and a certain degree of Americana," he says. "For the Hall of Fame piece, MLB wanted the energy sustained for a full 15 minutes. Compositionally, I used every trick in the book: new transitions, varying themes, keeping a driving percussion track running—which helps give it a constant feeling of movement and progression, and always save the choir for the big finish!"

With his history scoring for the big screen and past MLB events—including on-field presentations for the 2005 World Series and 2007 All-Star Game—Langsbard's experience in combining live events and cinematic composing sensibilities would pay off for the New York City show. "After doing two gigs previously, I know what to expect and how it's going to feel in the stadium," notes Langsbard. "This event is like a montage of scenes on the field that unfold, all scored to music meant for a crowd, where it's simply doing the job of supporting an emotion."

At Yankee Stadium on game day, MLB wisely decided that only Langsbard should be trusted with triggering the music cues during the ceremonies. Squeezed into the smallest major-league audio booth imaginable, when game time arrived he triggered his cues off a trusty and fortuitously tiny Mac G4 laptop from the live-mixing program DJ.

"I cannot quite explain just what a rush it is to hear my music blast through the sound system at Yankee Stadium," Langsbard says. "Without a doubt, the regal and historic nature of this event far surpassed any other job I've been a part of, and I was very proud to be part of such a tight production team. I may have aged at a slightly quicker rate during that whole week—I wouldn't trade it though!"

Send New York news to david@dwords.com.



Composer Brian Langsbard surveys the All-Star Game opening ceremonies at Yankee Stadium.

PHOTO: DAVID WEISS

Stakes were extra high on that July 15th, because as 2008 is the final year of operation for the Yankees' historic home park (in business since 1923), the game was the final All-Star event ever to be held there. Months before the contest, the L.A.-based Langsbard was informed by Major League Baseball (MLB) that his services would be needed in the Bronx, not simply to compose 25 minutes' worth of original anthemic music, but also to trigger the pieces live during the ceremonies. As an experienced TV composer (*Snapped*, *City Confidential*), MIDI preview orchestrator for film (*Air Force One*) and videogame composer (*Buzz Aldrin's Race Into Space*, *The Simpsons: Virtual Springfield*) as well as a veteran of previous MLB on-field presentations, Langsbard was ideal for executing the dual assignment.

"Baseball is the only sport with a true musical tradition—where everyone stands up and can sing the same song ["Take Me Out to the Ballgame"] together," Langsbard points out. "The MLB producers have the best ears of anyone I've worked with. They're quite demanding because they're used to licensing live orchestral music. So I have to convince them that I've used a live orchestra or it doesn't get approved."

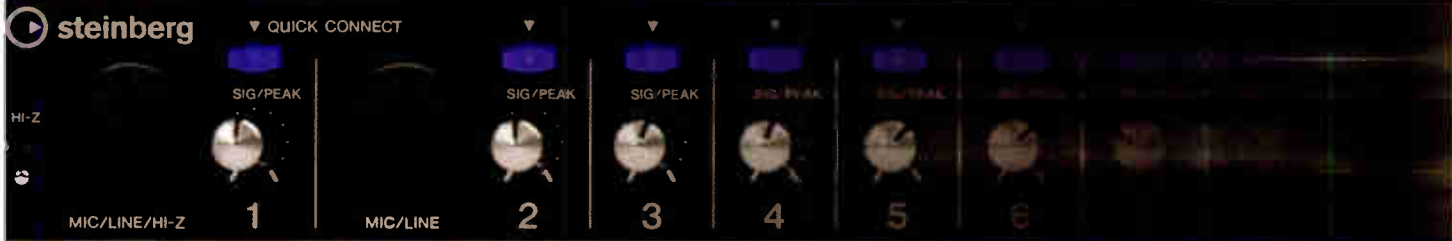
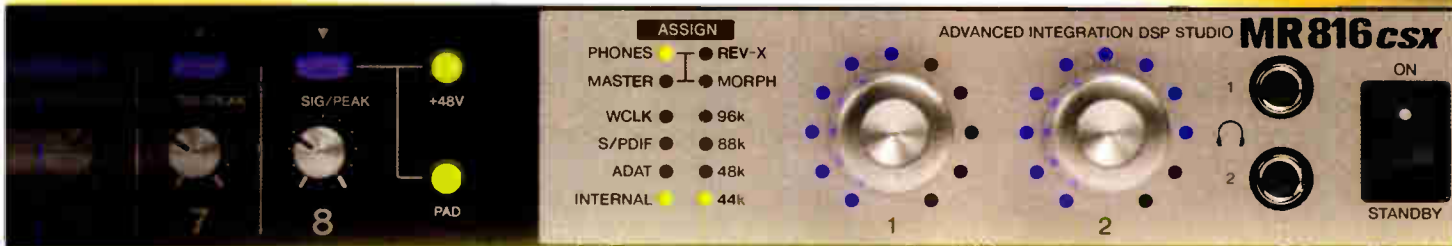
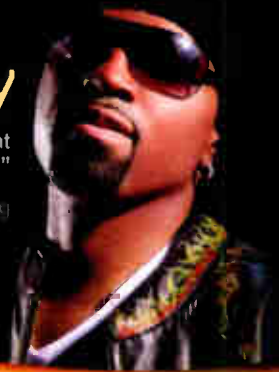
A self-confessed film-score fanatic since high school, Langsbard was unknowingly preparing for the MLB gig by pushing the composing and recording envelope every chance he got. His big break came working with Joel McNeely on the 1997 blockbuster film *Air Force One*. "Joel wrote a third of the music of that movie for Jerry Goldsmith," Langsbard says. "It was my job to produce orchestral mockups of Joe's music for the director, Wolfgang Petersen. Joel held me to extremely high standards of making that music sound as realistic as

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T Bone Burnett

IN THE TWO-PLUS YEARS

since our last “Mix Interview” with T Bone Burnett (July 2006), the producer/musician has been working nearly nonstop—as usual—and churning out some of the best music of his career. Julie Taymer’s film *Across the Universe*, for which he served as an arranger and co-producer of the music, brought the music of The Beatles to a new generation in a fresh and exciting way. The marvelous Robert Plant/Alison Krauss album *Raising Sand*, which he produced and played on, was a surprise smash hit (*Mix*, December 2007) that also spawned one of the coolest tours—complete with Burnett on guitar—of 2008 (August 2008).

He produced what is unquestionably B.B. King’s best album in decades—*One Kind Favor*—and John Mellencamp’s deep, soulful and revelatory *Life Death Love and Freedom*. The latter is the first album featuring a new sound innovation developed by Burnett, his trusty chief engineer Mike Piersante and others called CODE, which purports to deliver true high-definition audio to DVD, MP3 and other delivery formats. It’s all still slightly mysterious, involving certain proprietary pieces of gear and techniques, but hey, if it sounds good, we’re all for it!



Burnett was selected to be this year’s recipient of the TEC Hall of Fame Award before CODE was made public—purely on the basis of an amazing career that stretches back to Bob Dylan’s ramshackle Rolling Thunder Revue. Highlights include a handful of intelligent and provocative records with the Alpha Band and solo; an array of brilliant albums he’s produced for the likes of Los Lobos, Elvis Costello, The Wallflowers, Roy Orbison, Counting Crows, Gillian Welch, Cassandra Wilson and, yes, even Spinal Tap; and creative soundtrack work for films ranging from the Grammy-winning *O Brother, Where Art Thou?* to *Cold Mountain* to *The Ladykillers*.

We caught up with Burnett at his ElectroMagnetic Studio in L.A. in early September as he was finishing up work on a new album by longtime pal Elvis Costello. Our conversation this time centered around his recent projects.



Burnett onstage during Robert Plant and Alison Krauss' tour promoting the album *Raising Sand*

PHOTO: STEVE JENNINGS

2008 TEC Hall of Fame Winner Takes Songs, Sonics to New Heights

So what's the story with this new Elvis record?

It's a really cool group of songs, a couple we've written—we've been writing things for movies here and there, so there are a couple of those—a few songs he wrote for this opera on Hans Christian Anderson.

Did Hans Christian Anderson have an opera-worthy life?

I think so! [Laughs] You know, Elvis does so many things at once it's hard for me to keep track. But there are a few songs that are from a sort of more serious place, and then there are a lot of songs he's had around that he hadn't put anywhere, and things we felt like doing in the studio. But it's essentially a string band record, and then I'm playing really loud electric guitar. [Laughs] But he's singing really loud rock 'n' roll music.

It's got some great people on it: Mike Compton, Jerry Douglas, Stuart Duncan, Dennis Crouch, Jim Lauderdale, Emmylou [Harris]. There's no drums at all.

That's a twist from your recent productions, most of which seem to have a couple of drummers going most of the time and percussionists.

Right, as many drums as possible! [Laughs] Well, there are no traps on the Elvis record. Let's put it that way. Mandolin is a great drum.

On the B.B. King album, I noticed how you use maracas or shakers, and thought, "Who uses maracas these days?" I associate it with folks like Bo Diddley or Johnny Otis. It adds a lot.

I agree. You know, I don't like hi-hats. I don't like things that proscribe time very strictly. The way I hear hi-hats is, it's the drummer saying, 'Here's where the beat is'—ti-ti-ti-ti—and everyone sort of follows that and it can make the beat stiff; accurate perhaps, but stiff. So we don't use hi-hats, and all the things that would play those notes—the quarter-notes or eighth-notes—are these big shakers; not just one or a pair of maracas, but like 10 or 15 different gourds with beads in them or nuts, and they go *shh-floo-osshh!* [Laughs] So it expands and broadens the beat.

Last time we spoke, your solo album True False Identity had just come out and you were about to tour. How was your experience of the tour and putting out the record in this business climate?

The tour was the best and most expensive vacation I've ever been on. [Laughs] I loved doing the shows, and it was as good a band as I could dream of.

By "expensive vacation," do you mean you had to pay for the tour because Columbia doesn't do that anymore?

[Laughs] That's right!

Things have changed, as your buddy Bob Dylan once sang.

I'll say. I could probably buy Columbia now. [Laughs] And if we go much longer, they might just give it to me. Be



Working with filmmakers Ethan (left) and Joel Coen on the soundtrack to *O Brother, Where Art Thou?*

sure to mention that was a joke!

T Bone/BMG. That has a nice ring to it.

[Laughs] The music business gets stranger and stranger. But touring again was fun. I've been working with Sam Shepard in the theater for about 10 years now, and I've gotten more comfortable in the live environment—and the live experience has become more important to me.

As a kid, I fell in love with sound and I sequestered myself in the studio for most of 40 years and created my own universe and my own world, and came out [to play live] hesitantly because you can make a mistake in the studio and nobody knows it and things are private and calm and much more controllable. Going out live is a whole other animal and experience.

I don't think of you as a perfectionist, though.

I'm not at all. That's not it. It's just a different way of doing things. Painters paint in private; they don't usually get a big crowd around to watch them. I grew up with a lot of painters and I probably had more the mind-set of a painter. I always thought of making records as the equivalent of what my friends who painted did.

The Plant and Krauss album, Raising Sand, was one of the real delights of last year. Why do you

think it connected so well with people?

My point of view on it was this: Robert wanted to do it as a *band*. He didn't want to do it as a "duet record"—he sings a verse, she sings a verse, they sing the chorus together, they look at each other dreamily. [Laughs] He wanted to create a band, which I thought was a thrilling idea. These two singers are so extraordinary, I knew having two singers in a band together would be extraordinarily powerful.

It's a testament to the fans they have, too, that they were given the leeway to do this project that was outside of either's style.

Right. They were allowed to follow their muse. Of course, there were Led Zeppelin T-shirts at the show and there were Alison Krauss fans, and the first night, in Louisville, I think there were eight fights that broke out in the crowd! [Laughs] But very quickly it became clear that most of the people who came were also *Raising Sand* fans, so people were very respectful.

I would think that the music must have matured out on the road. After all, the album really chronicles the beginning of that band being together. Will there be some document of the tour?

We're going to do something, for sure. We have

a few more dates in September/October and I hope to record two or three of those. What I'd like to do most of all is record another record next year and then do a residency somewhere—like maybe do a week at The Fillmore in San Francisco—and shoot a DVD of the residency. We'll definitely continue on in some way. It's too much fun to abandon.

When I was thinking recently about how you came up with the obscure songs for that and the B.B. King album, I wondered to myself, "What would T Bone have done with Elvis Presley?"

Oh, God, would I love to have made a record with Elvis! I would have gone right to Maybelle Smith; go right back into the deepest part of New Orleans.

It's interesting you should say that, because when I listened to the B.B. King album I was surprised right off the bat that the first track, Blind Lemon Jefferson's "One Kind Favor," is more New Orleans than Texas, where Jefferson was from, or Mississippi, where B.B. is from. It's got Dr. John so prominently on piano.

It does have a lot of New Orleans in it. The whole record has a lot of swamp in it. But it's really the whole [Mississippi] Delta, not just New Orleans. And when you think about it, B.B. always used

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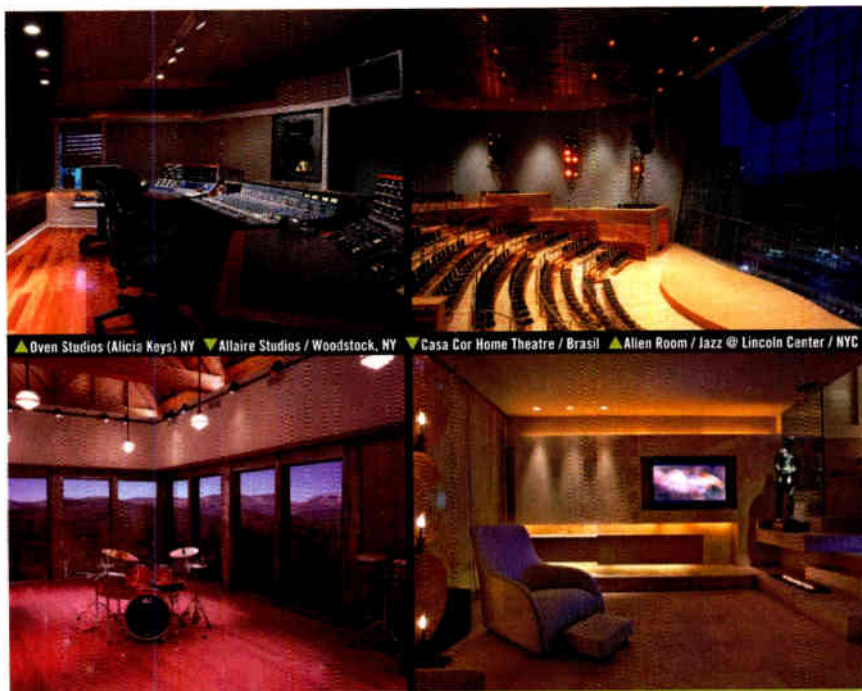


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T Bone Burnett

those New Orleans mambo beats and got into different time signatures and different feels. He was always adventurous that way.

It's amazing how much presence there is to both his singing and his playing. He's got the growl but can also still smooth his voice to a near-croon, and his guitar playing is rougher than we usually hear.

We roughed his guitar a little bit. We ran about three or four different amps into different rooms to try to get the right sound for each song. Because he's sort of been using this one sound he got dialed into a long time ago, and we let him use that because he was comfortable with it, but we also used some old [Fender] Tweed Deluxes, maybe a Vibroverb and a Vibrolux—great, old, grungy tube amplifiers. And his voice is more powerful than it's ever been. B.B. is rightly regarded as one of the best guitarists ever, but I also believe he's a better singer than he is a guitarist, so I really wanted to focus on his singing. His voice has mellowed into this almost Bill Eckstine vibrato, which is deep and rich and powerful.

How did working with Mellencamp come about?

He called up, and said, "T Bone, I want to make a record in five days, just acoustic guitar. I just wrote these songs in the last week. Do you want to come up here and record them?" I did, so I went up to his place and we started—he would put down a tune with acoustic guitar, and his guitar player, Andy York, was there and he'd play something. Then his bass player would come down from Cincinnati and play bass. Then, about the third or fourth day, the drummer showed up. I have a lot of guitar on there. It just kept growing. It was a moveable feast.

When you're producing someone like Mellencamp, what does that really entail?

With all these artists I've been working with lately, the main thing it entails is listening really hard. To be awake and listen hard and to be active imaginatively, to realize what he's talking about in the song—is the story getting told, the message getting out? How can that best be supported? I work more on that level now than on the level of telling people what notes to play.

Is it fair to say that almost everything we hear on albums you produce these days, regardless of what technology was used to record it, is sonically something that could have been done in 1958?

Well, it could have been put on tape in 1958, but it couldn't have been put on album in 1958 because there's a density to sound now—we're putting more bottom on now than the machines could have taken. Digital technology does not really operate in the sonic world very efficiently. You've seen a small JPEG picture

file blown up and how quickly it comes apart and pixilates? Well, the same thing happens with digital music. If you take an MP3 that might sound pretty good on ear buds and put it through a serious sound system, you start hearing these digital noises, static and chatter. People can't hear them on ear buds, but they're still being affected by them and their ears are still being shocked by those sounds. So we started experimenting with ways to get digital to sound better.

And that led you to CODE? I never would have expected for you to become an audio guru!

[Laughs] I always have cared about sound. I think we've gotten to a place where we've come to a comprehensive and complex system—really, it's more of a method than a system—where we can make digital sound on any format sound tremendously better.

I've read the articles and I still don't understand what the base of it is.

One of the seriously adverse effects of the decline of the record business has been a decline in quality control of the manufacturing, production and distribution of recorded music. I'm a child of Bill Putnam—I knew him a little, but mostly learned his methods through Allen Sides, who taught me so much about audio—and I've taken his theories and methods and applied them to the current environment we're in. Really, this is something we've developed for ourselves. I don't have great hopes of moving this whole industry that's bent on self-destruction.

Well, also, it doesn't sound like there's a box other people can buy.

Part of the reason I have to be somewhat circumspect in talking about it is we are filing for a few patents. There won't be a box you can buy, but we are automating the process.

Which, generally speaking, involves what?

It's a quality-control system—like THX is a quality-control system—and when we put our brand on it, the listener will know it's been made to the highest standards. It's a quality-control system for which we have developed a new set of standards that all relate back to the RIAA standard. You see, when the RIAA and NAB standards came in around 1950, there was a period of about 30 years where everyone was speaking the same language [sonically]. But with the advent of digital sound, those standards have been thrown out the window. Now people are listening on such a wide variety of devices and environments and formats. We spent several years experimenting and looking at the optimal ways to produce every

one of these kinds of files. We're now trying to produce MP3s to the same standards as Bill Putnam recorded to.

We're taking MP3 seriously because people listen to them. So why should they listen to MP3s ripped by god-knows-who that was ripped from a CD that was made from a pressing plant that ran it on a CD-ROM setting?

So we can hear that swampy, distorted guitar just as T Bone intended!

[Laughs] There may be people who think these records we make sound muddy because they don't sound like bright pop records, but they're

actually super-hi-fi. We're optimizing for every one of these formats and devices. For someone who's been doing this for 40 years and spent so much time trying to get the sound right, the way we want it, to have it then leave our hands and have maybe 10 people with no connection to the work making important decisions about how it sounds is unacceptable. The time is right for the artist to take control of the whole process, from production to manufacturing to delivery. III

Blair Jackson is the senior editor of Mix.

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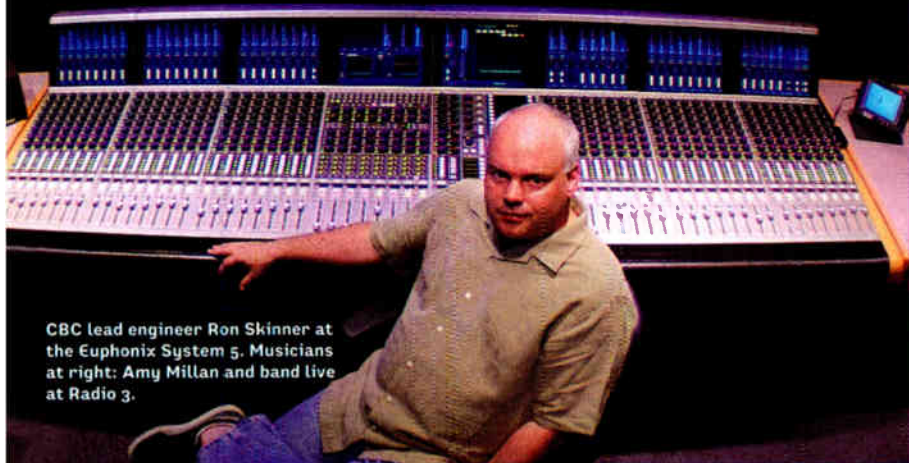
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CBC RADIO 3



CBC lead engineer Ron Skinner at the Euphonix System 5. Musicians at right: Amy Millan and band live at Radio 3.



Breaking Indie Bands With Digital Media Options

BY MARK R. SMITH

When broadcast technician Charles Ketchabaw started working for the Canadian Broadcasting Corp.'s Internet radio station Radio 3 in fall 2004, the station was just beginning to find its voice. But today, thanks to the CBC programmers' consistent ability to find bands on the verge of breaking—as well as direct iTunes linking—the network has become a vital Internet portal for up-and-coming indie bands in Canada. Radio 3's influence also extends to an international audience, as “tens of thousands of people from all over the world download our podcasts every week,” explains Ketchabaw.

An Honest Mix

The rise of Radio 3 has heightened production demands, starting with recording bands “live off the floor,” says Ketchabaw, noting “the great explosion of indie bands” featured on the network like The Stars, Broken Social Scene, Arcade Fire, Feist and Tokyo Police Club. According to CBC lead engineer Ron Skinner, the philosophy for Radio 3 sessions is that the bands perform live and are “allowed to record as many takes as they like. But we don't overdub or do any punch-ins to hide mistakes.”

With interest level in Radio 3 cranked up as high as the volume, Ketchabaw adds that the network's Euphonix System 5 console is just what the engineer ordered to record the show's content at CBC Studio 211 in Toronto.

“We have the same model Euphonix in our mobile truck,” Ketchabaw explains. “That al-

lows us to come back to create the mix—again, on the same board—for the podcasts in the next room [Studio 210].” As for the truck, Radio 3 offers some live-to-air broadcasts, sometimes recording the same bands from the studio in live settings, such as the recent North By Northeast Festival in Toronto, as well as local mainstays the Horseshoe Tavern or the El Mocambo Club.

Skinner notes the importance of an all-digital console: “We need to be able to recall sessions at a moment's notice and do a mixdown quickly. A band may spend a month mixing a 10-song album, but we may have to do up to eight in a day.”

In the Clutch

Skinner certainly knows the benefits of using the System 5 in tight situations. One example occurred during a recent recording session for Arcade Fire.

“At that point, Studio 211 had been set up for an orchestral recording,” he says. “and the client didn't want to change the setup. So the band set up in Studio 210 and we were able to use the remote mic preamps from the Euphonix to record the group in 211—though they were performing live for our radio broadcast next door.”

Skinner also appreciates the console's ergonomic layout. “It lets me work under the time constraints inherent in recording live music, especially in the radio industry,” he explains.

Riding the Digital Airwaves

Steve Pratt, the CBC's director of digital programming and Radio 3, says that between the Radio 3 Web station, its Sirius satellite radio

counterpart and iTunes, 4 million podcasts were downloaded in 2007, bringing the total to 10 million since the station began podcasting in June 2005.

“What sets us apart and serves as our ‘secret weapon’ is the part of our Website called New Music Canada,” says Pratt. “It's like MySpace because any artist that wants to can uplink their music so audiences can hear it. That gives us a lot of power to raise awareness of the artists.”

Today, Pratt says, the New Music Canada site boasts a whopping 65,000 tracks that can be streamed on demand. Listeners can make their own playlists, and many of the artists have posted “buy” links.

All told, Ketchabaw says the network is about showcasing the quality level of Studios 211 and 210, and the mobile unit, which underscores the CBC's commitment to Canadian artists.

“The difference between breaking a new band in the U.S. and Canada has become, simply, geography,” he says. “In most of the U.S., the big cities are two or three hours apart instead of eight like they are here. And Canadian artists have had a tough time getting to the outlying northern regions simply due to the country's topography.

“But in relying on the convergence of digital media, as opposed to the traditional terrestrial radio waves, those barriers have come down,” Ketchabaw concludes. “That's great for us as our tagline is ‘Breaking new sound.’” ■

Mark R. Smith is a freelance writer in the Washington, D.C., area.

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Digital Track Sheet

BY MAUREEN DRONEY

Everybody loves convenience. That is, of course, one of the fundamental reasons digital recording was so quickly embraced and has so quickly become ubiquitous. (Random access—cool! Nondestructive editing—yeah, that's the ticket! Unlimited tracks. "perfect" copies—gimme summa that!) But with the wisdom of hindsight it's clear that we rushed into the digital world without doing our homework, or our housekeeping, and we now have an overabundance of fundamental issues to address. These topics range from random labeling methods and insecure storage to nonstandard metadata and archiving methodologies, the dearth of documented credits for recording personnel, formats without longevity and—most important—the lack of a successful model for getting paid for all those "perfect" copies of the music you've created.

Let's start with today's average music recording project. In the typical workflow for material that's born digital, audio is tracked to an external drive, most likely FireWire or USB. Then, through the lifespan of the project, it moves from studio to studio, and probably from drive to drive. When the project is complete, the master drive (if there actually is a "master drive") gets stored on a shelf somewhere.

Unfortunately, as mentioned above, this common scenario creates a multitude of problems related to both the digital data containing the project's audio information and the

FILE-MANAGEMENT STANDARDS WILL PROTECT YOUR LIVELIHOOD

metadata (literally, "data about data") that adds identifying descriptors to the audio data. What back in analog days was a fairly straight-ahead process of documenting information about 24 or 48 tracks of audio onto a track sheet, and then handing off clearly identified physical masters on a standardized analog format to a record label is now, well, yet another version of the 21st-century Wild West.

To learn more about digital data problems and potential solutions, we turned to John Spencer, president of BMS/Chace, a company with offices in Nashville, New York and Los Angeles that provides data-management services to the entertainment industry. With seven years in business developing digital solutions and special expertise in the music recording industry, BMS/Chace is championing the need for a more global solution for audio information

management. To that end, the company has become a partner in an ambitious effort with the Library of Congress' Preserving Creative America project (www.digitalpreservation.gov) to develop a standardized methodology for the collection and documentation of recorded musical assets—in other words, your allum project. The project is scheduled to debut in the music community in the near future, but meanwhile, Spencer continues in the data-collection trenches.

"Among the services that BMS/Chace provides are outsourced master delivery for music labels, verification of assets and the creation of a viable digital preservation package for the master recording," explains Spencer. "While supplying these services, we've identified a series of across-the-board issues that people need to be educated about."

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World Radio History

Six Reasons for Better Documentation

1. **Longevity of the carrier.** Simply put, hard drives fail. Any carrier has the potential for failure. There are many storage options available, some better than others, but the assumption should be made that carrier obsolescence will become a factor with your digital preservation files. Educate yourself about the storage options that are available to you. (For some of the latest recommendations, see "Recommendation for Delivery of Master Recordings," the result of a joint effort by the Audio Engineering Society and the Recording Academy Producers & Engineers Wing, at www.grammy.com/PDFs/Recording_Academy/Producers_And_Engineers/DeliveryRecs.pdf.)

2. **Consolidation of DAW tracks.** Often, the person attempting to archive a DAW session ends up with hundreds of audio and edit files. For ease of use by others in the recording chain and for proper archiving at the end of the project, files need to be consolidated and tracks identified. (C'mon, you're not still using "Audio 1, Audio 2" for labels, are you?) In addition, digital preservation files have a much greater chance of survival if software and platform obsolescence



John Spencer is president of BMS/Chace, which is working with the Library of Congress to develop standardized ways to document digital audio files.

are taken out of the storage equation. Make Broadcast Wave Format (BWF) standard operating procedure for archiving your projects.

3. **Lack of standardization for file naming, storage of file names and metadata usage.** Will you be able to identify and locate the file you

want to use or retrieve? For example, without proper documentation it's impossible to determine which of the consolidated files was actually used for the final mix. In addition, metadata about the project should be collected during the recording and mixing process to facilitate repurposing and other monetization opportunities, as well as technical recording information and any other relevant information (performers, liner notes, etc.).

4. **Plug-ins.** Some people want to document their plug-in usage; others may want to keep their settings confidential. The bottom line is, you can't count on that plug-in being around in five years. Print the track both dry and with the plug-in. If you want, keep your settings proprietary. You can also document them for future use. But you can't assume that the plug-in will be available in the long or even the short term.

5. **Checksums.** When you're ready to take the material on that hard drive you've put on the shelf and migrate it to another carrier, how do you know that you've created a bit-for-bit copy? That's what checksums (cryptographic hash generators used to compare and check the integrity of files) are for. Say you have 20 files.

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You drag the files into a hash generator (such as MD-5) that creates 16-character streams, or “hash keys” for each file. Now you’ve got 20 16-character streams. When you copy that file to another piece of media, you can run the same hash algorithm app again to ensure that the hash keys are the same and that you’ve got an absolute bit-for-bit copy.

6. Unique identifiers. Before you can create a checksum, you need to modify the file name so that you have two differently named identical files for comparison. It is recommended that you use unique identifiers, which are a strand

of characters dropped into a section of the data header of a Broadcast WAV file. Remember that you don’t want to modify anything else in the file—just the name.

Connecting the Dots

“Understanding and putting into practice these six concepts will get you on your way to being in business,” Spencer says. “With consolidated files, standardized naming conventions, unique identifiers and checksums, you’ve organized the main pieces of information that need to be associated with a file to successfully retrieve your

audio data—and your explanatory metadata. It’s best, of course, if you keep the files of metadata in a separate database file. So if you have 20 audio files, you should have 20 records in a database file, which includes the names, the checksums and the unique identifiers.

“This will provide you with what’s called the ‘linkage mechanism’ to identify which file is which,” Spencer continues. “Then, depending on how your metadata database is built, you can also have the ability to collect all of the technical data for the project, such as signal chain, microphones and instruments used, et cetera, along with descriptive metadata, such as performance information; engineer, producer and musician names; liner notes; even artwork.”

The BMS/Chace/Library of Congress project, when complete, will create a standardized template for the collection of all of this crucial technical and descriptive metadata, as well as the identifiers, unique IDs, checksums and proper file names. It will also provide the opportunity for a given project to collect the other critical information that’s generated during the course of the recording, including accurate song titles, publishing information and e-commerce necessities such as ISRC codes and their counterparts. Expect to hear more about this project: One of the challenges will be to educate people about the importance of using the system. To help do that, a number of partners are also on-board with the project, including Sony BMG Music, Universal Music Group, EMI, Disney Music Group and the Recording Academy Producers & Engineers Wing.

“People often tend to think that the studio is a kind of bubble where they go to create music,” Spencer concludes. “But when they’re out of the bubble and handing off their material to a label, a media company or an aggregator who’s going to get the music up for sale, there’s a whole other set of information that needs to be associated with the project, as well.

“What we are trying to create is a standard, unified way to hand off this data. People want their work to be seen by the search engines and to be conveniently and accurately tracked for payments. So not only is this information critical to the recording process, it’s also integral for meta-tagging for e-commerce and repurposing material for future use and revenue generation. While for most people, proper techniques for dealing with files and metadata are not sexy topics, they really are key to the whole process. The easier and more routine we can make it for these techniques to be adopted, the better off the whole industry will be.” ■■■

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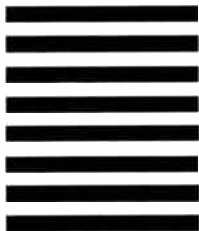
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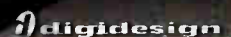




PHOTO: FROM THE BOOK C'ERA UNA VOLTA LA RCA BY M. BECKER, COURTESY OF CONSIGLIO EDITORE

Morricone in RCA Studios, Rome, working on the score for *A Fistful of Dollars*

FILM MUSIC MAESTRO

Ennio Morricone

Iconic Composer Shares His Approach to Writing, Recording and Taking His Creations to the Stage

BY MIKE CLARK

Watching Ennio Morricone receive his Honorary Award for "magnificent and multifaceted contributions to the art of film music" at the 79th Academy Awards ceremony in February 2007, viewers were able to grasp in his speech (which was translated by Clint Eastwood) the humble, down-to-earth nature of one of cinema's most inventive and original composers.

Morricone's career dates back to 1961, when, a few years after obtaining diplomas in trumpet and composition at Rome's Santa Cecilia Conservatory, he began working on music for *A Fistful of Dollars* (1964), the first of a series of legendary Western soundtracks for Sergio Leone. During an almost 50-year career, Morricone has scored more than 400 films, working with many of the world's top directors. His best-known soundtracks include *The Battle of Algiers*, *The Good, the Bad and the Ugly*, *Sacco and Vanzetti*, *Cinema Paradiso*, *The Legend of 1900*, *Malena*, *The Untouchables*, *Once Upon a Time in America*, *The Mission* and *U-Turn*. Apart

from his ex-schoolmate Leone, his illustrious clients have included filmmakers such as Gillo Pontecorvo, Pier Paolo Pasolini, Bernardo Bertolucci, Giuliano Montaldo, Giuseppe Tornatore, Brian De Palma, Roman Polanski, Warren Beatty, Oliver Stone, Margarethe von Trotta, Henri Verneuil, Pedro Almodóvar and Roland Joffé.

"The film's director is my client and is the person who contacts me," says Morricone, 80, from the home in Rome where he does all his writing. "There are various ways of going about the job. Sometimes I discuss the film with the director or he gives me the script to read; on other occasions, I view the first edit, the dailies or the final cut, and when I've got clear ideas I meet for discussions with the director and submit my ideas. I have a very close relationship with the directors I work with. Their collaboration is very important, but they must put their complete trust in the composer. Some directors have very clear, sometimes restrictive, ideas on what they want from a musical point of view, which limits composers' creativity."

The Composer's Approach

The average viewer might imagine that when a composer hasn't seen the edited film but only read the script, he might begin by writing the main theme, but Morricone says that this is not always the case: "Every film has a characteristic



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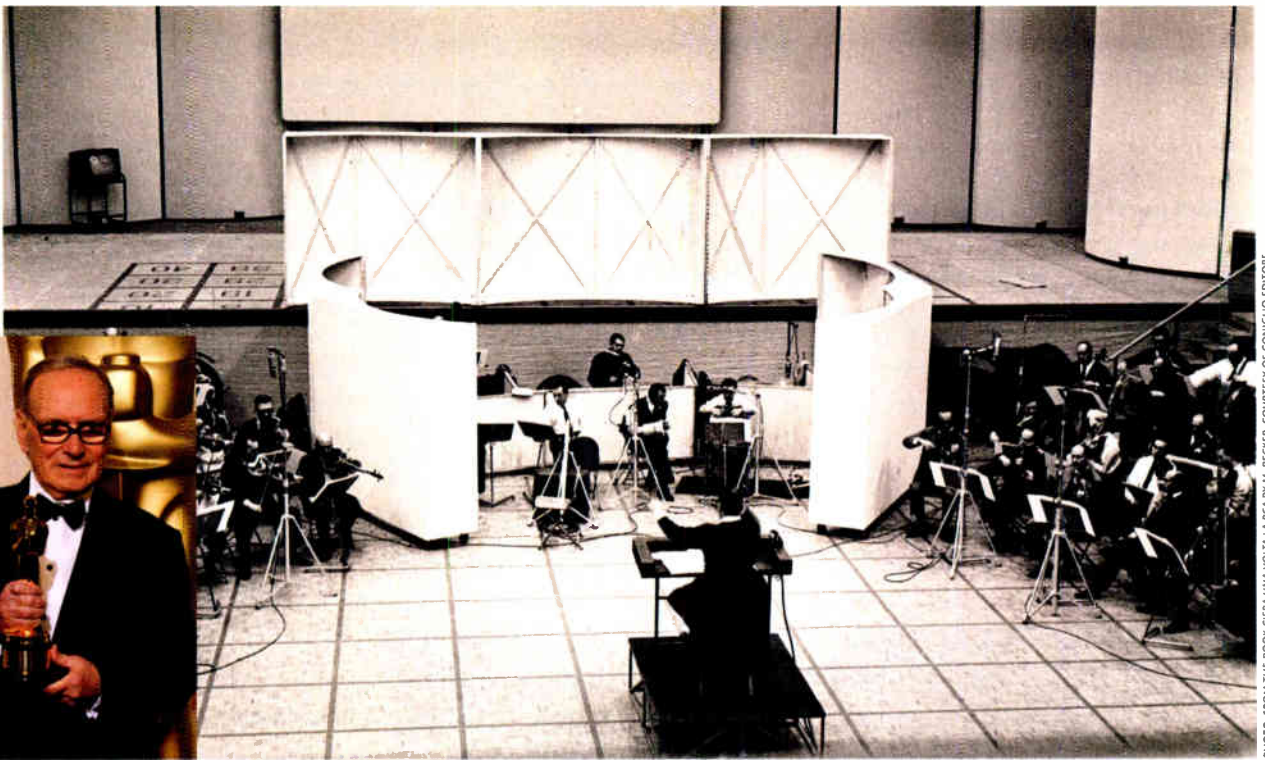


PHOTO: FROM THE BOOK 'E'RA UNA VOLTA LA RCA BY M. BECKER, COURTESY OF CONICLIO EDITORE

Left: Morricone receives his Honorary Academy Award in 2007. Above: Conducting the Ennio Morricone Orchestra in RCA Studio A, Rome, in 1965.

feature, which can be suggested by the director or 'felt' by the composer. This characteristic must remain, and the music is born from that certain feel, typical feature or style that the composer grasps. Each composer reacts personally to the film's action and style—the director's 'poetics,' the images, story and key sequences or scenes. So, in theory, 10 composers will write 10 totally different scores for the same film and they could all be good—if the composers are."

Another commonplace notion refuted by Morricone is that a composer's approach varies according to the type of film—a love story, an action movie, a Western, etc. "My personal approach is always the same," he says, "but it could vary, for example, if the director gives the composer carte blanche or is restrictive as far as music is concerned."

He notes that the time he needs to score a feature will vary according to the amount of music in each film, adding that it also "depends a lot on the period of reflection required: In some cases, I have a very clear idea of what to do almost as soon as I see a film, whereas in others a lengthy period of thought may be required. However, when I've got clear ideas and am in agreement with the director, it might take two or three weeks—even just 10 days!"

The Score in the Studio

Morricone stresses the particular importance of his working relationship with studio sound engineers. "I met [the late] Franco Patrignani at RCA's Rome studios on *Via Tiburtina* many

years ago, and we had a great, friendly relationship. This is a must with the technicians with whom I work because their job is of fundamental importance—they don't write the music, but they have the job of realizing what the composer wants and they personally contribute to achieving the necessary results."

In the late '60s, Morricone and three other top Italian composers (Armando Trovajoli, Luis Bacalov and Piero Piccioni) founded Forum Studios (Rome), which was helmed from 1979 by Patrignani, one of Italy's best-known engineers, and his wife. The couple evidently passed on the recording bug to their son, Marco, who worked in the studios from his teenage days while studying marketing and business administration and completely rebuilt the studios before founding Forum Music Village (FMV). Since then, FMV has hosted top Italian and international artists, including Morrissey, who also worked with Morricone, and cellist Yo-Yo Ma, who recorded *Yo-Yo Ma Plays Ennio Morricone* in 2003. Recently, Morricone recorded music there for an ad for a new Lancia car, featuring Richard Gere and directed by Harald Zwart (*Pink Panther 2*), so he does more than just feature scoring.

Fabio Venturi is the composer's regular studio and live sound engineer these days. He explains how their methods have changed since he first began working with Morricone 10 years ago: "When I first began, for multitrack projects we used 21 analog tracks with Dolby SR, then passed on to Sony 24-track DASH machines and, more recently, Pro Tools," Venturi says. "These upgrades led to big changes in the way

recordings were produced, thanks to greater possibilities in terms of editing, number of tracks and sound management, and processing via plug-ins. Although Morricone has never gone into the application details of the hardware used, he's always been very aware of the operative possibilities offered by new technology and its creative use, such as loops, digital sound processing, et cetera."

As far as miking techniques, Venturi says the main change over the years has been the increase in the quantity due to the larger number of tracks available. Venturi has used classic miking schemes such as the Decca Tree (both on the orchestra as a whole and for sections), but he continues to experiment. He's been known to use the SPL Atmos 5.1 surround recording system with Brauner's ASM 5 5-channel adjustable surround microphone, for example. "Changes as far as desks were concerned weren't so radical," Venturi offers. "We passed from a Harrison 32-input analog to a Neve analog console; input quality and quantity is without a doubt better, but the *modus operandi* remained unchanged."

Morricone says of Venturi, "He's well aware of my requirements and what's needed to achieve the results I want. There's a great harmony between myself and Fabio, and the engineers I worked with before him—there's a sort of unspoken communication between us. As far as recording is concerned, I started writing music many years ago and recorded on three tracks first, then eight, 16, 24, 48 and now, thanks to the use of computers, they're countless. The important thing is not to be

Ennio Morricone

'passive' in front of technology. Certain things I invented from a musical point of view were the direct result of the technical means I had at my disposal, so there must be an active use of technology, not a mere acceptance of what it's able to provide. Composers can invent a new, completely different way of writing by means of the implementation of technology."

Famous Fans Go on Record

A few days after the 2007 Oscar ceremony, a Morricone tribute album was released. *We All Love Ennio Morricone* features some of the big-

gest names in contemporary pop, rock, jazz and classical music, and it cracked the Top 5 in Italy's charts. The all-star cast includes Metallica (who have featured the maestro's "Ecstasy of Gold" from *The Good, the Bad and the Ugly* as an intro to their shows since 1983, complete with footage from the film), and other illustrious fans such as Bruce Springsteen, Celine Dion, Yo-Yo Ma, Roger Waters, tenor Andrea Bocelli and Quincy Jones with Herbie Hancock.

"You realize that you have composed important music when someone, somewhere is

playing it," Morricone says. "I am, however, astonished, obviously in a good way, that famous artists from the musical world have paid tribute to me by participating in this project."

Film Scores Come Alive

Few internationally renowned artists *begin* playing regular concerts at 70-plus years of age, but Morricone performs in public more often now than ever. "There wasn't such a big demand in the past," he says. "Not because I don't like appearing in public; I do more concerts now because they ask me." Since 2001, Morricone has directed his music before packed, spellbound audiences throughout Europe, in the U.S., Latin America, Korea and Japan, appearing in venues such as Radio City Music Hall, the Verona Arena, Taormina's Greek Theatre, Royal Albert Hall in London, the Kremlin, the Vatican's Nervi Hall, the UN General Assembly and St. Mark's Square in Venice.

To ready his music for live performance, Morricone explains, he has joined smaller pieces of music together into longer suites "Rather than single pieces, which would require the audience to applaud every few minutes, I thought the best idea was to create a series of suites lasting from 15 to 20 minutes, which form a sort of symphony in various movements—alternating successful pieces with personal favorites."

In concert, Morricone normally has 180 to 200 musicians and vocalists under his baton, performing multiple genre-crossing collections of music. Rock, symphonic and ethnic instruments share the stage, which doesn't make Venturi's work easy. The engineer has to seamlessly move from orchestral music, such as the score to *The Mission*, to a piece with a punchy rhythm section ("One Night At Dinner") and then into a complex combination of both ("The Working Class Goes to Heaven"). But he responds with a combination of strategic instrument positioning, the use of acoustic panels and careful mixing. Digital desks have proved priceless for this type of work: "They're unbeatable, thanks to the number of inputs, onboard signal processing, the possibility of storing scenes, as well as their small footprint and light weight," Venturi says.

The crowds that attend Morricone's concerts expect their favorites to sound as they're accustomed to hearing them at the movies, and the sound reinforcement system at these performances is massive. "We're compelled to use spot mics placed much closer to the instruments, so more mics are required," Ven-



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turi says. "For an orchestra, I'd normally use from 40 to 50 mics when recording, but we need considerably more than 100 for live gigs. Widespread use of 'bugs' for the strings also ensures more direct sound and less P.A. spill. In studio, not only is this unnecessary, but I try to avoid it to ensure a greater amount of reverberated sound."

Venturi's customary concert mic setup makes wide use of Schoeps CCM 4/MK 4 cardioids (strings, harps and woodwinds) and DPA 4060 miniature mics with adaptors on some of the strings—two on the basses and celli, as the lower the instrument's register, the more "bug" backup is necessary. He also uses a pair of CCM 4s on the piano and an MK4 capsule with an active tube for the soprano sax. Schoeps MK21s are used for the brass, marimba, vibes and tympani, and a series of MHK60s for the chorus. Venturi also habitually uses AKG 414s on the horns, bells, symphonic snare drum and percussion, as well as on part of the drum kit.



Recording the soundtrack for Lajos Koltai's 2005 film *Fateless* with the Hungarian Radio Symphony Orchestra in Budapest.

The bass tubas and the rock snare have SM57s and the kick drum an AKG 112. He uses BSS DI boxes on bass, guitar and synthesizers.

Another crucial aspect addressed at concerts is monitoring, and Venturi tries to use as many enclosures as possible to keep the volume of each to a minimum, reducing the risk of them being picked up by the mics. "Normally, we use about 40 monitors of various sizes and six sets of 'cans' [headphones], usually for the rhythm section and percussionists."

Passing the Torch

The music chromosome evidently continues in Morricone family's DNA, as his son, Andrea—after attending the Santa Cecilia Conservatory and writing soundtracks with his father for a while—now has his own successful career as a composer and conductor.

Meanwhile, the maestro shows no signs of slowing down. As of this writing, he was composing music for two films: one by Giuseppe Tornatore called *Baaria*; the other by Giacomo Battiato, *Resolution 819*.

"[Music for film is] an extraordinary art and being relatively young, it's hard to imagine where it will head in the future," Morricone observes. "After 50 years in this profession, I'm not tired of it, I still enjoy it and don't know what else I could have done in life if not this, which is the reason I continue to be excited by composing and performing my music." ■

Journalist Mike Clark (mclark@rimini.com) covers entertainment technology from his home in Italy.



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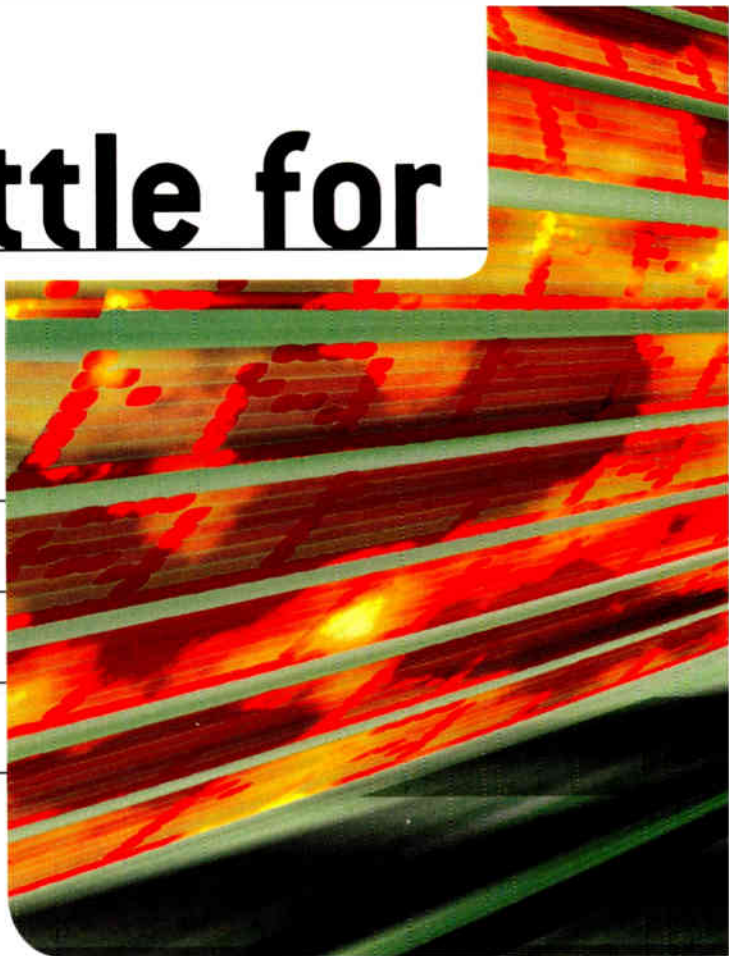
The Battle for

AN UNCERTAIN

FUTURE

FOR PRO AUDIO

WIRELESS



BY STEVE LA CERRA

It's rare that the terms "pro audio" and "turmoil" are used in the same sentence. However, during the past 18 months, the wireless pro audio world has been in turmoil over the changes that will result from the FCC's frequency re-allocations that will take effect on February 19, 2009. Several different issues are in play simultaneously, the latest of which is that the U.S. Congress is contemplating a bill that would open up what are considered by many to be the "unused" portions of the frequency spectrum—aka, white spaces—for broadband use. The pro audio wireless industry faces a daunting challenge in maintaining its ability to run large-scale productions that rely heavily upon wireless equipment. Even as *Mix* prepared this article, new developments were literally happening on a daily basis.

A Quick History

Although licenses are required for wireless microphones, wireless audio gear transmits at very low power levels (averaging 50 milliwatts and maxing out by law at 250 mW). Add to that the fact that wireless mics do not broadcast 24/7 and that the FCC has basically ignored that there are millions of wireless mic users as opposed to the many other types of RF devices.

The licensing requirement was originally created as a means of tracking down cases of in-

terference between wireless mic signals and TV broadcasts, but such problems never appeared. With decades of successful spectrum-sharing between wireless audio and TV broadcast, the FCC never set aside a specific UHF band for wireless mic applications as it has for aircraft communications, radio and TV broadcasting, cell phones and public-safety communication purposes. James Stoffo—who is frequency coordinator for the NBA All-Stars and Finals broadcasts, the Latin Grammy Awards and *Billboard* Latin Music Awards, and an entertainment RF technician for the Super Bowl—estimates that there are between a half-million and a million wireless mics in the U.S., but that fewer than 1,000 are licensed by the FCC.

Full-power, terrestrial analog broadcast television is scheduled to cease in the U.S. in February 2009, which means that analog TV will be obsolete and that the frequencies formerly used for analog TV will become available for other uses. This gives the illusion that there will be a lot of bandwidth available for competing technologies, but this is not the case.

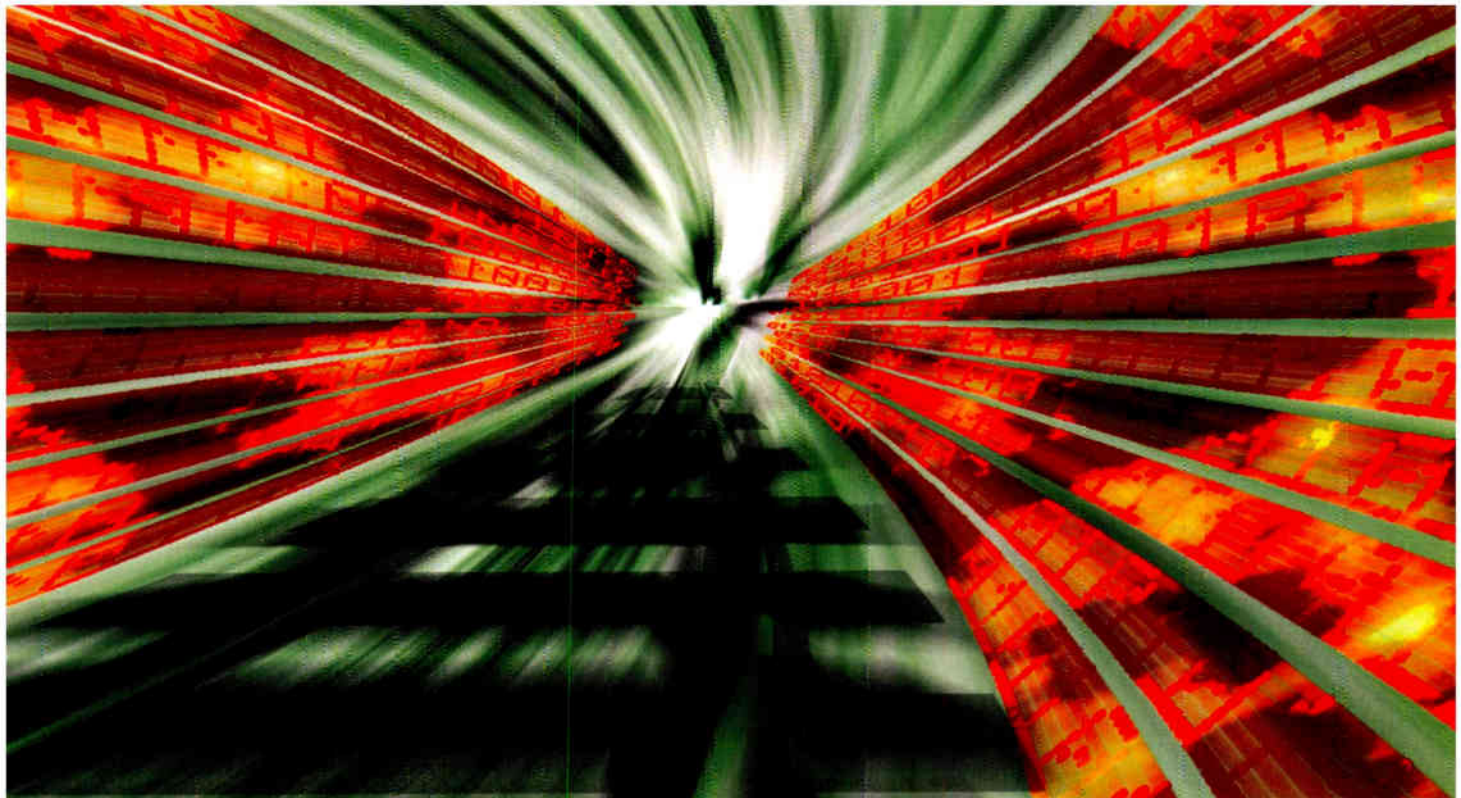
Prime Real Estate

Lectrosonics' director of business development, Karl Winkler, reminds us that many people desire the UHF band for the same reasons. "The

UHF band between 500 and 800 MHz offers excellent wave-propagation characteristics, as well as practical antenna size," he says. "UHF can transmit over long distances with relatively low power. As frequencies get higher, it takes more energy to transmit the same distance and the wave is less able to penetrate through or bounce around objects. A ¼-wave antenna is very efficient for a UHF device, and at around three inches long that's very attractive. When you get into the frequency range higher than 1 GHz, antenna length can be even shorter, but you begin to lose the desirable propagation characteristics of UHF."

Here Comes the Big Bad Wolf

Three major issues face pro audio wireless, two of which are already facts of life. The first is known as the "digital dividend." Joe Ciaudelli, Sennheiser USA's consultant for professional products, explains, "The digital dividend is the re-allocation of the frequencies between 698 and 806 MHz, corresponding to UHF channels 52 through 69. Right now, television broadcasters are transmitting both analog and DTV signals. That ends in February of 2009, and when the analog channels are shut off, all TV broadcast will be consolidated below channel 52. This gave the government the ability to auction off chan-



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Bandwidth

nels 52 through 69. Verizon and ATT submitted winning bids on this spectrum, allowing them to secure these frequencies for a new class of consumer service after February 2009. This is a huge windfall for the government—they raised \$19 billion. They were able to do this because DTV channels can be placed right next to each other, whereas analog channels required guard bands to prevent interference. When analog transmission ceases, DTV channels will be pushed closer together, freeing up the space from UHF 52 to 69. That is already a done deal.”

Stoffo elaborates on the second issue. “Strike two is the fact that a DTV channel is a complete 6MHz-wide burst of energy, and you cannot fit anything else inside it. If you picture a window of 6MHz spectrum, you can have an analog TV station in that space with one strong picture carrier and a separate sound carrier. Then, depending upon the strength of the TV station, you could also fit a couple of wireless microphones or in-ears in the white spaces [unused portions] of that window. DTV completely fills that window, so you must vacate that band entirely. This is why we are losing so much operational capability.

“Since 1962, we have had from 470 MHz to 806 MHz available for wireless microphone use—that’s around 330 MHz of bandwidth,” Stoffo continues. “We lost 108 MHz of that

bandwidth due to the auctions, and with DTV broadcast firing up, we lost half the remaining spectrum. The result is that we have approximately one-third of the bandwidth that was formerly available. A production like the Super Bowl requires around 1,500 RF microphones and we’ll use close to 2,000 different frequencies. Trying to fit that into one-third of the bandwidth is going to be very difficult, if not impossible.”

The potential strike three, which Stoffo calls “the final nail in the coffin,” is legislation that the government is currently considering. “White space legislation—which has not yet happened—would open up the ‘unused’ UHF TV channels for broadband use,” reports Mark Brunner, Shure’s senior director of public and industry relations. “That is why the FCC has been conducting tests on proposed white-space devices.”

During the summer of 2008, at the request of the Senate and the House of Representatives, the FCC began conducting field trials of proposed white-space devices. In theory, an approved white-space device would scan the local RF spectrum when turned on, identify the frequencies that are already in use and then choose a vacant frequency for its own operation. On August 9, 2008, the FCC attended a pre-season NFL football game in Washington, D.C.,

at FedEx Field. Prototype white-space devices were turned on and failed to scan the RF spectrum accurately for active wireless mics or TV channels. They also caused interference with the wireless mics already in use and failed to consistently recognize wireless mics that were turned on during the course of the game.

On August 11 and 12, FCC engineers attended test sessions at the Majestic Theater in New York City for prototype white-space devices submitted to the FCC for approval by electronics manufacturers Philips and I2R. (RF devices require FCC approval to be sold in the U.S.) Again, the devices failed. “The two devices had opposite problems,” reveals Brunner. “The Philips unit detected everything and the I2R detected nothing. By ‘everything,’ I mean that its interface showed no vacant spectrum. Discerning a microphone when you believe all channels are occupied is a moot point. The I2R device, on the other hand, simply failed to detect any of the wireless microphones, even from the tenth row of the theater.

“It was a real eye-opener for FCC engineers to see the level of RF activity, and it validates what we have been saying throughout the entire proceeding: It would be a mistake to create technical rules regarding white-space devices without understanding exactly what is happening in the operating environment,” Brunner adds.



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The Battle for Bandwidth

Where Do We Go From Here?

The results of the FCC trials will be compiled and reported to the U.S. House of Representatives and the Senate, but as Ciaudelli points out, "This does not guarantee that the politicians will make an objective decision. The FCC engineers are being very thorough and scientific about their approach, and they will make recommendations, but they do not legislate. We do hope that the politicians evaluate the data in the same impartial manner that the FCC engineers gathered it rather than be swayed by lobbying dollars. There is a lot of money at stake, and companies like Google, Microsoft, Intel and Dell have significantly more lobbying resources than the pro audio industry."

Users of pro audio wireless systems are already facing the fact that they may have wireless gear operating on frequencies between 698 and 806 MHz—those channels that were auctioned. "Lectrosonics has gone into a 'special-order' status for products operating in the 700MHz band," notes Winkler. "After the end of this year, we will no longer manufacture products for the U.S. market in that band. To compensate for that loss of bandwidth, we added three frequency blocks at the bottom end of the UHF band in the range from 470 to 538 MHz. We also added a block high above this range at 944 MHz, so if you were running a lot of wireless microphones and needed to squeeze in two more IFB channels, that would be a place to do it."

According to Brunner, "Shure has been working with our major accounts to help transition inventory away from wireless systems in the 698 to 806MHz band. Exactly what rules will be in place post-DTV transition—which is when this spectrum is available for use by the new parties—has yet to be determined and will be discussed at the August 22 Commissioner's meeting at the FCC. Hopefully, we'll get some clarity from that meeting, but it is clear to all wireless manufacturers that this is no longer a usable spectrum."

Ciaudelli agrees: "The inability to use the 700MHz band definitely makes our lives a little more complicated. As time goes on, it will be more difficult to predict reliable operation of wireless microphones in the spectrum between 698 and 806 MHz. There is also the possibility that the FCC will change their regulations and restrict use of wireless microphones in that spectrum. Until they make that proposal, I do not want to induce fear in people, but since last year we have been telling our customers who desire to add more wireless channels to their systems [to] opt for channels operating below that range."

As we spoke with Stoffo, he was at the Pepsi



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Center in Denver, prepping for the Democratic National Convention. "A third or more of the RF that I am seeing in this building is above 698 MHz, which will be unusable after February 2009. After that time, companies like Motorola and Qualcomm will be firing up high-powered devices in that band, for which they paid billions of dollars. If they experience disrupted service because of your wireless microphones, they could take legal action against you."

Brunner is optimistic that the FCC will not shut wireless mic users out of the white space below 698 MHz. "It's more a question of whether the FCC will allow this new class of devices to share the same spectrum that we use for our wireless microphones." Ciaudelli adds: "Our contention is that major news and entertainment events would not be able to provide the same production quality if the spectrum was randomly flooded

white-space devices, I'll certainly be using that space for my wireless equipment. I anticipate that to last about a year until the white-space devices are introduced and then, of course, it is all up in the air."

Brunner acknowledges an "unyielding desire of broadband technology manufacturers to get their hands on the UHF band. There is a relentless drive to pursue this technology and there has been discussion of alternative approaches. Motorola is talking about 'geolocation' as the key to making this work, or possibly deploying beacon transmitters to protect wireless microphones.

"A beacon transmitter communicates frequency information to a portable device and directs it to stay off a particular channel," Brunner explains. "It would put out a signature that is more easily recognized by the white-space device, perhaps containing data that says '545.7



with interference from these new devices."

"It appears to me that the FCC is being muscled by large corporations to push through approval of these devices even though they are failing the tests," Stoffo says. "One telecommunications corporation makes more profit than the entire audio industry combined, and that may influence the decisions unfavorably. If that means you can't enjoy a Broadway musical or a football game, it will change the culture of America. It could also translate into a safety issue. In the case of *Cirque du Soleil*, I installed most of the backstage communications. What if someone is going to be jumping off a platform 90 feet in the air and that net is not in place? If you cannot communicate that to the person calling the show, someone may get hurt.

"I think that the FCC is going to approve the products, we'll have a couple of catastrophic events and then everyone will realize that the FCC messed up," Stoffo continues. "The one relief I see in this is that there will be a short period of time [starting from February 17 until the white-space devices are introduced] when my job will actually get easier. A major market has about 15 analog stations representing 90 MHz of spectrum. If they turn off the analog stations without immediately replacing them with

is occupied. Stay off it.' That sounds wonderful, but the device has to sense the beacon and we still have the same problems: multipath, overshadowing by strong DTV signals. Plus, the beacon itself requires spectrum so it's almost counterproductive. If a portable device knows what city it is in by virtue of geolocation, it could be given access to a data table of what TV channels are on air in that market. That's fine, but what about wireless microphones? Where is that database and who is managing it? Who has access to it? How do you account for every wireless microphone in the U.S. when they are not licensed? You can't. It is a brutal proposition.

"The pro audio industry needs to remain vigilant about the hurdles that must be cleared," Brunner concludes. "I think that as these technologies continue to prove difficult, it almost forces the issue that we need spectrum dedicated for use of wireless microphones. Aaron Hartman, an RF engineer at Shure, has been the spearhead of this effort for our company, and he breaks it down pretty easily when he says, 'Good fences make good neighbors.'" III

In addition to being Mix's sound reinforcement editor, Steve La Cerra is the front-of-house engineer for Blue Öyster Cult.

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At Youth Radio, students learn to use Pro Tools, Audition and other creative apps.



News director Nishat Kurwa



Tim McGovern with production director Carl Campbell

Youth Radio

THE BAY AREA'S BROADCASTERS OF TOMORROW LEARN THE ROPES THROUGH CUTTING-EDGE AFTER-SCHOOL MEDIA EDUCATION

By Steve Shurtz

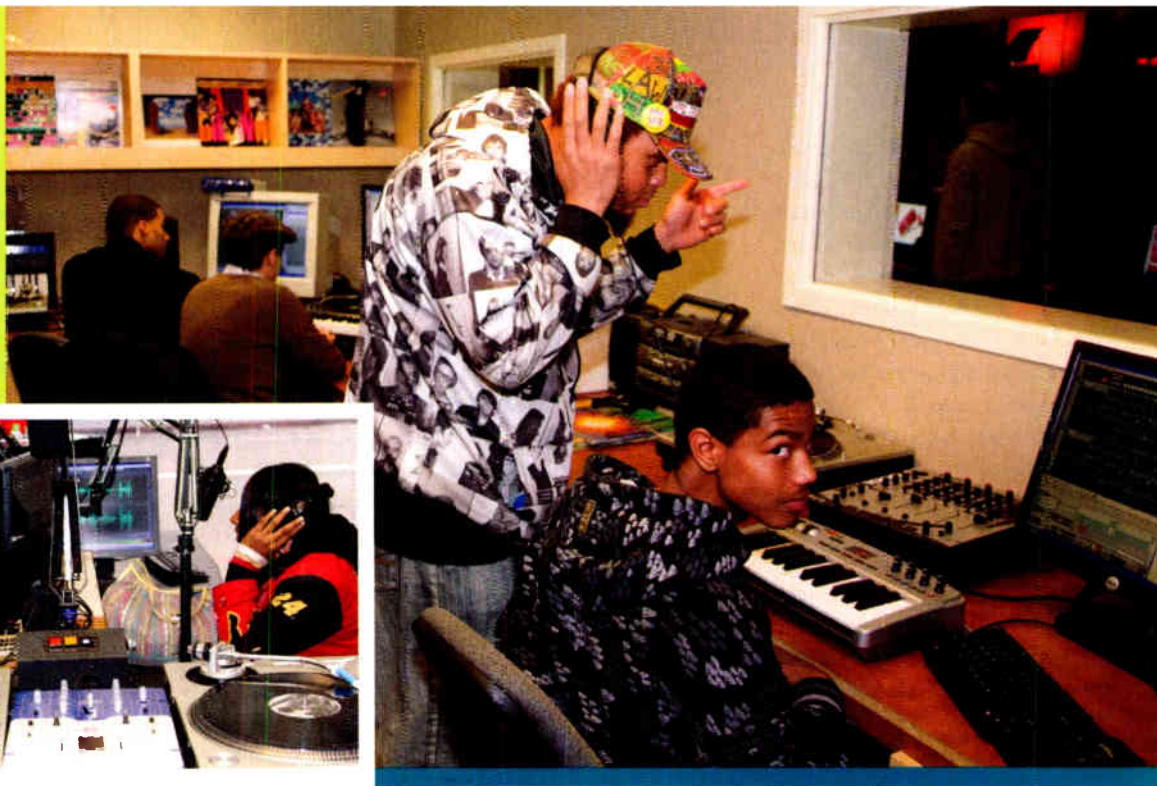
This year, something truly transformative is happening in the lives of more than a thousand teenagers and young adults who live in the San Francisco Bay Area. Coming from mostly low-income households and ailing education systems, these young people are learning first-hand about the new world of converged media, thanks to a non-profit organization that offers free, hands-on classes and career training to high school students. You may have heard their segments on NPR stations, iTunes or a growing list of other outlets. It's all happening at Youth Radio (www.youthradio.org) in Oakland, Calif.

As the organization's Website states, "Youth Radio's mission is to promote young people's intellectual, creative and professional growth through training and access to media, and to produce the highest-quality original media for local and national outlets." Youth Radio was founded in 1992 and maintains its free program offerings through voluntary financial donations and sponsorships from corporations and foundations. Students can apply by downloading an application from Youth Radio's Website.

These young people create programming based on their own point of view, with news and commentary about topics ranging from music to global politics. "These students are tastemakers, as well as cultural documentarians, looking at how a story affects young people and extracting the youth perspectives," says news director Nishat Kurwa. "For an adult audience like NPR, they're often looking for young people to translate what's happening among other teenagers, translate cultures, what they're listening to and why, and the kind of decisions they make about their lives. It's a powerful look into the lives of teenagers—from them, not from an adult parachuting into teenagers' lives and telling their story for them, which is usually the only way young people show up in the mainstream."

Youth Radio's training opportunities include two 10-week programs called Core and Bridge. The Core program offers an overview of journalism and broadcasting, including the fundamentals of radio and television broadcast, music programming, Web design, and music and video production. Students can work with Reason, Au-

Ten-week programs give students an overview of journalism and broadcasting, including radio and TV broadcast, music programming, and audio and video production.



dacity and other creative software. The Bridge program provides intermediate-level training, allowing students to focus on areas of specific interest. Students can learn to use Pro Tools, Audition, video editing and Web design applications, and other creative apps. Youth Radio is working with the Peralta Colleges to bring its curriculum in line with California Community College standards so that students can earn college credit for their work.

Students who successfully complete these programs can apply for Youth Radio's internship program. Interns continue working on personal projects and work as peer teachers, for which they receive modest pay. Many staff members are former students, either directly from the Youth Radio program or alumni who have worked in media-related industries, or gone on to college or university programs and returned to what feels like an extended family.

Youth Radio has always emphasized quality production standards, and the team has earned many accolades for their programming, including a Peabody Award and two Edward R. Murrow Awards from the Radio Television News Directors Association and the United Nations Department of Public Information Gold and Bronze Medals awarded for "work that best exemplifies the ideals and goals of the United Nations."

The Facility

After 17 years, Youth Radio outgrew its original facility and analog equipment and recently acquired a new home: a remodeled three-story

bank building near Oakland's City Center, on the corner of Broadway and 17th Street. The new building will include industry-standard equipment and has an unexpected "wow" factor. "The professional look and feel of the facility creates an atmosphere of quality to inspire students and peer teachers," says Tim McGovern, Youth Radio's technical director. "All 'this for kids?' is a question some visitors ask."

With decades of experience at Skywalker Sound, American Zoetrope, Sony Systems Integration Division and David Carroll Associates, McGovern knows facilities. He left his technical director position at Skywalker two years ago to devote his full attention to building out Youth Radio's new premises.

The new facility includes two on-air control rooms, a production control room with a voice studio, music production rooms, two news production rooms, edit booths and a performance space. There is also a computer lab, DJ workstations and more. Meyer Sound was kind enough to give a huge break to Youth Radio so that the building could have 5.1 sound in the production control room and performance space.

Youth Radio's training programs require a wide range of radio, music, video and IP facilities. "The technical challenge in this facility was making it handle converged media, which is still not perfectly defined," says McGovern. "Building a music studio, a film studio or a radio studio isn't that difficult, but building a studio that can do all those things is a bit of a juggling act. Behind all the thinking and decisions of what equipment would go into the building was

having that kind of flexibility."

The organization purchased and installed a building-wide system of audio engines and routers from Logitek Electronic Systems (www.logitekaudio.com), along with Logitek's Mosaic and Artisan digital console control surfaces, which live in specific rooms. Youth Radio chose this system because of its flexibility in assigning different controllers to audio resources. Logitek's multithousand-dollar production consoles, broadcast consoles or virtual mixers can provide system control using a free Logitek application on any computer in the facility.

Having all your faders in one basket could be cause for concern to the person tasked with keeping it all working, but McGovern says, "There are workarounds for all of this, many that I just discovered—like always having everything on a local engine so if the Logitek network fails, you can at least get at it with tie-lines and patch it around. The IT, although fully integrated as part of the system, is a separate discipline. All of our audio is very reliant on that IT system. That's where our data lives, that's how I get one machine to talk to another. Again, we're back to converged technologies."

All students have a unique sign-off associated with their profile, the applications they are using and project data so they can work at any computer in the facility. For instance, there are 15 computers in the first-floor lab, so if the class spills over to 20 the students can usually use other machines located nearby. In total, there are more than 100 CPUs running on a daily basis.

Youth Radio

Currently, there are three main servers, each with 2TB RAID Level-5 arrays with online spares, redundant power supplies, uninterruptible power supplies and dual 2GB fiber-network interface controllers. Incremental backups are performed daily, with a full backup every weekend to DLT3 with an auto-loader. "No failures yet," notes IT network administrator Josh Broughton. "Everything can be restored up to two weeks prior to an incident."

While Broughton keeps all the proper firewalls and security on the network, he and his team are also involved in the spirit and mission of Youth Radio. "The adults that work here are just setting the stage. Young people come in and hopefully make it their own and bring it to the next place. We listen to them: What's next? What do we need to plug in? What do you want to see happen?"

Broadcast connection to various outlets is mainly done via ISDN through a Telos Zephyr unit, and Webcasts are carried through a T1 line with guaranteed bandwidth. Currently, streams are served out by NetEZ managed data centers, a very generous partner in Los Angeles.



Youth Radio offers industry-standard equipment in a multistory facility.

Future Growth

This strong IT foundation is needed to allow for Youth Radio's future plans: Web 2.0, featuring more user-generated content and social networking, with in-house servers and a greatly expanded video-production capacity. To accommodate the needs of Web 2.0 and in-house serving, Youth Radio is working out a deal with AT&T for a DS3 class of service. The goal is for content management of all video and audio in one on-site repository. Youth Radio's Web traffic is currently at 600,000 unique visitors a month, and the anticipated Web 2.0 expansion will require more bandwidth.

Youth Radio is also spinning off a production company called Youth Media International (YMI), which will include Web production

sponsored by ZeroDivide, a technology foundation that invests in non-profit organizations helping low-income and underserved communities, and more. Youth Media International's first pilot concept series is titled *What's the New What*.

Additionally, the Kellogg Foundation is developing a new long-term initiative that includes Youth Radio. "Youth Radio was selected as one of six community-based organizations across the nation to help develop a national model for getting youth who are out of school and work into jobs," says managing director Jacinda Abcarian. "It's pretty revolutionary because it's not working with the established school systems—it's a whole new model on how to get business- and community-based organizations to work together to create jobs and hire these young people." ■

Steve Shurtz is the former general manager of the Saul Zaentz Film Center (Berkeley, Calif.) and former general manager of EMI's Studios 301 in Sydney, Australia.

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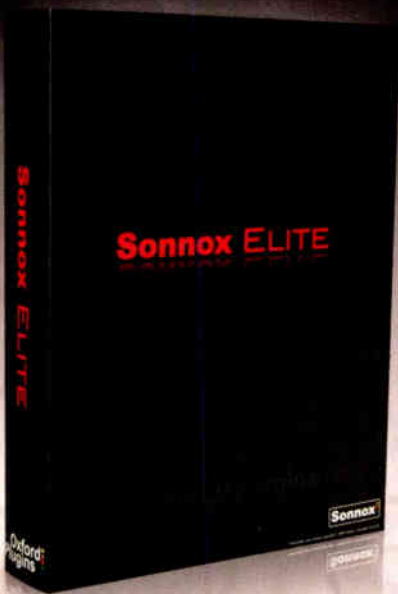
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PHOTOS JOSH HENRY



Lucinda Williams with engineer Eric Liljestrand (left) and co-producer Tom Overby at The Village

By Bud Scoppa

Lucinda Williams Gets Happy

THE MAKING OF "LITTLE HONEY"

The seeds of Lucinda Williams' new album, *Little Honey*, were sown during the sessions for her previous album, *West* (2006). Partly inspired by her then-new relationship with music-biz veteran Tom Overby—"Everything is before Tom and after Tom," she said at the time—Williams went on a writing binge, demo'ing up each batch of

freshly penned songs at Hollywood's Radio Recorders, singing and playing acoustic live off the floor with her touring band. Then, at Overby's suggestion, Hal Willner was brought in to produce the project. After listening to the demos, Willner decided to keep all of her original vocals. "We were gonna start from scratch again," he

says, "and I went, 'Damn, why?'"

The tracks were stripped down to their essence and reimagined from the inside out. Engineer/mixer Eric Liljestrand painstakingly performed the countless minute edits needed to achieve aural coherence and flow, after which a crew of A-list players, including drummer Jim Keltner and guitarist Bill

Frisell, overdubbed their parts around Williams' vocals. Everything was rolling along until she pulled one of the infamous studio freakouts that have marked her recording career.

"When the record was 80-percent done, there was a big blowup between Lucinda and Hal," Overby reveals. "Even now, she loves him, but it was just one of those nights where tensions had been building. In some ways, they're a lot alike—they're both pretty obsessive—but we decided at that point that we'd get someone else to finish it."

After throwing around the names of producers, Williams and Overby realized they needed to complete the record as originally conceived, so they turned to Liljestrang. During those final two weeks, it became obvious to all three that they worked extremely well together, so what had started out as a compromise became a direction. "I was there every night for *West*," says Overby, "and I saw the pitfalls—the places *not* to go. That helped form what to do on the next record."

Not only that, but Williams already had the core group of songs for what would become *Little Honey*—six from the Radio Recorders sessions, including "Real Love," which turned out to be the new album's opening track and no-brainer first single (Willner had rejected it as too pop-y), plus the newly written "Tears of



Clockwise from left: David Sutton, bass; Butch Norton, drums; and Doug Pettibone and Chet Lyster, guitars.

"I chose Tom to produce this album, along with Eric," Williams explains during the final stages of the new album's creation. "After the recording of *West*, it became apparent to the three of us that when we returned to the studio to record this new album, we wouldn't need to hire an outside producer. Between Eric, Tom and myself, we have it down. By the time we'd completed the tracks for *West*, there was no doubt in my mind that I would never work with anyone other than Eric Liljestrang—he's just the right guy for me. There are other great engineers out there, but finding someone who understands your needs; knows how to get the

Did I mention that Williams is unusually happy these days?

Whereas *West* had been about assembly, *Little Honey* would focus on performances, so it was natural to use Williams' current road band—guitarists Doug Pettibone and Chet Lyster, bassist David Sutton and drummer Butch Norton. "We were out on the road for nine months last year playing most of these songs," she points out.

For the sessions, they returned to the Village Recorder in West L.A., setting up shop in Studio D where most of the sessions for *West* had taken place. Along with a sizable tracking room, ideal for live-off-the-floor recording, D boasts a Neve 88R console. Liljestrang never goes into a studio without his trusty Genelec 1032 near-field monitors, but that was unnecessary this time because there was already a pair sitting above the board. The mains in D are big, honking Augspurgers.

Coincidentally, Willner was nearby in Studio B working on the follow-up to Marianne Faithfull's *Strange Weather* and on his sea chanteys project, and reportedly sent good vibes in the direction of the inhabitants of D.

The other *West* alum was second engineer Vanessa Parr, who "has become almost like a younger sister to me," Williams notes. "Every so often I will arrive at the studio and surprise her with an armful of rock 'n' roll T-shirts that I've outgrown. All in all, we have a very special team."

This is a tight posse indeed, consistent with the community vibe at this West L.A. landmark, which is celebrating its 40th anniversary and enjoying a renaissance under the leadership of Jeff Greenberg. Williams has some love to throw in his direction, as well: "Jeff is a real, true music guy," she enthuses. "He speaks from his heart, and he's in this business for all the right reasons. He's become a part of my extended family and has treated me with the utmost hospitality and respect. I'll never forget the time he brought in



Drummer Butch Norton is also a member of Williams' touring band.

Joy" and "Little Rock Star." "I was already thinking the next record needed to be more upbeat because *West* was so dark," says Overby, "and we had a nice group of songs that fit together really well." When Overby sequenced *West*, he decided to close the album with the title song. "It points toward the next record," he says, "with the line, 'Who knows what the future holds?'"

right sound for your own voice; knows which particular vocal mic to use; has an extensive knowledge of the history of blues, soul, R&B and country; is fun to work with; has a great sense of humor; never complains about working long hours—what else can I say? Wherever Eric is working, that's where I'll be—kinda like biscuits and gravy!"



Little Honey features guitar work by Doug Pettibone (pictured) and Chet Lyster.

sprinkles cupcakes and presented me with a big bouquet of flowers on Valentine's Day last year."

"The album was tracked predominantly live off the floor with just Lucinda and her road band," Liljestrand explains. "Two guitars, bass and drums, with Lu singing and sometimes playing guitar. I love it when she plays while she sings; it's like one thing—a package—and it comes out great.

"I'd start out in the afternoon with the band, getting sounds, trying different guitars, amps, snare drums, cymbals. We had so much stuff out there—I counted 58 guitars one day, and when Doug walked in with a bunch more I stopped counting. And then Chet's guitars and mine, my amps, Doug's amps, all the drum stuff. We had two kits set up: the main kit and a cocktail kit. So we'd just bang around for a couple hours, not work on it, really.

"Early in the evening, Lu and Tom would come in and fart around for half-an-hour, and then bang-bang-bang-bang-bang. Most of them are no more than six takes, and in most cases, pretty reliably, take four or take five was the keeper, always going for her vocal first. A lot of them are complete takes; some had an insert from another take, no more than an edit or two. And most of the vocals are not comped at all.

"Lu has an incredible voice," he continues. "It looked like a press conference in there—I'd start out with four mics on her and whittle it down to one. I have a Brauner Valvet, and that has been her main vocal mic since *West*. But I also put up two [Neumann] 47s and an [AKG] C-12. The Brauner won out on a few songs, but on most of them the 47 worked best this

time—a 47 into a [Neve] 1081 with an LA-2A. I had the Brauner going through a [Focusrite] Red 7 [preamp], which was really like a finished vocal combo—gets you all the way there."

Those mics captured some of Williams' most compelling performances ever, including the epic, nearly nine-minute ballad "Rarity." "She got that one in one take," Overby recalls. "At the end of it, she was in the booth and she started to cry. She said—and this is from a big perfectionist—I can't do any better than that." Another jaw-dropper is the album closer "Plan to Marry," a powerful affirmation of the redemptive power of a lasting relationship during a time "When leaders can't be trusted/Our heroes have let us down/And innocence lies rusted/And frozen beneath the ground." She laid down the stark vocal-and-acoustic performance for the band to work from—"but when we listened back to it," says Overby, "everyone said, 'Let's not touch this.'"

The album also boasts inspired performances from several handpicked guest vocalists: Elvis Costello gets right in character as a hopeless loser on the delightfully acerbic "Jailhouse Tears"; and the great Charlie Louvin enhances the down-home authenticity of "Well Well Well," as does Jim Lauderdale, who also lends his voice to the soulful chorale of "Jailhouse Tears"; while Matthew Sweet and Susannah Hoffs appear on three of the album's linchpin songs: "Real Love," "Little Rock Star" and "Rarity."

"We were listening back to 'Real Love,' and I thought of Matthew," says Liljestrand. "I've always loved his thing with steely harmonies over rough, rocking tracks. Both Tom and Lu were kind of noncommittal at first. The next

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day, though, Tom came in very excited by the idea—he'd gone home and listened to [Sweet's classic album] *Girlfriend*, I think. A day or two later, they had listened to the 'Sid & Sue' record [Sweet and Hoffs' *Under the Covers Vol. 1*] on the way in, and Lucinda was very excited about Matthew and asked if I thought we should call Sue, as well. I said, 'Yeah, why not?' Then Jeff contacted you."

At Greenberg's request, I called Sweet. We've been friends since 1991, when I signed him to the Zoo label and we released *Girlfriend*. For that one phone call I scored a "thank you" from Liljestrang in the credits.

"The first session went great," Liljestrang says. "Both Matthew and Susanna are so nice, and Lu was blown away by their harmonies. We ended up spending the whole evening on 'Little Rock Star' instead of 'Real Love.'" Soon thereafter, Sweet and Hoffs laid down harmonies on "Real Love," and the synergy between their layered vocals (which Sweet had arranged in his home studio) and Williams' leads was by then so undeniable that they then went straight to "Rarity."

"Lucinda was floored by how brilliant Matthew was," says Overby. "At one point, she said, 'Omigod, it's like working with Brian Wilson.'"

In March, when it was time to mix, Liljestrang went down the hall for the first project in Studio B following a radical renovation of the control room, which now houses another 88R snagged by Greenberg from Sony Studios in New York. Remarkably, the makeover had been completed in just three weeks; Greenberg says he can't stand to see one of his studios sitting idle.

This was unquestionably the most positive and gratifying recording experience by far for Williams, whose mere presence once struck fear in the hearts of everyone who was in the studio with her. "She got on such a roll and there were such good vibes that there are all these wonderful moments—I think that's what marks this record," says Overby. "To me, this is her *White Album* or her *Exile on Main Street*—the best of all the styles she does, plus some new ones."

Looking back on it, Williams reflects, "It's great when you can go in to make a record and you already know who your backing band will be, who your engineer will be, who will be producing, what studio you will be working in and, I might add, who your mastering engineer will be—Gavin Lurssen. Of course, these folks are all pros, but I can't stress enough how crucial it is to work with people I like—people I've come to love. Besides musical prowess, love and respect are the ingredients that turn good art into a great record." ■

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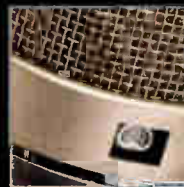
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David Gilmour

LIVE SETS SHOWCASE PINK FLOYD, "ISLAND" SONGS

By Blair Jackson

When former Pink Floyd guitarist/co-leader David Gilmour put out his lovely, pastoral *On an Island* in the spring of 2006, it was just his third solo album—and his first in 22 years. To promote the disc, he put together an exceptional band that included Pink Floyd keyboardist/singer Rick Wright, Roxy Music guitarist Phil Manzanera (who co-produced *On an Island* with Gilmour and Chris Thomas), multi-instrumentalists Jon Carin and Guy Pratt (both veterans of post-Roger Waters Pink Floyd albums and tours; Carin has also played with Waters) and veteran Floyd saxophonist Dick Parry. They played a series of small-venue shows in North America and, later, in Europe to rapturous reviews. Each concert featured a first half dominated by songs from *On an Island* and the second half by breathtaking versions of Pink Floyd classics, including “Shine on You Crazy Diamond,” “Wish You Were Here,” the Gilmour tour de force “Comfortably Numb,” the 25-minute space-rock adventure called “Echoes,” the rarely performed folk number “Fat Old Sun” and a great tune from the final Floyd opus, *The Division Bell*, “High Hopes.” In the fall of 2007, the tour was nicely documented on a DVD package called *Remember That Night: Live at the Royal Albert Hall*.

But wait, there’s more! Just released in mid-September 2008 are five different packages centered around the magnificent final show of the tour: a concert before 60,000 people in the

Gdansk, Poland, shipyards, marking the 26th anniversary of the Solidarity movement that freed the country from Soviet domination. For that show, a 40-piece orchestra conducted by native Zbigniew Preisner, who wrote the string arrangements for *On an Island*, complemented the six-piece band, and the set list included, appropriately enough, *The Division Bell*’s “A Great Day for Freedom.” For *Live in Gdansk*, there would be CDs and vinyl LPs, as well as DVDs documenting other concerts on the tour.

“When we finished the last gig of that tour after 35 concerts,” the always cheery Manzanera says by phone from England, “we thought that was it—the end of the cycle that started with recording *On an Island*: me working on demos with David at his place, then recording the album, which we did on David’s boat, The Astoria [a luxurious boat-turned-recording studio, originally built in 1910, moored on the Thames near Hampton Court], and at Abbey Road; then going out and touring. We did the *Albert Hall* package, which was very nice, then I was supposed to start on a new Roxy Music album, but while I was away, Bryan Ferry decided to do a Dylan covers album and go on tour, and then David asked me if I wanted to help him sort out the live material from the tour for a CD set. We recorded every gig on Pro Tools, and the original idea for that was we would choose the best version of each song.

“So I spent almost 10 months on the boat

listening to every version of every track of 35 concerts. The team who work there are so good—it’s Andy Jackson, the engineer, Phil Taylor, who’s the studio manager and David’s guitar roadie; Damon Iddins; and Devin Workman. I would initially go through the tracks with Devin and evaluate what we had—giving each track marks out of 10—so I ended up with this enormous grid of what I thought were the best tracks.

“Then David and I sat down together and listened to my choices, as well as two substitutes for each one. Then, once he’d decided, I went back in and looked at those tracks in greater detail. This went on for ages, but then it started appearing that the majority of the tracks we were choosing were from Gdansk, so we got to a point where we thought it might be more interesting just to do Gdansk. *Aaaaugh!*” he says with a laugh. “It *did* have a lot of unique things about it—the setting, the orchestra.

“All that other listening wasn’t for nothing, though: There is also a format where you get my selections of the best versions from the other cities—a track from San Francisco, one from Munich and so on,” including a few different songs not played in Gdansk.

For the orchestra, “We miked every single instrument on its own channel, plus overhead section mics. Devin and I got into very minute detail listening to every single track of what everybody played. It makes me tired even thinking about it! It took months and months!”

Jackson was the main mixer, working on the Astoria’s Neve with scads of outboard gear, though it should be noted that nearly all the instrumental effects—from the delays and reverb on Gilmour’s signature guitar lines to the keyboard patches—were performed live and not augmented in the studio.

“It was very exciting for me,” says Manzanera, who has been friends with Gilmour since the formation of Pink Floyd. “To see the songs from *On an Island* come alive the way they did on that tour, particularly with the orchestra, and then also play on those great Pink Floyd songs, it was magical; so much fun.”

Get more info at www.davidgilmour.com. III



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S.M.V. are (L-R) Victor Wooten, Stanley Clarke and Marcus Miller.

PHOTO: STEVEN PARKE

Clarke, Miller & Wooten

FUSION BASS TITANS CREATE "THUNDER"

By Chris Walker

Back in the day, one name symbolized the highest level of funk/fusion electric bass playing—Stanley Clarke. As co-leader of the pioneering group Return to Forever with keyboardist Chick Corea and as a solo performer, Clarke elevated the artistry of his instrument while also dazzling audiences with solos that rivaled the most scintillating rock guitarists. The Philadelphia native—a classically trained double-bassist whose jazz credentials include working for sax legends Stan Getz and Joe Henderson, pianist Horace Silver and others—was clearly in a class by himself in the electric arena.

In recent years, two emerging players—Marcus Miller and Victor Wooten—have been strongly influenced by Clarke and have challenged his throne. Miller started out with saxophonist David Sanborn, then went on to become a wunderkind player/producer/arranger for iconic trumpeter Miles Davis, as well as for soulful balladeer Luther Vandross and funk/pop dynamo Chaka Khan. Wooten is a longstanding member of virtuoso banjoist Béla Fleck's eclectic Flecktones and a solo artist possessing astounding style and technique.

Eventually, Clarke, Miller and Wooten became acquainted with each other, and the concept of working together arose. During the 2006 Bass Player Live! concert in New York

City (sponsored by *Bass Player* magazine), which included the presentation of a Lifetime Achievement Award to Clarke, they converged to play the honoree's most popular tune, "School Daze." The audience was blown away, and so S.M.V. (Stanley, Marcus and Victor) was born. Wooten conceived their new album, *Thunder*, to be similar to the groundbreaking 1996 acoustic fusion guitar recording, *John McLaughlin, Al DiMeola, and Paco DeLucia*.

"The main thing for me was to make sure it was musical," Wooten explains during a solo tour. Many of his parts were recorded at his home studio in Nashville through a Soundcraft board to Pro Tools. "We knew that we had to please the bass players who wanted to hear us cut loose. But we also wanted to make sure the project was good music that someone could listen to over and over again. Also, making sure there was a good dosage of Stanley, Marcus and myself."

Preliminary recording on this funky, playful affair began several weeks before Christmas 2007 at Threshold Sound + Vision Studios in Santa Monica, Calif. Miller was the main producer and selected the studio (where he works regularly). During the initial meeting and jams, he assigned everyone the task of writing two songs. Then, before the January and February

2008 recording sessions, each sent others his compositions and comments.

"When we finally got together again, we had a good amount of tunes ready to go," Miller comments from New York. "Half the album was recorded in the studio, and sometimes we did it as a trio playing along with the composer's track. Other times, we just cut the tracks live. The demos are hilarious because you get to hear us doing imitations of each other." Unquestionably, the bassists had plenty of fun working together, often joking around, while also being very respectful, especially to Clarke.

Gerry "The Gov" Brown, who was Clarke's engineer for his 2007 *Toys of Men* CD, and is well-known for work on high-profile urban and pop recordings, handled the tracking dates at Threshold, which is equipped with a Neve

8078 console, API preamps, Augspurger mains, Pro Tools HD3, and a strong selection of new and vintage mics and outboard gear. Additionally, he recorded sessions for *Thunder* at Westlake in Los Angeles, the House of Blues Studio in Encino (mostly for its mic selection) and in Clarke's Topanga Canyon dining room for acoustic tracks.

"In terms of the sound, I had three bass players to worry about and I tried to keep it as organic as possible," Brown says. "I tried to put each one of them in a different space. Stanley's sound has a high and a low [range], Victor is more in the lower to middle range, and Marcus has a full range in the middle." Miller adds, "Everyone pretty much had their sound together, and you don't want them to sound any different from the way they have previously. Victor usually goes direct, Stanley has an Alembic preamp that he uses and sometimes an amp, and I usually go direct."

With concurrent tours, other projects and a Return to Forever reunion tour looming, the producer's organizational talents kept everyone focused. Miller and Brown were in constant contact throughout, with the engineer cleaning things up and doing rough mixes while Miller determined what else was needed to complete tracks. Brown ended up doing final mixes on half the selections at Threshold and provided guidelines for Goh Hotoda, David Isaac and David Rideau, the outing's other mixers. The project was just about completed when the RTF tour went into full gear. Even so, Miller flew up to Seattle to record additional tracks from Clarke and Chick Corea for finishing touches on Wooten's "Mongoose Walk." True collaboration in action. ■



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CLASSIC TRACKS



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Del Shannon

"RUNAWAY"

By Brian Young

This month's "Classic Track" is dedicated with great affection from all of us at Mix to our late, great colleague, writer Stephen St. Croix, who loved the song "Runaway" so much—more proof of how cool he was!—Eds.

It was in the fall of 1958 that Del Shannon (real name: Charles Westover) began his career in his hometown of Battle Creek, Mich. (aka "The Cereal City" because both the Kellogg's and Post cereal companies are headquartered there). Through a friend he was introduced to the leader of a country band called the Moonlight Ramblers, who had a regular gig at a bar/lounge called the Hi-Lo Club, and shortly thereafter snagged a spot in the band. Shannon (his stage name at the time was Charlie Johnson) didn't quit his day job at a local carpet store. Playing clubs was barely a living, so almost everyone had two jobs. Shortly after Shannon joined the group, however, the

leader was fired by the club owner for repeated drunkenness and Shannon was enlisted to take over. He kept the bass player from the group, but otherwise started a new band called Charlie Johnson & The Big Little Show Band, which had a changing lineup through the end of 1958 and the beginning of '59.

It was drummer Dick Parker who suggested to Shannon that he hire an Ann Arbor-based keyboard player named Max Crook, who had dazzled the crowd at a Battle of the Bands at the Kalamazoo Armory with his deft and imaginative keyboard work. When he showed up to audition for Shannon's group, he brought along a miniature, custom-built keyboard he called a Musitron, which would later produce one of the most famous instrumental breaks in rock history. Shannon hired Crook on the spot.

"The Musitron is a three-octave, monophonic [single-note-playing] keyboard with a slide on it

that allows me to play at a range of two cycles per second up to beyond human hearing," Crook commented at a Del Shannon tribute in the late '90s. "Also, I can bend the notes, which was something uncommon at the time for mini-keyboards. I bent the notes in the middle of [Shannon's] 'Don't Gild the Lily, Lily,' the B-side of [the hit] 'Hats Off to Larry.' The Musitron is also totally tunable. I can tune it to anything. I built the Musitron out of a variety of things: A clavoline was part of it, but I also threw in some resistors—it was too early for transistors—tubes from television sets, parts from appliances and other such household items." Crook's Musitron preceded Joe Meek's "Telstar" ingenuity by a year, the Mellotron by two years and the Moog synthesizer by more than five years.

Shannon and Crook soon became lasting friends and started a partnership, writing and recording demos for the next year to audition for Crook's music friend, Ollie McLaughlin, a black DJ who hailed from Ann Arbor and had previously published two (unsuccessful) sides Crook had made for Dot. Crook invited McLaughlin, who had connections in Detroit, to sit in at the Hi-Lo after-hours to hear their new songs. McLaughlin recorded a few numbers on his tape recorder and played them for Irving Micahnik and Harry Balk of Artists Inc. in Detroit. Micahnik and Balk were executives affiliated with Big Top Records of New York, having already achieved success internationally with Johnny & The Hurricanes. The two swiftly signed Shannon and Crook to a recording contract.

Shannon was immediately flown (without Crook) to New York in August of 1960 to record a couple of songs, but Shannon was nervous and the session did not go well. Shannon and Crook soon found themselves back at the ol' Hi-Lo playing four nights a week, encouraged to "write something a little more uptempo." Two months later, on a Friday night in October of 1960, Crook sat down at his bench and began running riffs on the piano. Shannon jumped up: "Max what was that?" Crook simply replied, "An 'A-minor' and a 'G.'" Shannon was tired of hearing what he called "Blue Moon" chords (C, A minor, F and G progressions) and began playing those two chords over and over again on his guitar, yelling "Follow me! Everybody follow me!" and humming a few words here and there. Soon, drummer Parker had jumped in. The band worked on the song for



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the next 15 to 20 minutes as the crowd looked on curiously. Finally, the owner of the club came over to the stage and told them to knock it off and play something else!

The next morning, Shannon took his guitar with him to work at The Carpet Outlet and, sitting on a roll of carpets, began writing the words to his new song: "As I walk along, I wonder..." A friend of Shannon's named Wes Kilbourne stopped by that Saturday morning, and recalls, "Del's original title of the song was 'Little Runaway.' He was working out lyrics like 'I'm a-walkin' in the storm' and 'I'm a-walkin' beneath the clouds'; things like that. In fact, he had an entire second verse that he wrote but totally scrapped it because it didn't fit in as well as the first verse."

Shannon finished the song by lunch and telephoned Crook. "Max, bring your tape recorder with you to the club tonight. I've finished our song. It's called 'Little Runaway.'" Shannon began writing the B-side that afternoon. It was titled "Jody," after a girl who frequented the club.

Shannon and his bandmates performed "Runaway" that night for the first time before a live crowd. Before they began playing the song, Shannon said, "Max, when I point to you, play



something," and Crook obliged by coming up with the famous Musitron solo. The song was an instant success with the crowds at the Hi-Lo. Crook remembers that they would sometimes have to play it four or five times a night.

After Crook's first recording of the song was accidentally taped over, the group cut another version after-hours at the Hi-Lo Club and the tape was sped off to McLaughlin, who again approached Micahnik and Balk. Though initially believing the song sounded like three different songs coming together, Micahnik and Balk agreed to throw "Runaway" in with the next batch of songs to be recorded. Balk recalls, "Okay, we decided to give Del another shot. But I loved that organ of Max's. To be honest, I didn't care much

for Del's voice, but I really wanted to do something with Max Crook and that organ!"

A session was set up, and on January 22, 1961, Shannon and Crook and their wives, Shirley and Joann, left Battle Creek in Crook's beat-up Plymouth to make the 700-mile trip to New York. They arrived in New York City on Janu-

ary 23 and stayed at the Forest Hotel, where many musicians who were recording would book a room as the studios were nearby. The next day, they parked their car in front of Bell Sound Studios, located at 237 West 54th St. Crook was a sight to see as he began unloading electronic gadgets and devices from the trunk.

"I've got suitcases, I've got a secret black box, I've got the Musitron, gadgets and gizmos," Crook remembers. "Gizmos meaning contact microphones, mechanical volume-control vibrators, pedals and other effects. We get into the studio, and they had open mics already strategically placed. That's not what I wanted, and I immediately crawled under the piano." Bill MacMeekin, who was the studio engineer, asked

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Crook what he thought he was doing. "I'm placing a mic down here," replied Crook. "This is not the sound I'm wanting." MacMeekin turned to Harry Balk, who produced the session: "Harry, what's this guy doing?" Balk responded firmly, "Bill, wherever he's got a wire coming out, plug it in. It's not even open for discussion."

Bill Ramal, the arranger on the session, recalls, "We brought in Bucky Pizzarelli [father of current guitar sensation John Pizzarelli] and Al Cassamenti on guitars, Milt Hinton for bass, Joe Marshall on drums and I played sax. Max played piano and Musitron. Del was put in the sound booth and did his vocals. I still remember Irving partially paying me for the session with a fur coat."

Crook took a small guitar contact microphone and wedged it onto the soundboard of the studio's Steinway grand piano with a piece of newspaper. "I then started setting up all of these little boxes," Crook says. "Needless to say, the entire studio came to a halt. Everyone came out of the control booth and gathered around me to scope out what I was doing. They were maybe hoping to pick up a trick. But in those days, I had all of my equipment camouflaged because I didn't want anyone to steal my ideas. I hooked up a box that had a hole on the top. What that did was control slap echo. I arranged it myself with a garden spring, and when I played a note on the keyboard it would fade out: *wap, wap, wap, wap*. I could control the speed and amount of feedback. It wasn't reverb; it was true echo."

In early 1961, Bell Sound Studios was one of the hottest recording studios in the country, and one of the first studios with a professional 3-track setup. Shannon and Crook were given three hours to record four songs: "Runaway," "Jody," "The Snake" and "The Wanderer." Shannon and Crook's wives added handclaps to "The Snake."

Upon his return to Detroit, however, producer Harry Balk listened to the tapes of "Runaway" and determined that Shannon was singing too flat. Balk liked the song's potential and suggested to Micahnik that Shannon be flown back to New York to recut the vocals. Again, Shannon was nervous and singing flat. Having spent a lot of money on studio time and expenses, Balk and Micahnik were understandably concerned. The solution: A custom-built machine at Bell Sound that enables tapes to be sped up and slowed down. Balk sped up Shannon's vocal nearly one-and-a-half times its original speed to bring him into key. "We finally got Del on key, and it sounded great, but it didn't sound like Del," explains Balk. "We mixed it anyhow, and it came out wonderful."

"When I brought Ollie and Del into my office

to hear it, Del had a bit of a fit," Balk continues. "He said, 'Harry, that doesn't even sound like me!' I just remember saying, 'Yeah, but Del, nobody knows what the hell you sound like!' Two weeks after its release, forget it! It's selling 50,000. It's selling 60,000. Eventually, it topped off selling 80,000 records a day. After 'Runaway' became a million-seller, Del came in and thanked me for what I had done." And Shannon's haunting falsetto on the chorus became as iconic as Crook's Musitron solo.

"Runaway" hit Number One in the spring of 1961 and stayed on top of the charts for four

weeks. Later that year, Shannon hit the Top 5 with "Hat's Off to Larry," and he had several other lesser hits through mid-'60s, including "Little Town Flirt" and "Keep Searchin' (We'll Follow the Sun)." After a quiet spell in the 1970s, he scored another hit with the Tom Petty-produced and Heartbreakers-backed "Sea of Love" in 1981. Tragically, Shannon took his own life in 1990, but with one incredible, indelible song, he earned a spot among rock's immortals.

This article was abridged from a longer discussion of "Runaway" that appears on Brian Young's Website, delshannon.com. Check it out! III

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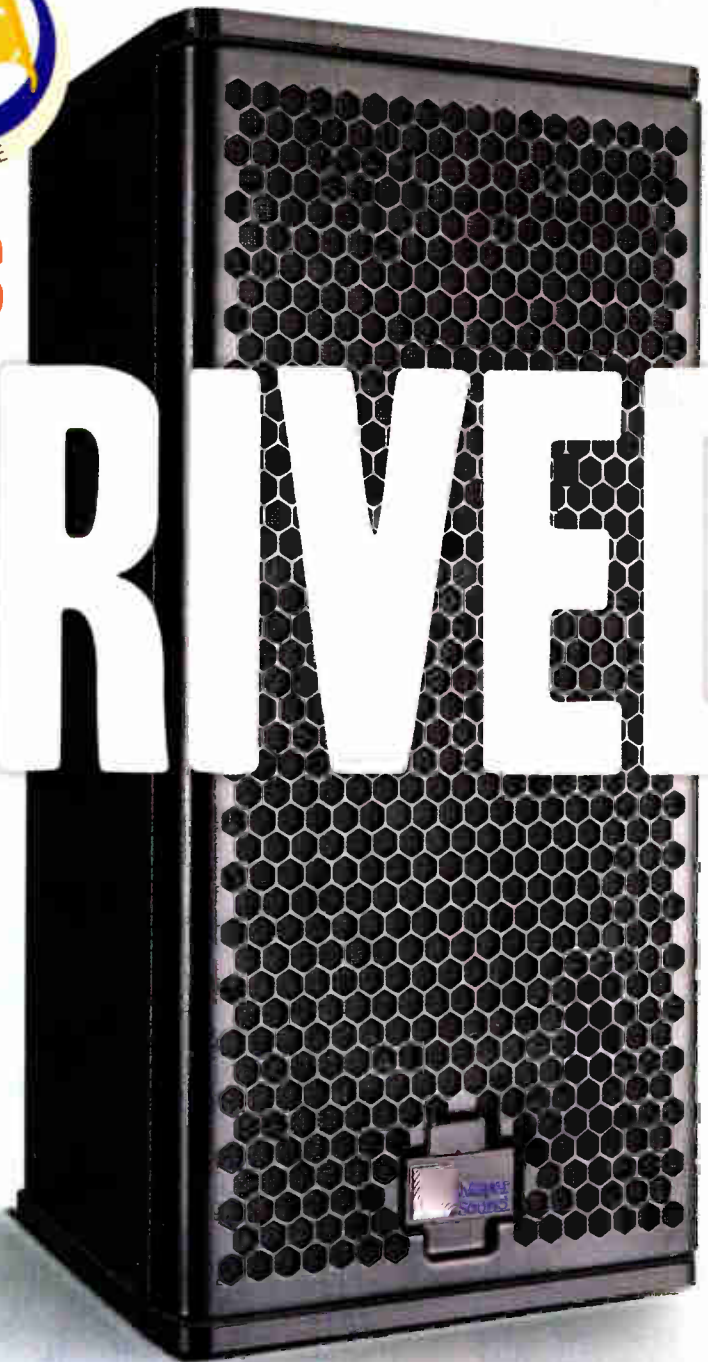


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PHOTOS: DONNY EMERICK



By Donny Emerick

Radiohead

TWIN SYSTEMS KEEP GREEN TOUR RUNNING SMOOTHLY

The members of Radiohead take environmental responsibility seriously. Following the release of their downloadable *In Rainbows* album, the band (Thom Yorke, vocals/guitar/piano/electronics; Jonny Greenwood, guitar; Ed O'Brien, guitar; Colin Greenwood, bass guitar/synths; and Phil Selway,

drums) are reducing their carbon footprint while on the road, teaming up with a company called Best Foot Forward to track and decrease their emissions. One step they've taken is to reduce the amount of freightage for a world tour by creating dual systems for their U.S. leg (Firehouse Produc-

tions supplied control and gear) and their European dates (system spec'd by Wigwam Acoustics Ltd.).

"We've basically got two systems, which is common with almost everything else that's happening on this tour," explains front-of-house engineer Jim Warren, who began working with

Radiohead before they were signed to Capitol in 1992. "They've got two different sets of backline: one on each side of the Atlantic. As far as my FOH setup, cosmetically it's different since different companies do their patching and whatever, but fundamentally it's the same system."

Warren is mixing on a Digidesign VENUE board, using 70-odd inputs. "The way I run my desk is with a limiter across the mix or stereo bus that feeds the P.A. sends and the record feeds. Generally, that fader just sits at zero and the limiter gets me a decent level. But there are times in certain songs where I'll just pull the master back 4 to 6 dB to do all the things I want to do without



Monitor engineer Graham Lees



FOH engineer Jim Warren (left) and system engineer Sherif El Barbari

something going haywire. And I'd rather just mix it quieter and rely on the fact that the audience will realize they can't hear it as well as they did and will actually become quieter themselves."

Warren is usually only concerned with 24 to 30 channels, depending on the song, but relies on presets to simplify his mixing process. "You still mix, but it means that a lot of the drudge and the frantic activity is taken out," he says. Warren also stresses reliability as a selling point for the board: "It's the freedom to start in production rehearsals with the console and a set of plug-ins that you know will cover most everything. You are no longer phoning up the P.A. company every couple of days saying you need another

compressor or reverb unit.

Warren is also managing a Pro Tools HD system for multitracking the shows and will use it if the band's not around for soundcheck to help set up the system for that night's show.

While reliability in a console is key to a successful tour, Warren took a

chance and brought out a relatively unknown P.A.; the second leg of the U.S. tour saw the international debut of the brand-new L-Acoustics K1/KUDO line array system. He was willing to try out the rig based on a recommendation from his previous and current systems engineers who have relationships with the European manufacturer. "[I brought it on tour] after getting a few assurances from them on how well-tested it was. We've got three gigs on it so far, and the results have been good," he reports.

Administered by system engineer Sherif El Barbari, the U.S package includes two 16 K1s, 2x eight K1-subs (flown), 2x three dV-DOSC underhangs and 2x nine KUDOs for side P.A.

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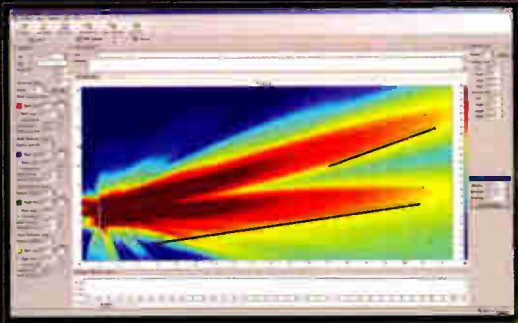
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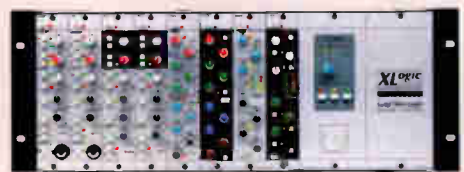
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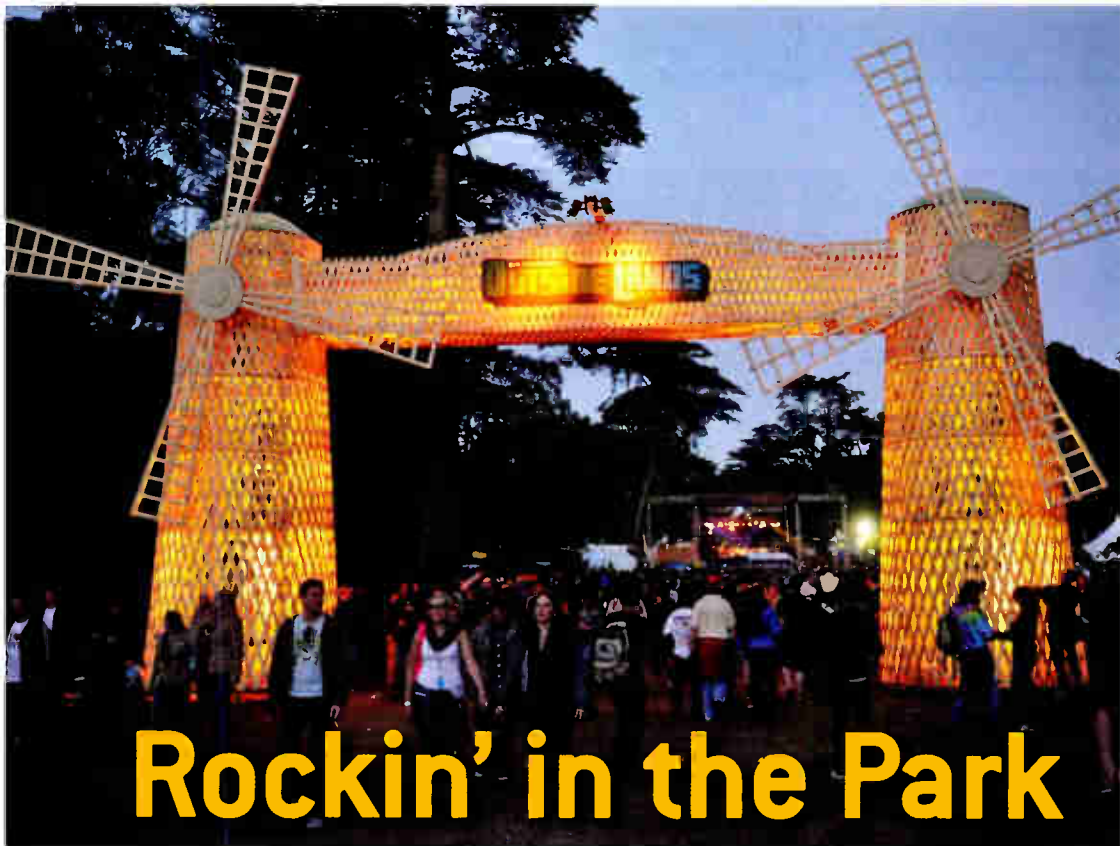
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Rockin' in the Park



Beck



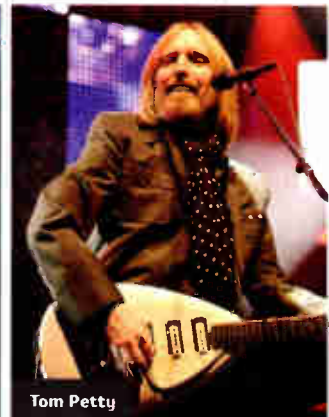
Steve Winwood

SAN FRANCISCO'S OUTSIDE LANDS

By Tom Kenny



Regina Spektor



Tom Petty

PHOTOS: STEVE JENNINGS

You can add another destination to the Coachella-Bonnaroo-Lollapalooza-Rothbury-Austin City Limits summer festival season: San Francisco's Outside Lands Music & Arts Festival, a star-studded three-day event featuring more than 60 bands, six stages and an estimated 150,000 fans from August 22-24. When Radiohead hit the Land's End stage Friday, it was the first nighttime performance in the fabled Polo Fields of Golden Gate Park.

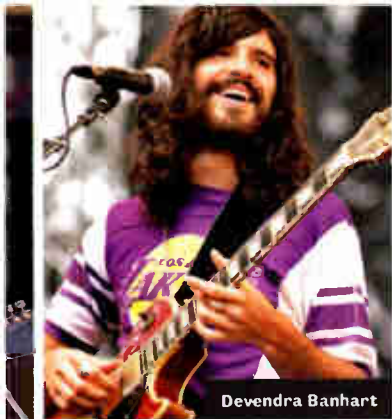
Produced by Superfly Entertainment and Another Planet, the event turned into a celebration of San Francisco's unique culture, from the naming of the stages attached to local landmarks, to the Eco-Lands pavilion to the local restaurants and Winaven, to the CrowdFire tent featuring live digital content uploads distributed across the festival's seemingly unlimited screen displays. Video and audio capture was by Third Wave Productions out of Chicago. Audio for the two main stages was provided by UltraSound/ProMedia, with assistance from the Bay Area's Meyer Sound. The first order of business was coverage for the estimated 60,000 people estimated for the main stage.

"We had 17 [Meyer] Milo 90s and one Milo 120 per side," explains Derek Featherstone, general manager of UltraSound/ProMedia and front-of-house mixer for Primus, who played the Twin Peaks stage on

Saturday. "The side-shot P.A. was eight Milo 90s per side, and we had 11 tall Meyer M3D subs per side with an additional eight 650-R2 subs in the center. For left/right stage and center-fill, we used six MSL-2s. The four delay towers used a total of 12 MSL-10s. The system comprised 17 zones, so we had to be diligent about alignment. We used Meyer SIMM and SIA Smaart systems. Thankfully, we had done this park a few times over the years—because the timing was so tight, we didn't get a soundcheck!"

One of the big advantages to the Meyer system for a festival of this magnitude is the throw. Featherstone usually likes to bring in the first delay towers about 50 feet before a drop-off point, with a goal of 6 dB down at 275 feet. "We can get about 15 percent more distance with this system," he says, "so with our setup, we didn't have to put in the first tower until 300 feet, with the second set at 575. The promoters like that for sight lines, and the audience is getting a full, even range all the way to the back."

While Radiohead, Tom Petty & The Heartbreakers (with a Steve Winwood appearance) and Jack Johnson highlighted the main stage, about a quarter-mile away on the Twin Peaks stage, the likes of Primus, Wilco and the Black Keys kicked it on a clean, punchy system. "Twin Peaks was a pleasure to mix on," Featherstone says. "We didn't



Devendra Banhart



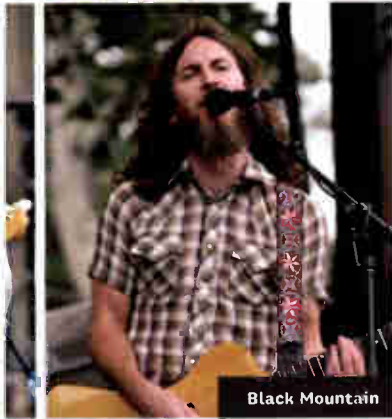
Drive-By Truckers



Wilco



Primus



Black Mountain



The Cool Kids



Liars



Jack Johnson



Ben Harper



Radiohead

really expect that many people. But the system was really well-tuned, and because it's a narrow field with a downward slope, we focused the energy down the meadow. We were pleased with how it delivered. And the natural surroundings in the park provided really effective isolation between the stages."

Mixing Primus turned out to be the "relaxed" part of the first two days for Featherstone, as he was forced to troubleshoot the Land's End system following loss of power twice in the Radiohead set and again during Petty's performance. "We learned a great deal about generator tolerances and battery backup units with computer-based systems this past weekend," he says.



Helen and John Meyer at FOH

"And we'll be forwarding the information to other festivals and promoters. Essentially, you have to be careful with the specs on your generator systems, as the way these generators are 'tuned' can vary greatly. We found that high-frequency oscilla-



From left: Meyer Sound tech support representative Steve Bush, UltraSound/ProMedia's Ian Du Bois (FOH tech) and Derek Featherstone (general manager)

tions and minor voltage fluctuations would kick in the battery back-up, as it's supposed to, but eventually the battery drained and when it switched the power shut down. On the third day we brought in a crystal sync generator and it worked flawlessly."

For behind-the-scenes videos of Outside Lands, visit www.mixonline.com/video. III

SOUNDCHECK

Pearl Jam Road Crew Rapid-Records



Above: Pearl Jam performing. Upper-right: bootleg recording engineer John Burton; below: recording engineer Barrett Jones



By Amanda Morrison

Seeing as they've already made live "bootleg" recordings available to their fans, it comes as no surprise that Pearl Jam has partnered with Verizon Wireless on their latest tour to introduce Live Mobile Bootleg Recording Program, which makes three songs (one free, two for \$1.99 each) from each show available to fans the next day via Verizon's V Cast (Virtual Casting) technology. The task of recording, mixing and releasing a show in less than 12 hours is the responsibility of the Rat Sound audio crew: monitor engineer Karrie Keyes, bootleg recording engineer John Burton and bootleg recording mixer Barrett Jones.

According to Keyes, the process for these recordings starts with ensuring that the band has a great monitor mix via her Midas Heritage board. Keyes uses a combination of different monitors for the band: On bassist Jeff Ament, guitarists Mike McCready and Stone Gossard, and keyboardist Boom Gaspar, she relies on Future Sonics in-ear monitors. Drummer Matt Cameron uses two EAW MicroWedges and a Rat Sub for the drum-fill and earplugs. Singer Eddie Vedder uses one ear and a combination of wedges and sidefills. Keyes is also using a vocal wedge mix and side-fills for drums and other instruments.

Burton then takes over to record the show, working on a Pro Tools HD3 workstation using multiple

Digi 92 I/O interfaces; Grace 801R pre's run direct into Pro Tools. Once the recording is finished, Jones takes the drives from Burton after the main set to the Verizon bus and gets the three-song mix ready for release the next day. The bus has been converted into a sound studio, where Jones uses a Pro Tools HD5 workstation with a Digidesign C24 board and Yamaha NS10 monitors; all gear was supplied by Verizon. Mixing in the box, he uses onboard plug-ins for all internal processing.

Because he has a limited time to get the songs mixed, Jones created a template as he mixed the first two shows. He set the EQs and processes on the template, so he would only have to make minor tweaks for each song going forward. After the three Verizon songs are mixed, Barrett masters them using Waves' C4 to an L3 UltraMaximizer. Then Verizon posts them on its V Cast service. Jones spends the following day back on the Verizon bus mixing the rest of the show. Once the whole show is mixed, Jones sends the final copy via FedEx to Ed Brooks at AFI Mastering, where the final master is completed. All 13 shows from the tour are then available as MP3s, FLACs and CDs on Pearl Jam's fan club site, www.tenclub.net.

tour log

Rage Against The Machine

Front-of-house engineer Brad Madix is currently out with rockers Rage Against the Machine. *Mix* caught up with the act in Chicago at Lollapalooza 2008; for a full photo gallery from the festival, visit mixonline.com/photos/lollapalooza_2008.



How much gear are you carrying?

Very little. FOH comprises a Digidesign Profile console, Pro Tools recording system and a couple of CD player/recorders. We try to keep it "all in the box." All of the plug-ins are straight out of the VENUE Pro pack that comes with the console. This serves to keep it consistent when we switch from one Profile to another.

What is your mixing style for Rage?

Well, loud! Obviously, this band is a different style from Shakira or Rush [whom Madix previously mixed]. It wants to be in-your-face, to the extreme. While we want to be able to hear everything clearly, it's not exactly subtle.

Does your style change when coming into a festival?

I try to keep my "style" the same, but time is a factor in a festival situation. It's very helpful to be able to work offline with the stand-alone software or be able to tweak off the Pro Tools rig during the spaces between other acts.

How involved is the band in determining their onstage sound?

When I first came onboard, they went out of their way to tell me to "make it my own." They certainly have had things to say about the sound, but have put a great deal of faith in me to make it right.

Where can we find you when you're not on the road?

Right now, ripping up a bathroom for a remodel! I'd rather be skiing, though.

fix it

Martin Frey, FOH engineer for One Republic

Taking your RF gear overseas? Create an addendum to your tech rider that shows a list of all of your specific user frequency ranges and include it when advancing each show. Most local audio vendors and/or production companies will be able to tell you which frequency ranges will and won't

work in their region. Certain countries now require local RF licensing, which requires online application/registration and paying a "per-frequency" user fee in advance. Many large festival and regional promoters will even obtain the necessary licensing on your behalf.



George Michael Back in the U.S.

By Sarah Benzuly

George Michael's stop in San Diego, Calif.—the first show in the artist's six-week final leg of the 25 Live tour—was his first live performance in North America in 17 years. On board to celebrate Michael's return to the other side of the pond were monitor engineer Steve May (replacing former monitor

engineer/audio consultant Andy "Baggy" Robinson, who was on paternity leave) and front-of-house engineer Gary Bradshaw mixing on a DiGiCo D5; Simon Hall and Steve May mixed monitors on a DiGiCo D5 and D5T for Michael and the band, which included drums, percussion, a bassist, sax/keyboard player and three guitarists on the stage's top tier; below them were two keyboard players and six backing vocalists—all on Sennheiser SKM 5200 wireless handhelds with Neumann KK 104 S capsules.

The tour also brought 18 channels of Evolution EW 300 G2 personal wireless monitors with multiple receiver packs. Full-range EW 572 G2 wireless guitar systems were used on two of the guitar players and additional wireless packs were used with e 904 clip-on mics on the congas when they moved downstage for parts of the show.

Eighth Day Sound provided racks and stacks; Wigwam Acoustics (UK) spec'd the rest of the gear.



From left: Simon Hall, Gary Bradshaw and Steve May

load in



Tim McGraw's Live Your Voice tour uses a ribbon-loaded Peavey VersArray line array system for the two stages—Frito's Style Sonic Stage and McGraw's VIP Stage—as spec'd by engineer Dave Albro and A2 Devan Skaggs; Albro mixes on a Crest HP-W board.

Neil Diamond's U.S. tour is employing monitor mix/live recording engineer Bernie Becker and sound designer/front-of-house engineer Stan Miller; the outing features a Professional Wireless Systems CX-8 and CX-4 amp/combiner to help with the wireless demands of the tour, which includes AKG D5 dynamic head and IEM system...An Allen & Heath iLive digital mixing system has been purchased by Scotland-based P.A. company Ward Steedys Associates...PA Plus Productions deployed an in-the-round SR setup for "Songwriters" night at the Avalon Theatre (Niagara Falls, Canada), with six line arrays each containing eight JBL VerTec elements, powered by Crown iTech amps...The New Opera House Oslo features a networked Aurus/Nexus audio system provided by Salzbrenner Stageteq Mediagroup...The first UK install of Martin Audio's OmniLine Micro line array was in the new Kingly Club in London; the scalable system was spec'd by Bernard Mani, head of London integration company Systems Etc.

road-worthy gear



Sennheiser e965 Mic

The e965 is the new flagship in Sennheiser's Evolution Series. This dual large-diaphragm (1-inch), true condenser mic lets users switch between cardioid and supercardioid patterns. Other features include a switchable -10dB pad, a switchable low-cut filter, 40-20k Hz response, max SPL handling of 152 dB and an internally shock-mounted capsule that suppresses handling noise. The e965 is now shipping with a retail of \$878.

www.sennheiserusa.com

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One Systems Cross-Field Array stadium speaker system features high output in long-throw, harsh weather environments, with a gray Fiberglas cabinet for UV and heat tolerance. The two-way design has four 10-inch neodymium woofers loaded in a high-Q, wide-bandwidth horn with three titanium-diaphragm HF drivers. For high intelligibility and clarity, its 50x20-degree (HxV) dispersion reduces time-domain interaction between bass/mid-bass and highs. The system has 11 M10 rigging points and includes a "U" bracket for wall/pole-mounting. Power handling is 1,200 watts continuous; 2,400W program.



www.onesystems.com



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The AN-15/0 Version 4 output module for Aviom's Pro16 A-Net audio transport system handles a wide range of signal level requirements, simplifying connectivity with other manufacturers' consoles, amps, powered speaker systems and recording devices. Each channel pair on this 16-channel D/A converter has settings for mic or +24/18/4dBu line outputs routing to analog DB-25 multipins. Ideal for stage or front of house, adding a split for recording or broadcast requires little more than running a Cat-5e cable. Any number of AN-16/0 V. 4 units can be connected for unlimited lossless digital splits of an audio stream.

www.aviom.com

ALL ACCESS

Text by Sarah Benzuly. Photos by Steve Jennings

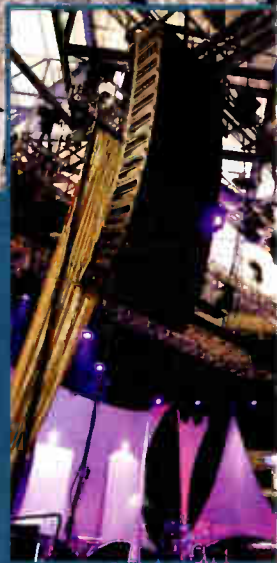
Dolly Parton

She is the consummate artist: a true professional with an unmistakable voice; a multi-instrumentalist and a hit-making songwriter. When a sheer piece of fabric hung from center stage was pulled away, Dolly Parton—surrounded by a top-notch eight-piece band and three background vocalists—hit the ground running, wasting no time in launching into a full two-hour set that highlighted classics (“9 to 5,” “Jolene” and “Little Sparrow”) and hits from her latest release, *Backwoods Barbie*. *Mix* caught up with the Thunder Audio-supplied tour, where we found front-of-house mixer Mike Fechner and monitor engineer Jason Glass relaxing for a few moments at Berkeley, Calif.’s Greek Theater after soundcheck.

Front-of-house engineer Mike Fechner (seated with Thunder Audio crew chief Dave Bernas) is on a maxed-out, 48-input Midas XL4 “with all the goodies. It certainly takes up a big amount of space,” he says, “but it’s just a great old classic, and with a couple

of key analog pieces inserted here and there, it worked really well for us.” For out-board, he’s carrying a bunch of Distressors, Alan Smart C2s, some dbx—a lot of compressors. “There’s probably 20 in the rack,” he adds. “I use them on various things: vocals, drum fiddle, acoustic guitars.

Thunder Audio’s self-powered Meyer Sound system features dual arrays of 12 MILOs and eight ground-stacked 700-HP subs; twin side-hangs of seven M’elodie loudspeakers and six UPI 1P VariO serve as front-fill. Design and tuning are via MAPP Online Pro and a SIM 3 audio analyzer. “It is the ultimate in sound quality,” Fechner enthuses. “Particularly with [Parton’s vocal] headset, the Meyer system has really helped with clarity and intelligibility—getting the clearness of her voice as she goes from spoken word to singing very quickly.”





Parton's 24-karat-gold-plated Shure UR2/KSM-9 wireless mic was created for her appearance on

American Idol—to “Dolly [the reality show] up,” as monitor engineer Glass says. It is customized with the electronics, metal finishing and clear-coat done at Glass' machine shop; the 24-karat-gold plating is courtesy River Gold Plating Co. in Fort Wayne, Ind. Background vocalists use Shure UR2/KSM-9 setups from Professional Wireless Systems, as well as Countryman IsoMax W5 headsets and a pair of hardwired Shure 55SHs.



Parton sings through a Countryman IsoMax W5 headset with Lectrosonics SM transmitters and R400A receivers. According to Fechner, there is a channel of Lake Contour on it so that he “can dial in and slice-and-dice.” Fechner also has a Manley Variable Mu comp and BSS outboard on the IsoMax.



There are numerous IsoMax lavalier-type capsules with Shure U1 and UR1 wireless for the fiddle and other acoustic instruments. Harmonicas are miked with Shure 520DX.



According to guitar tech Raymond Hardy, electric guitar amps are miked with Thunder Audio-supplied Royer R-121s.



Backline techs, from left: stage manager Jay Muth, audio tech Bryan Baxley and carpenter Brady Murphy



According to drums and keyboard tech Al Lewis, mics include Equation Audio DMI.101, DMI.102S and CMI.103; AKG C 414s; and Shure Beta 91 and Beta 52.

Monitor engineer Jason Glass (seated at right, with monitor tech Dustyn Pieffer) is mixing on a Yamaha PM5 DV2—also maxed out at 48 inputs. This tour is using a significant number of wireless mics. When asked how he's dealing with finding a new frequency each night, he replies, “I have 29 signals to manage. We use Professional Wireless Systems to provide a combination of Shure, Sennheiser and PWS hardware. Each day, I use WinRadio to do a live scan, and I run PWS IAS software to determine what's available on the air.”

Everyone in the band is on in-ears except Parton and the background vocalists, who have one in-ear and one wedge. Parton has 10 Meyer MJF-212A wedges arrayed in a line downstage: “It's stereo—left, right, left,

right—all the way down the stage,” explains Glass, who is also controlling two UPA-1P loudspeakers and two USW-1P subs for Parton's band. “I have a couple of zones set up so I can control stage volume, which can be a challenge. With that many pieces, you can easily get yourself into a wall of noise. You have to rein it in, and I do a lot of panning—even as she walks across the stage, it gives her a sense of space without feeling like everything's stacked on top of each other.” Parton hasn't switched to in-ears because “she wants a truly open interaction with the audience. No matter how good you are at mixing in-ears, it's still the

engineer's interpretation of reality that is presented to the artist.” Glass uses AKG C 414s to add ambience into the in-ear mixes.

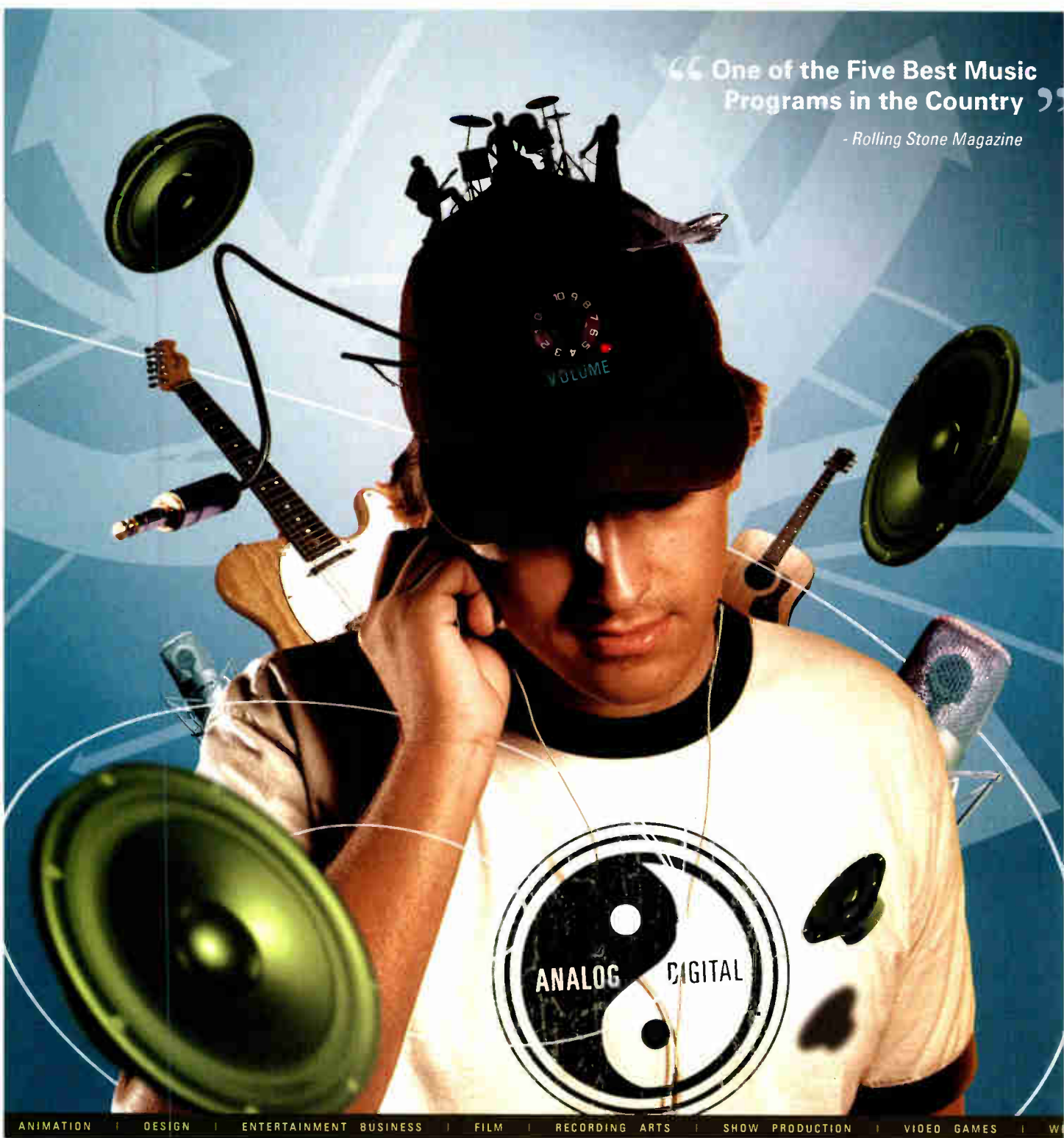


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World Radio History



By Blair Jackson

“The Office”

FAUX DOCUMENTARY STYLE IS HARDER THAN IT LOOKS

Now entering its fifth season on NBC, *The Office* has developed a rabid following for its blend of silly and subtle comedy, and the spot-on timing of its enormously talented ensemble cast led by Steve Carell, Jenna Fischer, John Krasinski and Rainn Wilson. If you're at all familiar with the series

(or its earlier British counterpart on which it is based), you know that the style of the show is faux documentary—we, the viewers, are essentially eavesdropping on the professional and personal goings-on at the Dunder-Mifflin paper company in Scranton, Penn., thanks to an unseen

documentary film crew. Occasionally, characters even address the cameras directly in brief “interview” segments. This stylistic conceit gives *The Office* a feeling that is different from any other scripted show on network television, and it informs every aspect of the production, including the way

sound is handled from shooting through post.

Production sound mixer Ben Patrick has been with the show since the pilot in 2005. A veteran of numerous—mostly indie—features and TV series, including *The West Wing* and *Andy Barker, P.I.*, Patrick came to *The Office* through co-executive producer Kent Zbornak, with whom he'd worked on an unsold pilot. Asked if Zbornak, producer and occasional director Ken Kwapis and producer/director/co-creator Greg Daniels had any advice for him about the show's aesthetic, Patrick responds, "They didn't really explain anything to me; in fact, I sort of explained it to them because they didn't know documentary-style sound. Ken Kwapis was well-versed in the ways of television and filmmaking, but he wasn't really a doc guy. I've done a fair number of docs."

The show is shot on the stages of the Chandler Valley Center Studios in Van Nuys, Calif. (a part of town that "we made to look like Scranton!" Patrick reveals). During the first season, however, the "office" scenes were shot in the actual production office for the show, with a stage being used only for the warehouse scenes. Since then, they've duplicated the look of that real office on one of the stages, which gives Pat-



rick—and everyone else—a little more control. The show is shot with two handheld cameras for maximum flexibility, and Patrick notes that the camera operators are "incredibly agile. They come from reality TV, from *Eco-Challenge* and *Survivor* and things like that, and they're amaz-

ing to watch because they're so precise and good at what they do. They can shoot within inches of each other in a full room with no problem. My boom operator has to be agile, as well, because there's a lot of movement in this show within a somewhat confined space."

Patrick captures the all-important dialog with a combination of a boom mic—always operated by Brian Wittle, with whom he has worked on and off for a dozen years now—and multiple Lectrosonics RF mics. The first year, the heart of Patrick's rig was a stereo DAT (with MiniDisc backup) and Cooper 106 mixer, and much of his production track went out on the air as he mixed it. But his setup has evolved considerably, now incorporating the Sound Devices 744T and MetaCorder multitrack recorders and a new mixer. "Today is the first day of shooting Season Five," he reports, "and I'm working on my brand-new Yamaha 01V96V2 board, which is a big departure from my Cooper with seven channels that I had for years and years and years. I had no complaints with the Cooper—the guy [Andy Cooper] is local, he made a great board and it wasn't as expensive as a Sonosax; it was fantastic. But I needed more channels. I've just been recording a conference room scene and I've got 14 wires—radio mics—on, but when I only had seven pots. I either had to cascade another mixer in or we'd get crafty with plant mics or two booms and we'd be more selective in making things work. We'd really have to decide where the funny was—where the joke was—in those situations, and we wouldn't be as concerned with some other actors' lines. My boom man and I would make those decisions together." Patrick credits fellow production mixer Mark Ulano (*Iron Man* and *Disturbia* are just two of his recent credits) with helping him set up the new 16-channel Yamaha board.



Production sound mixer Ben Patrick has worked on *The Office* since the pilot in 2005, adding more audio channels along the way.

Typically, an episode is shot over five days, with work beginning at 7:05 a.m. sharp and stretching about 11-and-a-half hours—"pretty reasonable," Patrick says. "When we start rolling, they'll roll the cameras, roll sound and we'll go for 22 minutes to 40 minutes, and in that time they might stop and talk a bit, but we'll keep the cameras rolling and the actors will do the scene again and again and again, with little variations usually. At first, there's not a whole lot of improvisation. We get a lot of takes because of that style of shooting, and there isn't a lot of time to go and fix someone's radio mic or turn off a fan or something, so you have to figure out how to fit it in between the acting."

Might a character unexpectedly improvise a line mid-scene? "It used to happen all the time," Patrick says. "The accountant, Kevin, was always coming up with little things, and you'd see him in the back and his lips were flapping, and you'd think, 'Poor Kevin, he's not going to make the cut' [because he wasn't covered by an RF or boom]." Patrick notes that the quasi-documentary style of the shoot gives him license to leave the sound a little rougher than he might ordinarily: "We can live with a little extraneous noise—like air conditioning—as long as we can still hear the actors clearly."

When it comes to the brief "interview" segments, with characters speaking directly into the camera. "I let my microphones and my preamps do the work for me," he says. "I put a beautiful Schoeps hyper[cardioid] right on top of them and I actually employ my old documentary trick of sticking it in a boom stand when it's going to be a long session because we'll

shoot those up to an hour. There are all these nuances where they'll change a word, change the whole scenario, so it can go on for a while. Normally when you do a doc, you put a lavalier on the person and a microphone on top so you have two different options. Well, I don't do the lavalier here, but I like to have a warm interview mic. I tried the Oktava a couple of times and they were almost *too* warm, so I went back to the brightness of the Schoeps. We just got the new Schoeps shotgun—the blue CMIT 5U—and that's wonderful. We used it almost exclusively on the last Sam Mendes picture we did."

Increasingly, it seems, *The Office* has been moving outside the confines of the Van Nuys soundstages to exterior locales or, in the case of one of the best episodes of Season Four, a busy New York nightclub (actually shot in a downtown L.A. bar called The Edison). Patrick says that off-set interiors like the club are still highly manageable from his perspective, but things get a little trickier outdoors. "We did an episode called 'Survivor Man' in which they were out in the forest, and I have a rig where I abandon the cart and throw what I can in a little chest pack with a harness with a 744T and a PSC [AlphaMix] 8-channel ENG mixer, and I was out there running after the camera guys. We'll have the boom out there, too, but we're all on foot and running around." Surprisingly difficult, too, he notes, are scenes in the Dunder-Mifflin parking lot: "You might have nearly the entire cast out there, so it's tough. Normally the way I work with faders is if I open a pot, I close a pot so there's no phasing. But when I have 13 people talking and every single one of them has one line, and they've done it 28 times and now they're starting to ad lib, they want [to hear] it all and you have to give it to them, so then you're in this weird battle with phasing and trying to work it all out so everyone can be heard clearly."

Though Episode One of Season Five was being shot on that day I interviewed Patrick—July 29—it wasn't scheduled to reach re-recording mixers John W. Cook II and Peter J. Nusbaum until the second week of September. In between, the show's producers and the director of that particular episode (the show uses a number of different directors who work within the established template for the show, but still bring their unique vision to the proceedings) go through the many hours of takes and essentially assemble the program.

Cook and Nusbaum are both seasoned TV mixers—Cook, who handles dialog and music, goes back to *The Larry Sanders Show* and *News Radio* in the mid- and late '90s, while FX and



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Foley mixer Nusbaum cut his teeth working on *Buffy the Vampire Slayer* in the late '90s. Together, they've worked on a wide variety of series (and pilots), including *The Bernie Mac Show*, *Grounded for Life*, *Scrubs* and *Samantha Who*, and upcoming series *Worst Week* and *The United States of Tara*. (They were nominated—along with Patrick—for an Emmy for *The Office* in 2007 and 2008, and won one for *Scrubs* in 2007.)

Home for this busy and respected mixing team is Studio A in BlueWave Audio at Universal Studios in Universal City (L.A.), Calif., which is equipped with a 192-input Harrison Series 12 digital console. Unlike on a feature film, where the re-recording/mixing process can take weeks, Cook and Nusbaum can typically mix a half-hour show in a single day, and *The Office* is actually a little less time-consuming because of its format.

“*The Office* is a little bit different than many other shows because part of trying to pull off the documentary feel of the show is to keep some things a little less prepped, a little rawer,” Cook says. “Specifically, that means no ADR on my side. If we’re looking for a better articulation on a take, then it’s sifting through dailies, sometimes on the stage. With *Scrubs* and *Samantha Who* and the bulk of the other things we do, there’s less variation how we pull it off: It goes through a week of prep—loop group, ADR, Foley, FX and dialog editorial. That’s not the case here, for the most part.”

“As far as the FX and Foley go on *The Office*,” Nusbaum adds, “we use a lot of production sound effects to enhance the documentary feeling, and we try not to let anything sound sweetened because we want to keep it in that documentary vein. It’s an interesting mix because we’re trying to keep a subtle balance between the documentary realism and creating an engaging audio environment. So we’re not inclined to replace sound from production that may not be perfect with perfect sounds. We want it to sound like it was recorded on the set; that’s in line with the vision of the producers.”

Background FX are generally not at all obtrusive—in the office itself, perhaps phones, copy machines and such—“but we don’t add a lot because we want to keep it raw,” Nusbaum says. For exteriors on most shows, “Normally, we’d put in birds and traffic-bys and wallas and all kinds of things, but on this show, not so much. We might add some very subtle winds and airs to the exteriors, maybe a bed of traffic, but nothing that would stand out as an added or sweetened effect.”

On Cook’s end, “I have to work the dialog track a little harder than other shows because the track needs to be able to play on its own in a lot of ways. Not that it does all the time, but it’s so featured and I don’t have effects or music under—there’s a little more exposure than on other shows.” Cook says he employs the usual tools of the trade to keep the noise floor of exteriors down and maximize the articulation of the dialog, including EQ, notching and noise reduction. Line producer Zbornak, post supervisor Jake Aust and the writer of the episode are usually on hand to oversee the mix, “which is interesting for us because the writers all have slightly different sensibilities,” Cook says.



Re-recording mixers Peter J. Nusbaum (left) and John W. Cook II

“With all of our clients,” Nusbaum adds, “you just have to get to know what their likes and dislikes are. Some of them really like music played louder or backgrounds played quieter. At the beginning of the day, you just have to sit down, and say, ‘Okay, who am I working for today?’ and try to do the best work you can.”

“Our job is to serve the show and hopefully bring some consistency,” Cook says. “We want to adhere to the overall vision of the show and create the best possible end-product we can, within the constraints of what’s in front of us.”

The bonus is that on a show like *The Office*, doing that is fun. “Everybody on this show has a can-do attitude,” Patrick concludes. “It’s probably the nicest show I’ve ever worked on.” ■

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L-R: Ethan and Joel Coen with Brad Pitt during the making of *Burn After Reading*

PHOTO: FOCUS FEATURES

Skip Lievsay

A QUARTER-CENTURY WITH THE COEN BROTHERS

By Blair Jackson

Earlier this year, highly regarded supervising sound editor and re-recording mixer Skip Lievsay was honored with his first Academy Award nomination—along with re-recording mixers Craig Berkey and Greg Orloff, and production mixer Peter Kurland—for his work on the moody and violent Coen Brothers film *No Country for Old Men*. While the sound team didn't pick up a trophy, the film won four Oscars (including Best Picture), and the illustrious foursome did win the coveted 2008 Cinema Audio Society mixing award.

"*No Country* was challenging to the establishment because it's not the kind of movie that's generally revered in the [awards] process. It's a stunning example—and a rebuttal actually—to the idea that you have to have a huge sound to be recognized," Lievsay explains. With that film, Lievsay notes, "There's not that much dialog and we talked about the idea of not having very much music in the film and having a very stark, super-real track. The idea was to try to get to all the shock/scare things you might normally do with music and do it with sound instead."

Lievsay has been on every step of Joel and Ethan Coens' weird and wonderful filmmaking journey, from the noir-ish *Blood Simple* in 1984 to their just-released 13th feature, the fast-paced comedy caper *Burn After Reading*. In between is a passel of quirky and innovative works—some commercially successful, others not—including *Miller's Crossing*, *Barton Fink*, *Fargo*, *The Big Lebowski*, *O Brother, Where Art Thou?* and *The Ladykillers*.

When I mention to Lievsay that *No Country for Old Men* and *Burn After Reading* seem like complete stylistic opposites, he comments, "That's true, and I should note that *Burn After Reading* was green-lit and in pre-production while we were still mixing *No Country*. When we were mixing *No Country*, we believed it was going to be a little movie that no one was going to see. Big surprise there. *Burn After Reading* is one of their more commercial films—with big stars and all—but we didn't really discuss it much in philosophical terms because we've done movies like this before, and Joel and Ethan [Coen] basically said, 'If you don't know what to do here, I'll eat my hat.'

"You couldn't have much more of a stark contrast," he continues, "because on *Burn After Reading*, I had talking wall to wall and I had Carter Burwell's music wall to wall, so that was a big challenge. There's nothing very flashy in it [sound-wise]. But there are a lot of subtle things going on." Because it's a comedy, he and sound designer Berkey could go a little broader with FX, "but the main thing is, you always want to hear the joke; you don't want to step on the jokes with effects or music. You have to let the

jokes play, let the audience laugh, give them pauses to laugh. There's a certain style of doing comedies that we all try to adhere to."

Because the commercial prospects for the Coens' various films differ so much, "the budgets vary wildly," Lievsay says. How does that affect what he does? "Well, for those of us who have long-term relationships [with the Coens], we all agree amongst ourselves to do a more modest, less-commercial project for less money, with the understanding that the next movie or the one after that will be a more commercial project and we'll be able to make our [regular] rate and sort of break even on the operation.

"In terms of the actual production, everything is adjusted and is done in a more modest way. Everyone's working on the movie for less time, less is being asked of you and it's more modest in scope and goals. We'll try to recycle whatever sound we can on a more modest movie and record fewer new sounds. We might do less than a day per reel of Foley, whereas on big action movie we might do two or three days per reel of Foley. You might not even do a temp on a less-commercial movie, while on a bigger movie you might do three or four. On *Burn After Reading*, which had a big budget, we did four temps. That costs a lot of money, though you save time and money on the final."

Mixing *Burn After Reading* "was in the usual assortment of places," Lievsay says. "I mixed the dialog mostly at Warner Bros., where I like to work. Craig mixes sound effects at home, and we did the [final] the same as *No Country*,

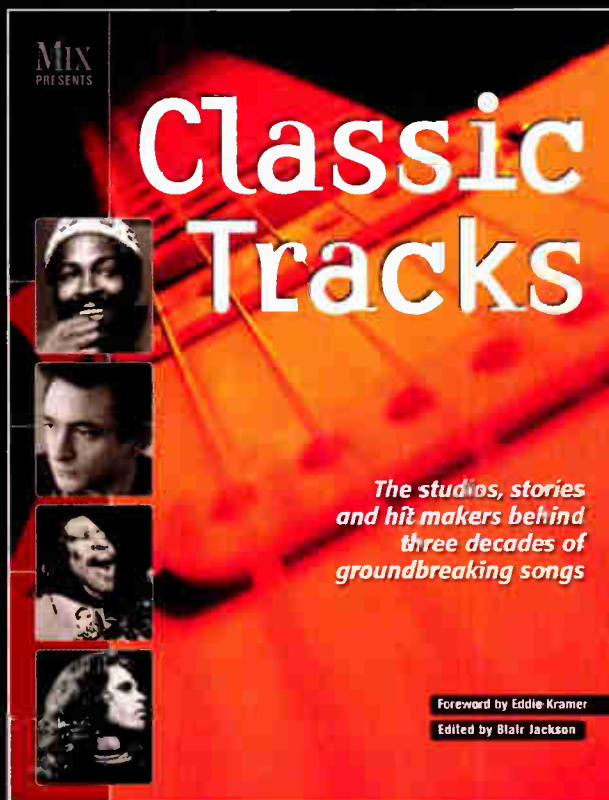
with Greg Orloff over at Sony. Joel and Ethan were so pleased with *No Country*, they said, 'This is the way we want to do it from now on.' They liked the process, the time period and the fact they were only on the stage a couple of weeks."

Lievsay does quality work with many other directors, too, but the Coens are clearly special to him. Next up from the brothers: another black comedy, *The Serious Man*. "I

read through the script once and had no idea what was going on," Lievsay says with a laugh. With the Coens, that's usually a good sign. III



Skip Lievsay has worked with the Coen Bros. since *Blood Simple* (1984).



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The 24-channel desk features all-discrete Inward Connections SPA690 amp blocks, custom output transformers, four group buses and a stereo bus (all with insert points), four pre/post-mono aux sends and one stereo aux send (pre/post). The Tree 500 also features all the master controls and options you'd expect

on a pro-level console, including six master aux level controls, mono and dim, stereo-in-place solo, channel mute, two external source choices and three speaker selections with sub, master, and left- and right-mute controls. Empty slots above the center section are ready for EQ and compressor modules for the four groups and stereo bus, while input channel slots accommodate mic preamps, EQs, dynamics modules and other goodies. Built for the long haul, the 500 has two heavy-duty power supplies with double the required current for the input modules and 500 Series buckets. Other extras include a headphone amp, oscillator, 100mm faders and optional meter module with analog VU and peak program LED bar graphs (-30 to +18) that can look at the input or output of each channel. Price: \$38,750.

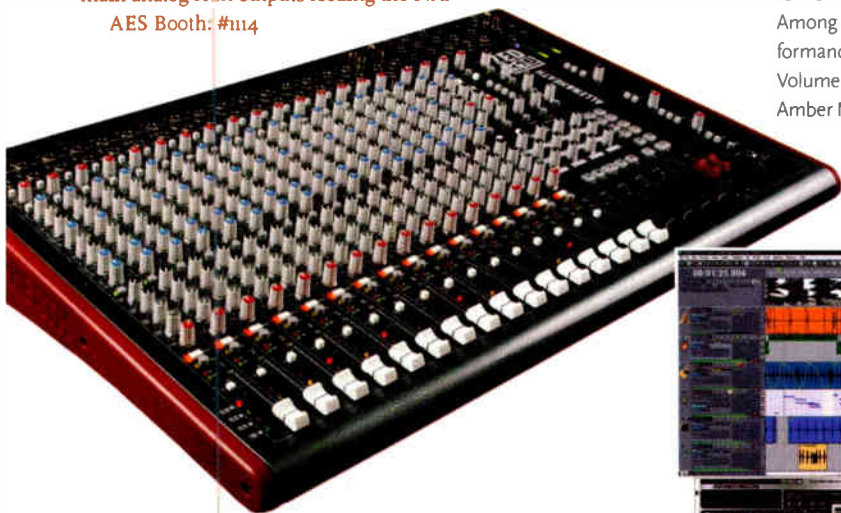
AES Booth: #1426

Keeping the Fire(Wire)Burning

Allen & Heath ZED-R16 Mixer

Its first recording mixer in 10 years, the ZED-R16 from Allen & Heath (www.allen-heath.com) combines an analog mixer with 18 FireWire I/Os, 16 ADAT I/Os, 4-band EQ (with parametric mids), dual-function audio/MIDI faders, onboard MMC transport controls, control room and alternate speaker outs, and two separate artist monitor feeds. Preamps are discrete, low-distortion/low-noise (-128.5dBu EIN). ZED-R16 is bundled with Cakewalk SONAR LE software, and can also operate as a versatile front-of-house mixer. In this mode, the mixer's four aux buses become monitor feeds and FX sends, with the main analog XLR outputs feeding the P.A.

AES Booth: #1114



More Icing on the Software

Cakewalk SONAR 8 Producer Edition

Offering workflow enhancements and new feature/performance optimizations, Cakewalk (www.cakewalk.com) unveils its flagship SONAR 8 Producer Edition sequencing/DAW software for the PC. The new version offers an upgraded Loop Explorer 2 view; dedicated instrument tracks optimized for mono/stereo virtual synths; Send Assign Assistant (wizard); numerous audio engine optimizations; transport, control surface, routing and editing refinements; workflow enhancements; and QuickTime 7 import/export. Among SONAR 8 Producer's new instruments are the Beatscape loop performance instrument, Dimension Pro 1.2 (now with Digital Sound Factory Volume 2 Classic Keys and Hollywood Edge Effects Library) and TruePianos' Amber Module. Its onboard effects are expanded with TL-64 tube leveler, TS-64 transient shaper, Channel Tools stereo enhancement plug-in and Native Instruments' Guitar Rig 3 LE. Also standard are updated ACT preset mappings for popular MIDI device/controllers, production-ready track/project templates, more drum maps and plug-in presets,

and integrated step-sequencer drum patterns. SONAR 8 Producer Edition retails at \$619 (\$499 street) and upgrades are available.

AES Booth: #1020



Say Hello Again to the 101

Grace Design

m101 Mic Preamp

First released in 2000, the half-rack, single-channel Grace (www.gracedesign.com) Model 101 preamp has gotten a facelift. New features include an audio signal path with 0.5% precision metal-film resistors, a 12-position gold-plated rotary gain switch, a built-in universal AC input module and a ribbon mic mode to raise input impedance from 8.1k ohms to 20k ohms. One thing that hasn't changed is the \$695 price—the same as its predecessor. The 2.4-pound unit also features a wide 4.5-39ok Hz frequency response, peak LED meter, output trim control and hi-Z input.

AES Booth: #1519



Ramp Up the Hub

K+H

K8 Digital Audio Distribution System

Ideal for transporting pro-quality audio across a facility (acting as a multideestination digital hub or for simple point-to-point connections), Klein + Hummel's (www.klein-hummel.com) K8 distribution system expands with four new components. The K8-ESB EtherSound Bridge (\$1,908) lets users

take any eight

or 16 EtherSound audio channels and encode them onto the K8 system. The K8-AO2 (\$684) can pull a stereo digital audio pair off of the K8 digital bus and decode it into analog outs. The K8-AES16 (\$1,964) can feed the system from any device with AES-

3 outputs, putting 16 audio channels from AES-3 (32 to 192 kHz) onto the K8 bus. The K8AES016 (\$1,964) takes any four or eight AES-3 stereo audio channels and decodes them into analog line outs.

AES Booth: #1210



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The C 214 from AKG (www.akg.com) carries a legacy of more than 30 years—a true rock star among microphones. The new C 214 was designed as a budget-friendly alternative to the C 414 family. It uses the same 1-inch, gold-sputtered diaphragm as the C 414, but offers a single, fixed-cardioid pattern, arguably the most widely used in general studio and live sound applications. The C 214 features a switchable -6dB/octave low-cut filter at 160 Hz, switchable 20dB pad and 136dB max SPL handling. Price: \$599, with shock-mount, windscreens and metal carry case.

AES Booth: #202

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USB "thumb" drives are a popular, renewable data-storage format, especially for sneakernet audio transfers and temporary storage of DAW sessions. To accommodate quick and easy duping of as many as 11 drives, Disc Makers (www.discmakers.com) offers the new Reflex Flash USB, with transfer rates up to 10 mbps. The Reflex Flash line will duplicate at speeds comparable to today's fastest 20x DVD duplicators, up to 330 units (256MB size files) per hour



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AES Booth: #703



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Schoeps (www.schoeps.de) expands its renowned Colette Series of modular condenser mics with the "open-cardoid" MK 22 capsule. Combining the directional effects of its MK 4 cardioid with the sonic character of the MK 21 wide cardioid, the new MK 22 is ideal as a spot or soloist mic. For "quasi-ORTF" stereo recording, the optional STC 22 mounting bar keeps two MK capsules splayed 110 degrees outward at the recommended 21cm spacing. Both the MK 22 (\$875) and its CCM 22 (\$2,129 complete) counterpart in the Schoeps compact condenser microphone series are now shipping.

AES Booth: #610



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Spectrasonics **Omnisphere**

The successor to its popular Atmosphere, Spectrasonics' (www.spectrasonics.net) Omnisphere virtual instrument combines a variety of hybrid real-time synthesis techniques, a huge library of "psychoacoustic" sounds and innovative features never seen on any hardware or software synth. Based on the company's new STEAM engine core technology, this \$499 cross-platform (Windows XP/Vista and Mac OS 10.4 and higher) synth is now shipping.

AES Booth: Pod #1815 III



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Blackmer Sound **Channel Strip**

Offering a new twist on vacuum-tube preamp/channel strips, Blackmer Sound's (www.blackmersound.com) Tube E has multiple gain stages, allowing control of pushing the signal against several saturation or overload points. Tube E also has a full-featured photonic compressor (with a two-frequency low-cut filter on the detector) and two pads: an Iron pad before the input transformer and a Tube pad after the transformer but before the first gain stage. A unique Dynamic Audio Display (DAD) shows clipping, gain reduction and overall signal at a glance for tweaking distortion or maintaining clean gain. Other features include a hi-Z input and several shaping filters: presence contour for shimmer, a tunable mid-scoop filter and a Phat switch to add punch.

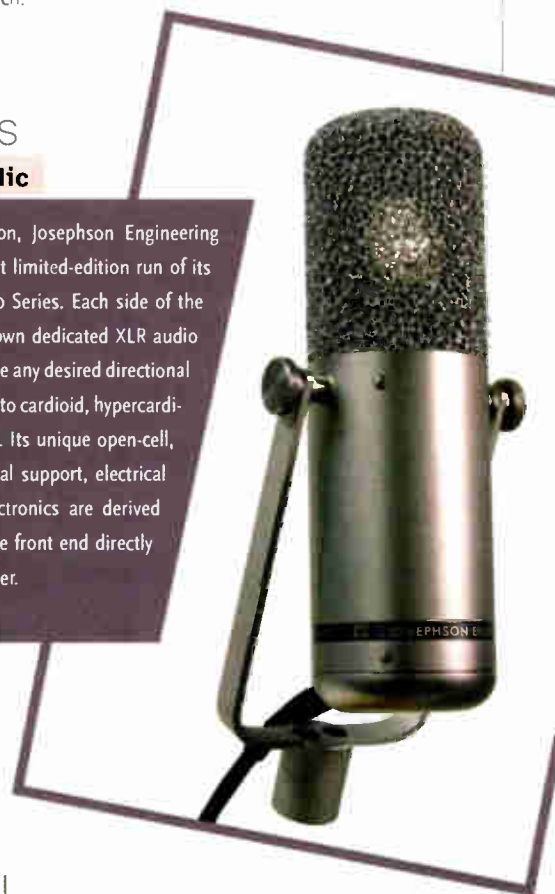
AES Booth: #1409

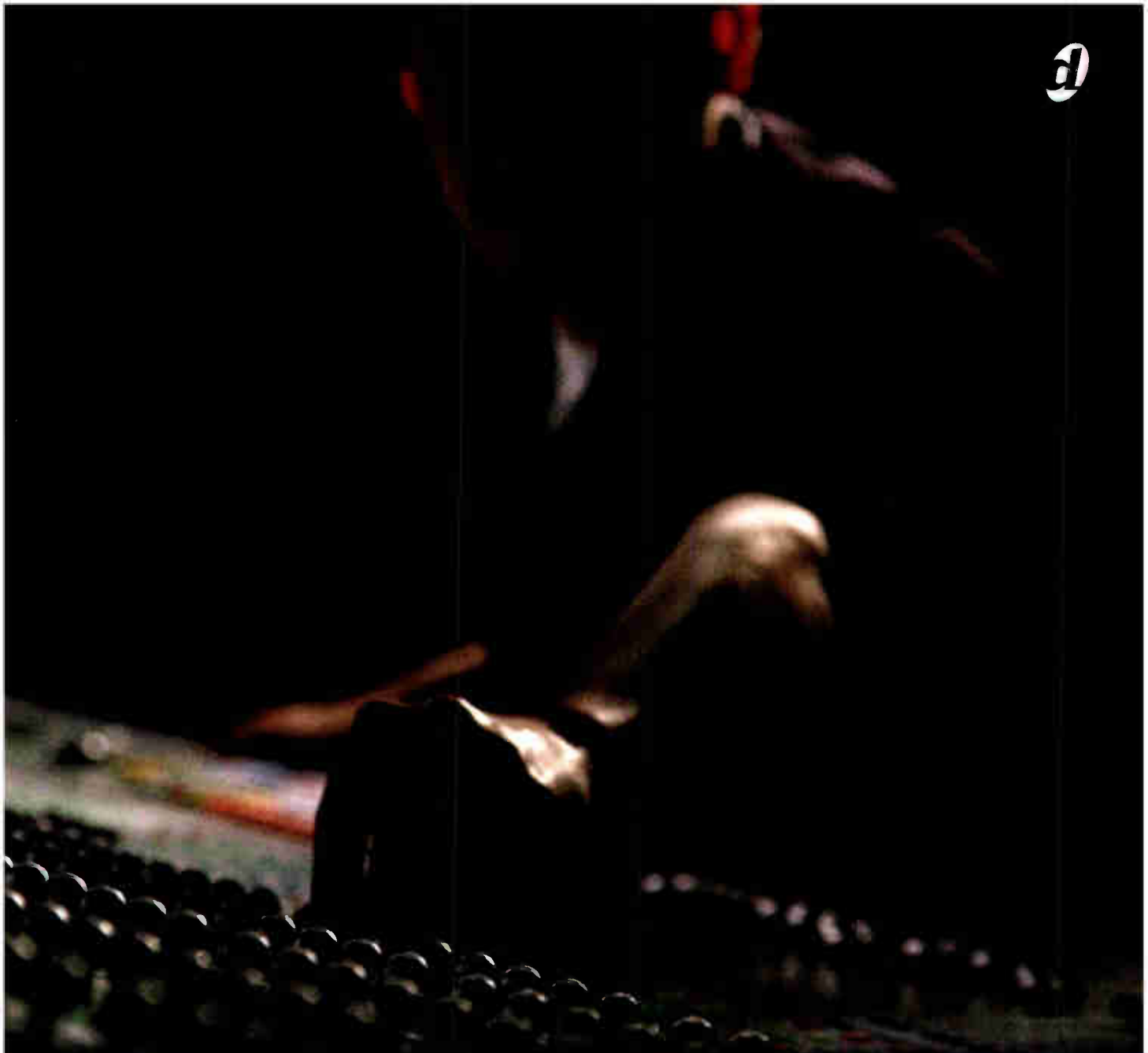
20 Years, 20 Units

Josephson **Model C720 Mic**

As part of its 20th-anniversary celebration, Josephson Engineering (www.josephson.com) announces a 20-unit limited-edition run of its C720 condenser mic, a variant of its C700 Series. Each side of the C720's dual-diaphragm capsule feeds its own dedicated XLR audio out so users can mix the two signals to create any desired directional pattern—from omni through wide-cardioid to cardioid, hypercardioid and figure-8—even after the recording. Its unique open-cell, metal-alloy foam grille provides mechanical support, electrical shielding and pop filtering. Onboard electronics are derived from Josephson's e22S mic, with a cascode front end directly driving a custom Lundahl output transformer.

AES Booth: #1126





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Consoles Take Center Stage at PLASA

Live Sound Show Debuts Smaller, Powerful Digital Mixers

With a growing demand for smaller-footprint boards that consume less real estate in main floor spots, the hot console debuts in London at last month's PLASA show were the DiGiCo SD8, Midas PRO6 and Soundcraft Si3.

DiGiCo SD8

DiGiCo's (www.digiconsoles.com) SD8 provides the major functionality and remote preamps of its D Series in a smaller, entry-level package.

The SD8 features 37 touch-sensitive moving faders, multifunction control knobs, electronic labeling and a 15-inch touch-sensitive, hi-res TFT display that acts as the console's primary command center. All 24 channel faders and 12 assignable aux/master faders can be instantly assigned as channels or masters, allowing 36 main faders to control inputs. Also standard is a 12x12 output matrix; its 12 buses are in addition to the board's 24 stereo, solo and master buses.

There's also a full-function 48x8 Stage Rack with remote control of its studio-grade preamps and 100-meter MADI digital snake,



DiGiCo's SD8 is a smaller version of the SD7.

other functions available to all channels simultaneously, thanks to its Stealth Digital Processing.

Midas PRO6

Adapting technologies from Midas (www.midasconsoles.com) XL8, the new PRO6 offers similar audio performance in a package that combines digital mixing/processing and comprehensive audio distribution.

The PRO6 system comprises a Control Centre and two seven-rackspace units handling DSP and I/O. Despite its small 54x36-inch footprint (about the size of a 32-channel Verona), the PRO6 can deliver up to 80 simultaneous input channels and as many as 32 discrete mixes in Monitor mode, with all channels having full EQ and numerous dynamics processing options. The standard PRO6 provides 56 channel inputs, eight returns and 41 buses (16 auxes, 16 matrix,

three masters and six solos). Also included are eight internal stereo FX processors, parametric EQ, eight standard (up to 36 max) 31-band graphic EQs, 5.1 surround panning and automation.

Also standard is a 192x192 100-meter digital snake using Cat-5e cabling. With more I/O

hardware, the modular PRO6 is expandable up to 264 inputs and 264 outputs, and the Klark-Teknik DN9696 recorder adds live multitrack recording and virtual soundcheck.

Soundcraft Si3 Live Console

The mid-market Soundcraft Si3 (www.soundcraftdigital.com) shares much of the technology of its larger-format cousins, but takes a decidedly different twist on ergonomics.

The Si3 comes in one flavor, with 64 mono inputs, four stereo ins and 35 output buses (24 aux/group, eight matrixes and L/C/R main mix outs)—all in a single chassis including the control surface, I/Os and internal power supply. It also includes four onboard Lexicon effects processors, 12 VCA groups, eight mute groups, bar graph metering for all 35 bus outputs, talkback, tone oscillator, eight analog insert points for using outboard processing on the outs and balanced rear panel XLRs for all channel I/Os and buses.

A Virtual Channel Strip with rotary encoders and OLED displays offers analog-style control of gain, EQ, dynamics, auxes, pans, etc. The Si3 uses Soundcraft's FaderGlow™ system, which puts a multicolor LED along the fader track to indicate which function is active.

The Si3's compact (66.3x32.1x13.3-inch), single-unit design will appeal to users seeking an easy replacement for an analog desk. Options include a redundant power supply module and four slots to accommodate MADI interfaces or AES/EBU input cards. ■



The Midas PRO6 delivers up to 80 simultaneous input channels.



The Soundcraft Si3 uses the FaderGlow system.

and the SD8's onboard local I/O has eight mic/line inputs, eight line outputs and eight AES/EBU I/Os.

Sixty mono or stereo channels—the equivalent of 120 channels—can run full DSP simultaneously, with reverbs, dynamics, matrixing and

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Universal Audio UAD-2 DSP Accelerator

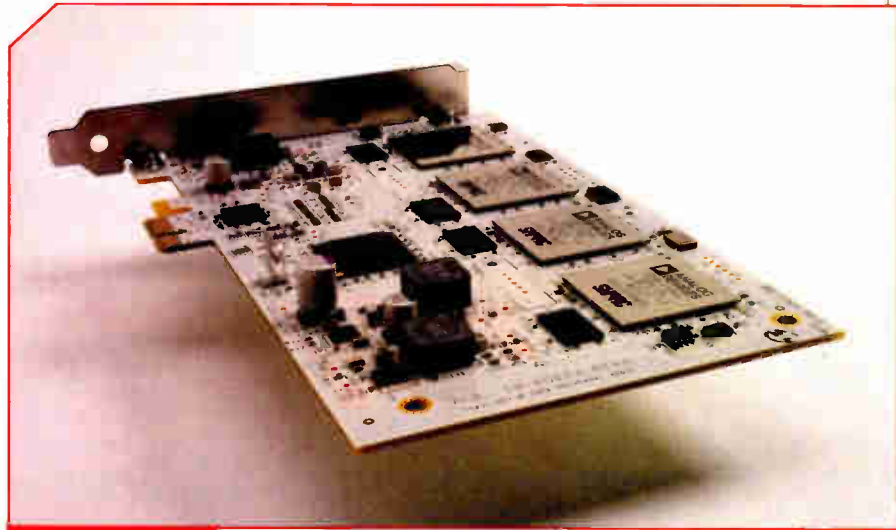
PCIe Card Offers 10x AU/VST Plug-in Power of Predecessor

Following the worldwide success of its award-winning UAD-1, Universal Audio offers the second-generation UAD-2 card and Version 5 software. Three years in development, the UAD-2 offers more speed, options and power at a price within the grasp of any studio owner. At the same time, Universal Audio will continue to support and develop new plug-ins for the UAD-1 as well as release new plug-ins or virtual instruments specifically for the UAD-2. Compatibility between sessions using plug-ins running on the UAD-1 and other sessions running the new UAD-2 card is also assured.

The UAD-2 is a PCIe card that's compatible with PCIe 2 and uses Analog Devices' 32-bit, floating-point math 21369 SHARC chip(s). Inserted into any available single PCIe slot, the UAD-2 can be freely mixed with your existing UAD-1 card collection—whether they are PCIe or PCI cards. Up to four UAD-2 and four UAD-1 cards will run in a system using a single software license.

Conservatively rated by the number of plug-in instances possible as compared to a UAD-1 in 44.1kHz/24-bit sessions, the UAD-2 comes in three versions: Solo, with a single DSP chip and 2.5 times the power of a UAD-1; Duo, with two chips for 5x; and the Quad card, which uses four chips for 10x.

Nine different hardware/software bundle combinations range from \$499 to \$1,999. Adding to the fun, Harrison, Moog and Little Labs



The top-end UAD-2 Quad card can run dozens of plug-ins or 128 Neve 88RS channel strips.

will join UAD's existing plug-in partners Neve, Roland, SPL, Helios, Valley People and Empirical Labs with emulations of their products. Crossgrading UAD-1 plug-in software to UAD-2 will be free until the end of 2008—even though not all Universal Audio plug-ins run on the UAD-2 yet.

Brand Shiny New

The UAD-2 supports VST and Audio Units hosts at up to 192kHz rates on Mac OS X Leopard/Tiger and Windows XP/Vista PCs. RTAS support is in the works and the card's new architecture has solved the multicore spiking issues for users of Logic 8 and Mac/Tel 8-core computers.

The new plug-in GUI has a redesigned toolbar that indicates which UAD card (1 or 2) is running it; LiveTrack™ on/off; and improved preset management where you can copy plug-in settings back and forth between SE and Full versions of plug-ins. The UAD Meter is a separate application and does not have to be running for the plugs to operate; it has three "fuel" gauges that show the UAD-2's approximate DSP load, onboard Program Memory remaining and UAD RAM storage. With a single click, you can

disable all plugs running on either the UAD-1 or the UAD-2 cards in your system. Access to the Control Panel is via the UAD Meter.

The greatly expanded plug-in tab has a Controls View/Parameter mode if your host supports it; a System Info page for more details on each UAD card in your system such as the number of running plug-ins per card, each card's latency and the amount of DSP load, Program Memory used and RAM usage for each SHARC chip; the Plug-Ins page with all plug-in assignments; and a single-click, demo mode/purchase/authorization scheme if you've already set up a UA account online.

The new DSP LoadLock™ feature reserves the maximum amount of UAD-2 DSP load required by each plug-in—even for features you've disabled. LoadLock is turned on by default but you can choose to disable it if you want to micromanage your DSP resources. With LoadLock on, the UAD-2 will allot for any additional DSP load incurred later in your mixing process, such as plug-in automation.

LiveTrack reduces latency at the expense of more CPU load. The latency of any UAD-2 plug-in—except those that have look-ahead (Precision Limiter) or up-sampling (1073, 1081, Pultec) or phase linearity compensation (Precision Multi-band)—is reduced as low as possible, even when

PRODUCT SUMMARY

COMPANY: UNIVERSAL AUDIO

WEB: www.uaudio.com

PRODUCT: UAD-2 DSP Accelerator

PRICE: Nine bundles offered at street prices ranging from \$499 to \$1,999

SYSTEM REQUIREMENTS: Mac OS 10.4 or 10.5, Win XP/Vista, minimum 256 MB RAM, available PCIe slot, 250MB hard drive space, CD-ROM drive, Internet connection for authorization. VST and/or Audio Units compatible host application such as Nuendo, Cubase, Logic Pro 8, SONAR, etc.

PROS: Massive increase in DSP horsepower over UAD-1 card using only one PCIe slot.

CONS: Must manually select plug-ins to run on the UAD-1 or UAD-2. Configuration not saved with session.



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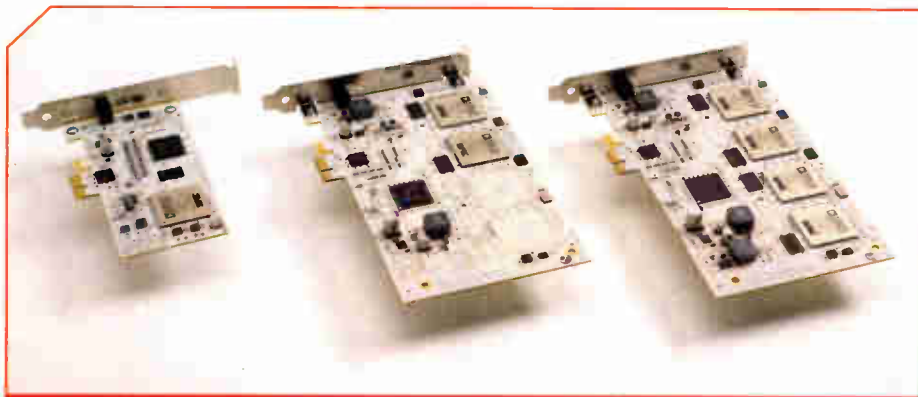
– Vance Powell, Blackbird Studios

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The UAD-2 cards are available in three versions: 2.5x Solo, 5x Duo and 10x Quad.

recording live audio. Instead of buffering the audio, it is transferred and processed immediately.

The Live Optimizing DSP Engine™ (L.O.D.E.) constantly balances the loading across multiple DSP chips of the UAD-2 cards. For backward (UAD-1-based) session compatibility and because of the completely redesigned architecture of the UAD-2 card, it is not technically feasible to dynamically allocate and spread

DSP load across both UAD-1 and UAD-2 cards.

UAD-2 vs. UAD-1 Smackdown in the Studio

To test the UAD-2, I called on producer/songwriter David Gamson to help me try to break it. He already owns three PCI UAD-1 cards and all the plug-ins, so we were able to do real-world tests. Gamson makes records using Steinberg

Nuendo V. 4.1.3 on a PC with an Intel quad-core Q6600 chip, on an ASUS Commodo motherboard overclocked to 3 GHz. He runs Win XP SP3 and a RME Fireface 800 I/O unit plugged into the motherboard's FireWire port.

The first order of business was to install the V. 5 UAD-2 software, boot up and let the new multicore-aware drivers install. Next, we installed a Quad UAD-2 card into a 16x PCIe slot and started up the computer to authorize the card and Gamson's existing plug-in collection. Authorization happens via the Control Panel where the Authorize Plug-Ins button opens the Web store.

The System Info tab within the Plug-ins Tab shows the entire list of all UA plug-ins with a selector to designate any or all of them to run on either the UAD-1 card(s) or UAD-2 card(s). However, with this first version of UAD-2 software, these selections are not saved with the session files. I think this should be a "set-and-forget" preference file. If you collaborate with



"The imaging and solidity of the low mids and bass is just astounding. The Recoils are an amazing product I never knew I needed. Now I can't live without them. Damn you!"

~ Nathaniel Kunkel

(James Taylor, John Mayer, Good Charlotte, Little Feat, Bon Jovi, Neil Diamond)



"I was suspect at first, but after a few minutes with the Recoils I realized how much difference they made. Especially on the low end. I'm keeping these. They work."

~ Al Schmitt

(Barbra Streisand, Steely Dan, Ray Charles, Quincy Jones)



"My nearfield speakers sound better on the Recoil Stabilizers than they did without them. The bottom is solid, the vocals are clear and my speakers don't fall down. It's a great product."

~ Daniel Lanois

(U2, Bob Dylan, Peter Dinklage, Emmylou Harris, Ron Sexsmith, Robbie Robertson)



"I trust my ears and how stuff hits me. Because I work in the same place all the time. I immediately know when things get better. I'm excited again! The Recoils look cool, are well built and I hear a tighter low-end. I like them!"

~ Gary Paczosa

(Alison Krauss & Union Station, Dixie Chicks, Dolly Parton)



"The Recoils definitely give you a more focused low end and more definition of where things are placed in the stereo image. They're an inexpensive and musical upgrade to your monitoring situation."

~ John Leventhal

(Shawn Colvin, Rosanne Cash, Joan Osborne, Michelle Branch)



"I really dig the way the Recoils sound. Now the drums coming out of my speakers feel like they do when I'm sitting behind them. I'm sold!"

~ Sammy Merendino

(Cyndi Lauper, Shawn Colvin, Billy Joel, Anita Baker, Roberta Flack)

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*Patent applied for



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Stratus™ acoustic ceiling cloud

Controls reflections over listening area. Size: 24" x 48" x 2" (3 panels shown)

others, one workaround suggestion is to send a screenshot to those who share your plug-in list, including UAD-1/UAD-2 plug-in assignments.

After using the UAD-2 during sessions, we decided to choose the Quad UAD-2 card to run DSP resource-hungry plug-ins, such as the Neve 33609 Limiter-Compressor, and leave the UAD-1 to handle less-intensive plugs such as the Cambridge EQ or Precision De-Esser. At the time of this review, not all the UA plug-ins had been ported over to run on the UAD-2, so the software automatically selects those that have not been ported to run on the UAD-1. If a plug-in runs on either card, it will default to the UAD-2, but you can change it in this window at any time.

Let's Get Loaded

Working at 44.1kHz/24-bit and without changing any buffer sizes or anything else in Nuendo, our first test was a big session that used 76 percent of the resources of all three UAD-1 cards. After adding in the UAD-2 card (you can enable any card on or off using the Control Panel) we restarted that same session, which then used 23

percent of the UAD-2's resources and just 11 percent of the UAD-1 trio.

Next, we built a session with only the UAD-2 card enabled and managed to run 57 tracks—each with a Neve 1081 set with all bands and filters switched on. Note: In hardware form, 57 vintage 1081 modules would set you back about \$171,000!

In the past, we seldom used the Neve 33609 plug because it would consume most (about 66 percent) of a UAD-1 card. We got 19 stereo instances of it using only the UAD-2 card. For the modest Cambridge EQ: 47 instances in mono on one UAD-1 card; 105 using all three UAD-1 cards; and 151 instances on one UAD-2 card. We were able to build a mixer with 128 Neve 88RS Channel Strip plug-ins with LoadLock turned off and only the EQ + DYN (or Gate) sections enabled. Got reverb? Still using only the UAD-2, we got 24 instances of the stereo Plate 140 plug-in. I have to say that we're greatly impressed but I have to add that, at least in our Nuendo rig, when running the UAD-2 on the "ragged edge" and instantiating the maximum number

of plug-ins possible, at times that number was lower when we saved, closed and reopened the same session.

Finally, we tested the LiveTrack feature and, although we don't have a way to empirically measure it because Nuendo 4 "auto-corrects" upon playback, there is an audible decrease in latency while playing live through an LA-2A plug-in running on the UAD-2 card as compared to the same plug running on the UAD-1.

Getting Better All the Time

Reminiscent of recording and mixing in world-class studios with giant consoles and many racks of classic outboard gear, the UAD-2 allows the same kind of creative freedom—the ability to use virtual signal processing without the traditional concern over DSP resource restrictions. The UAD-2 breaks all the UAD-1's limitations with nearly unconstrained processing power, making it a dream come true for all DAW users. ■

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



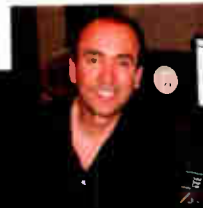
"I have to say that I am very impressed; the difference I hear in the sound of my nearfields is pretty striking. They seem more 'in focus' and have more low frequency extension. Even the low mids are clearer. WOW!"

~ Roy Hendrickson
(Miles Davis, Pat Metheny, B.B. King, Cheap Trick)



"The Recoil Stabilizers are absolutely amazing! I've been raving about them to every producer, engineer, and friend that I know! They proved themselves as soon as I put them up! It's incredible how much difference they make!"

~ David Isaac
(Eric Clapton, Stevie Wonder, Madonna, Whitney Houston)



"In these days when the focus seems more on esthetics than performance, it's nice to see a product that excels at both. The Recoils are terrific! The bottom end on playback feels very solid. It's a pleasure mixing with them. Consider me a fan!"

~ George Seara
(Rihanna, Herbie Hancock, 50 Cent, Sting, Finger Eleven)



"With the Recoils I immediately noticed improvements in the low end clarity, to the point that I no longer needed a subwoofer. Incredibly high frequency detail and image localization also improved."

~ Chuck Ainlay
(Mark Knopfler, Dire Straits, Vince Gill, Lyle Lovett, Sheryl Crow, Dixie Chicks)



"The Recoils work superbly! I feel like the bottom end is very true and clear, and that the mids are right where I expect them to be. They took my monitoring system up a significant notch."

~ Ryan Hewitt
(Red Hot Chili Peppers, Flogging Molly, Blink 182, Tom Petty, Robert Randolph)



"The Recoil Stabilizers are great! A huge difference from regular foam pads. They sound more stationary and connected. I'm quite happy with them."

~ Elliot Scheiner
(Steely Dan, Fleetwood Mac, Sting, The Eagles, Queen, REM, Faith Hill)

"worth their weight in gold."

~ Jon Thornton - Resolution magazine



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M-Audio Studiophile DSM2 Studio Monitors

Affordable Near-Fields With High-End Features and Sound

From its top-end EX66 (\$699.95 each) midfields to the diminutive Studiophile AV 20 desktops, M-Audio offers a wide range of studio monitors. Now, a design collaboration with sister company Digidesign results in two new near-field models: the Studiophile DSM2 (reviewed here) and the smaller Studiophile DSM1. This new effort has produced a monitor rivaling the reproduction characteristics of more costly units.

The larger of the two new monitors, the DSM2 (\$749 each) has an 8-inch LF driver with steel-frame construction and an anodized-aluminum cone. The published frequency response is 42 to 27k Hz, ± 3 dB, and I can attest that the 1-inch, soft-dome, Ferrofluid-cooled tweeter is smooth and open in the "air" frequencies above 16 kHz. The 2.7kHz digital crossover uses 24dB/octave Linkwitz-Riley filters. All crossover, EQ and channel-assignment functions are performed via 36-bit DSP. Incoming analog signals are converted to 24-bit/96kHz for processing before the signal hits the amplification stage. This could be an issue for some engineers hoping to avoid another conversion after their final D/A output. But to ensure the necessary levels of precision in the processing stage, the tasks are performed in the digital domain.

The onboard bi-amplification uses separate Class-D power amplifiers—LF, 100 watts; HF, 80W—plenty for lengthy listening sessions at non-ear-fatiguing volumes. Dual anti-clipping limiters are standard, with the HF limiter kicking in when it detects 0.5-percent THD—or 5 percent in the case of the woofer. The limits can readily be found when you push the speakers hard in a large control room.

The back panel has analog XLR and TRS input jacks, and a single, global -10dBV/+4dBu input sensitivity switch. M-Audio says these dual analog inputs are "summed" so that both connectors can be used simultaneously. Digital inputs are XLR AES/EBU or coaxial S/PDIF, with an input source switch for analog, digital or digital standby. A loop thru for S/PDIF can send a digital signal to your other speaker, and a Channel Assign switch designates which channel routes to each speaker. A built-in PLL circuit re-clocks the incoming digital signal, with published jitter less than 250 picoseconds. No external word clock inputs are provided. Incoming signals are automatically detected, with the DSM2 accepting standard frequencies between 44.1 and 192 kHz— ± 10 percent at 16- or 24-bit resolution. Also on the rear panel, a Volume Trim control operates in the digital domain, providing continuous input sensitivity adjustable from -22 to +10 dB.

But Wait, There's More

To address particular acoustical challenges, 12 back panel DIP switches provide access to the DSM2's onboard digital EQ; high shelf, low shelf, mid-EQ, highpass and cuts (220/200/175 Hz) are all switch-selectable. There are no specifications for the shelves or the midrange bump on the speaker itself, but included charts show the exact characteristics of each filter. Intended for use with an optional subwoofer, the highpass has a selectable 40/60/80/100Hz roll-off point. The HF and LF shelves, and the midrange EQ bump provide +1.5dB to -3dB variance in 1.5dB increments. Both the low and high shelves start their processing at 1 kHz, whereas the midrange center frequency is just a few cycles shy of 800 Hz. The 220/200/175Hz adjustments are called Desktop Filters and are useful when you are placing speak-

ers on a meter bridge or a desk.

Knowing that the room in which I was testing had a resonant build-up around 160 Hz, I used the 175Hz filter to cut 3 dB out of the low mid-range, making the DSMs sound much more like the JBL LSR 6328Ps I am accustomed to. These are very usable filters, providing an easy fix for the majority of positioning issues. The DSM2s offer no "auto-calibration," test tones/noise generation, test mics or actual audio guides for calibration. Situational examples—such as corner or meter bridge placement—are provided in the manual, but you must still perform the necessary testing to ascertain proper filter settings.

How Do They Sound?

On first listen, I simply played what I had with me as I was not working in my studio. Steely Dan's *Two Against Nature* CD was first up. All the nuance of the opening snare and hi-hat work of "Gaslighting Abbie" was reproduced with the detail I've come to know on higher-end speaker



The DSM2 speakers were designed in tandem by M-Audio and Digidesign.

PRODUCT SUMMARY

COMPANY: M-AUDIO

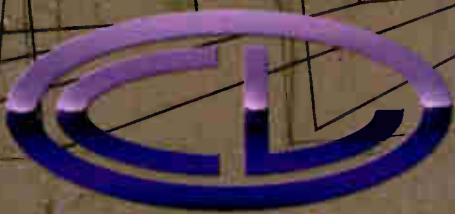
WEB: www.m-audio.com

PRODUCT: Studiophile DSM2 Studio Monitors

PRICE: \$749 each

PROS: Analog and digital inputs. Able to stand toe-to-toe with higher-priced competitors.

CONS: No monitor volume control when using digital inputs.



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systems. The vocals sat perfectly in the mix. I was immediately impressed. Prince's "3121" had the punch in the low end, and clarity and presence in the midrange, reproducing the wonderfully wacky sounds of that record with no unusual resonance or coloration.

Once in my studio, I balanced the DMS2s' volume against my JBLs to provide a familiar reference. Remarkably, they were similar in sound quality. Vocal placement and imaging were virtually identical, especially after inserting the 175Hz Desktop Filter. The very upper end of the HF range was also similar, with harmonics reproduced accurately from both 24/96 and 16/44.1 Pro Tools files. Naturally, when reproducing things like strings, there were differences between the two systems. Some bowing was noted to recede on the DMSs, by comparison. This would sometimes translate to a difference in the sound of the snare drums. However, keep in mind that these are minute differences between two systems in completely different price ranges.

To test the digital inputs, I used a digital send from a Lynx Aurora 8 AD/DA converter. The DSM2's digital inputs (and subsequent conversion to analog) held up quite nicely next to the more expensive Aurora system. The imaging was spot-on with vocal tracks, guitars and drums. I did notice some differences in timbre on a bright side-stick and sibilance on the vocals, the DSMs' reproduction being somewhat brighter in the 6 to 8kHz range. This translated to the fifth vocal part above the root coming forward slightly by comparison. All in all, these slight nuances are going to be evident in any system comparison. One drawback to the digital inputs is the necessity for some form of volume control. In a networked speaker system, volume can be addressed in the analog domain after the D/A conversion. I would love to see a future DSM2 version with this capability.

Accuracy, Accuracy, Accuracy

These speakers stand up to the rigors of current, competitive design criteria, meaning that they sound really good next to similar speakers in their class, and above. They're punchy in the extended low end without being tubby and accurate on the top. Imaging is solid. The DSM2s would be a welcome addition to any production environment. At this price point, this level of accuracy is a bargain. ■■

Bobby Frasier is an engineer, consultant and guitar player for Beatle cover band Marmalade Skies.

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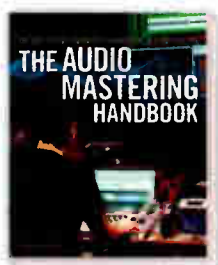


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Recording on the Go

Gary Gottlieb and Paul Hennerich IV ■ \$44.99
 Provides a comprehensive guide of every step of the live recording process, from planning what you want to do, getting the right equipment, setting up the recording, and then editing the results to taste.

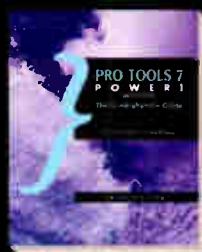


If These Halls Could Talk
 A Historical Tour through
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 Heather Johnson ■ \$29.99

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API 1608 Analog Console

Vintage-Style Mixer With DAW-Centric Features

The API Model 1608 analog recording console retains the same design philosophy, build quality and—most importantly—the same sound as the company's revered '70s-era mixers. It also includes modern updates that broaden its usefulness in this age of multiple recording and mixing formats, and the ubiquitous DAW. The 1608 has everything necessary to take any project from conception to final mix.

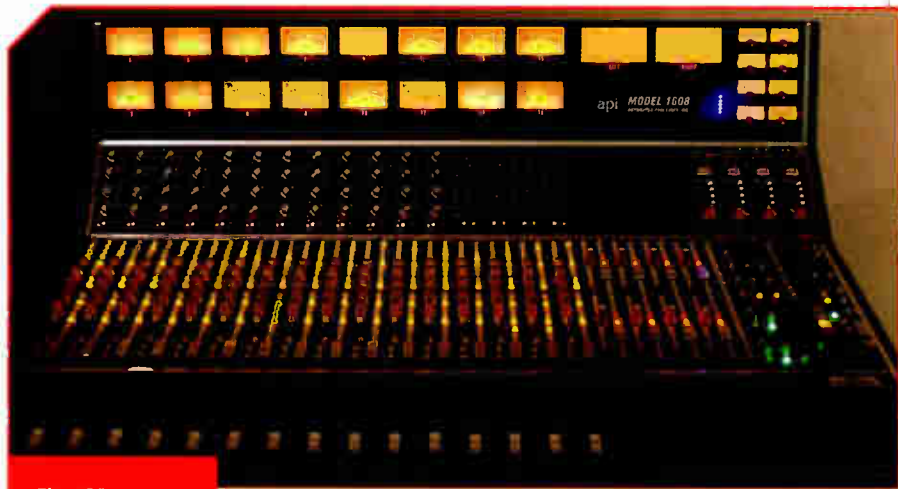
Breakin' It Down

Truly a small-footprint studio mixer, the 1608 measures 37.6x33x18 inches (WxDxH), weighs 228 pounds, and is built on a solid-aluminum frame. Its external linear power supply module connects via a 15-foot cable and mil-spec, multipin connectors. The 1608 has a 90-pin Elco connector for adding the 16-channel API 1608 Expander, which completely integrates program, summing and aux buses, mute group and solo facilities.

The 1608 uses all-discrete audio signal paths with fully balanced inputs/outputs. Also standard are: LED-lit push buttons for all functions and custom-made LED backlit VU meters, with no FET switches or VCAs anywhere. For group muting, low-distortion, light-dependent resistors are used; otherwise remote switching is by way of Panasonic TN Series relays with gold/silver contacts.

The rear panel is packed with XLRs, 1/4-inch TRS and DB25 connectors. This gang of I/O ports takes care of the usual cast of console characters including direct outs, inserts, mic/line/instrument inputs, echo sends and more.

To keep costs down, the console's module order is fixed—you cannot freely swap modules around. The standard module order is: 16



The API 1608 combines vintage API console architecture with new DAW-based features.

mic/line 548B input modules; four E1608 echo send/return modules; one 168B summing bus module; one 268B program bus output master; one 845B control room monitor; and a 840B Central Facilities module. The meter bridge has VUs for eight buses and/or 16 channels, stereo program level, eight echo send/return meters, plus talk-back mic and power supply monitor LEDs.

The first 12 channels include 3-band 550A EQs, and the last four channels have 10-band 560 graphics, but you can order them any way that you like. These are API's famed proportional Q equalizers, where only a few clicks change their sound from smooth and subtle to cranky and extreme.

Input and Echo Send/Return Modules

The 548B input modules are arranged in two buckets of eight long-throw 100mm mono Alps faders. The 1608 has all the offerings you'd expect from a big desk, including switches for mute, solo, mute group and solo safe, plus the mic/line input preamp controls, polarity flip and more. There are also some interesting extras, including a double-duty LED that shows peaks in red on line input but changes to blue with lavender peaks while in mic input mode.

The 1608's ties to API's past are in evidence with the desk using mostly API discrete 2520 op amps, while the mic preamps use a circuit similar to those found in the API 3288 console. The same mic transformers in the company's 512C mic preamp are also used. A nice new touch is the addition of direct inputs (DI) for instruments on every channel.

The console's eight echo sends are broken up into four concentric stereo pairs, with the option of sending 7 and 8 simultaneously to summing buses 1, 2, 3 or 4. This nice extra allows the user to employ the bus system to expand send options beyond the eight outs.

Lighted buttons atop each input module route a channel's audio output to the stereo program bus and/or any of the eight summing buses. The direct output (post fader) is always active. While the pan pot always feeds the program bus, the Pan button will connect it to an assigned odd/even busing matrix. The channel's output level is reduced by 3.3 dB while in center pan position.

The Fltr button inserts a gentle -3dB highpass filter with a 6dB/octave slope starting at 50 Hz, while the Insert button breaks the signal path coming from the equalizer for patching an external processor.

Monitor Control

The 1608 has plenty of ins and outs for monitors. Besides the main control room monitor

PRODUCT SUMMARY

COMPANY: API (AUTOMATED PROCESSES INCORPORATED)

WEB: www.apiaudio.com

PRODUCT: 1608 console

PRICE: \$49,995

PROS: Same sound, build quality and design as API's '70s consoles.

CONS: Module order is fixed. No 100mm faders for bus levels.

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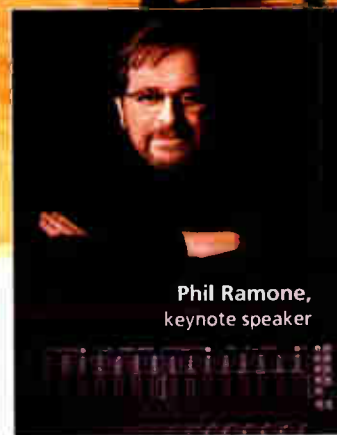
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API

speaker output with cal pots, are two paths for small speaker systems (also with individual cal pots). The control room monitor module has a L+R Mono monitoring button and the master volume control—the same customized 2-channel Alps unit that API converts to a six-channel version used on its Vision console. Also standard are: a Monitor Dim button with level control; Speaker Cut, which mutes any speaker set selected; and Main speakers select for choosing between two sets of small monitors.

Extravagant 6-channel external monitoring facilities allow for selecting between four different sources beyond the stereo program bus. Although the stereo program bus is normalized to the monitor, the eight buses used in surround mixing are not. Mixing in surround would necessitate either patching multitrack buses to the monitor or selecting your surround master recorder as one of the four playback sources and monitoring through it.

In the Studio

I felt a strange sense of "déjà vu all over again" when I first sat at the 1608—everything was located exactly where I'm used to, just like when using a vintage 2488 or 3288 console. But the 1608 can also be configured to work with DAWs in ways that are not possible with older consoles. For instance, you can use the 16 mic pre's to record while using 16 of the long-throw 100mm channels to monitor/mix your DAW returns at the same time. Or, you could use the mic pre's, EQ and direct outs to record while using the 100mm channels to monitor/mix DAW returns, and if required, also send a mix of the direct outs to other DAW tracks. Another scenario is to use the entire console for recording and the echo returns to monitor an "in-the-box" mix from the DAW. This also allows for complete cue system feeds to be sourced from the 1608 and/or DAW at the same time. All of this makes the 1608 very DAW-compatible.

I began testing the console by mixing songs I had recorded in Pro Tools. The 1608 lined up in perfect calibration when I played -18dBu reference tones out of Pro Tools. With faders at unity and playing full-level tracks from Pro Tools, the 1608 had loads of headroom and did not distort even though the stereo program's meters were pinning.

To better measure the stereo bus level and operate the console realistically, I lowered all faders somewhere south of unity. If possible, I'll change Pro Tools' HD 192 I/O setting to -20dB

reference playback level to use more of the console's huge reserve of channel gain. Right from the first rough balance and before using any equalizers, the sound was wide, deep and expansive—identical to using a large-frame API.

Recording on the 1608 is like any in-line console. For full sessions, I played my monitor mix on the faders using the EQs, echo sends for monitor effects and cue mixing and, at the same time, patched out of the mic preamps directly to outboard processors and on to Pro Tools. Those extra eight Series 500 slots full of mic pre's, EQs and compressors are a must for this engineering style.

I tried recording a Martin D-28 acoustic guitar track using a stereo X/Y pair of Mojave 201 FET condensers patched into channels 15 and 16. A pair of Distressors patched after the 1608 helped to produce an aggressive sound, and the console's 560 graphic EQs let me shape tonality to fit this rock track. Due to the gain added by the compressor and with Peak Threshold set to +4dBu, I got occasional flashes on my playback faders but none on my recording channels—a good thing—and I was recording and playing back "all" of the sound, including its peak information.

I found no sonic difference between using the direct outputs and the buses—although I had to calibrate the buses so they all matched each other. Using too much mic gain makes it easier to overload the buses than the direct outs but, at proper operating level, there was no change in sound. In addition to bus peak indicators, my wish list includes eight 100mm faders for controlling/riding bus levels.

A New Classic

Another classic in the making, the 1608 has the same honest, clear, punchy and tight sound of its vintage predecessors. But it's not just a great old console in a new box; it's packed with forward-thinking features not found in older consoles, such as versatile ways to connect it to a DAW, sufficient headroom to send a full +24dBm RMS signal into DAW inputs, direct inputs on every channel, and +4dBu to +24dBu peak meter threshold settings.

Couple all this with API's legacy, operational efficiency and wonderful proportional Q equalizers and the 1608 provides the best and fastest track to sonic nirvana I've seen in years. III

Barry Rudolph is an L.A.-based recording engineer/mixer. Visit www.barryrudolph.com.

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The Professional's Source

ADK Hamburg II-AU and Vienna II-AU Mics

Custom-Shop Models With Distinctly Different Flavors

Over the past decade, ADK has carved a niche in the mid-level studio microphone market, offering successful products such as the A-51 and A-6. ADK later established a line of Custom-Shop products that includes the Hamburg II-AU and the Vienna II-AU (tested here). These side-address, cardioid condensers share a number of design traits. Both are based on a FET circuit that's designed to saturate gradually, and employ capsules created in Australia and transformers from the UK. A three-position pad is switchable between 0, -8 and -16 dB, enabling 134dB max SPL handling. A low-frequency roll-off can be switched between off, -3 dB at 100 Hz or -3 dB at 160 Hz.

Here's the Scoop

The ADK Hamburg II-AU and Vienna II-AU have a solid, hefty feel, so I was relieved to see that the included shock- and swivel mounts employ knurled rings that screw onto the bottom of the mic for a secure grip. The shock-mount provided better isolation from mechanical transmission via mic stand, but in either case the low-frequency roll-off switch can help reduce unwanted rumble.

For my first session with these mics, I recorded a male singer/acoustic guitar player and used the Vienna II-AU for his vocal. I turned the mic so that the mic stand was out of the way of the player's hands. This provided the opportunity to rotate the microphone body so that the null of the cardioid pattern was pointing down toward the guitar. The result was a clear, natural vocal sound that cut through the mix, but was a bit bright and not very flattering for this particular singer. When the vocalist moved to the side of the mic, the Vienna II-AU exhibited a drop in level and a change of timbre that was barely perceptible: There was a

bit less low end, but the high-frequency response remained consistent to about 30 degrees off-axis. In this context, I was impressed by the Vienna II-AU's minimal leakage from the acoustic guitar. Recording a person who is singing while playing an acoustic guitar—using separate mics for each—typically opens up a Pandora's box of phasing issues due to leakage of the guitar into the vocal mic and vice versa. When I mixed the Vienna II-AU with the guitar mic, there was no perceptible phase cancellation—a tribute to the Vienna II-AU's pattern control and smooth off-axis response.

Next up for the Vienna II-AU was a jazz flute in a live quartet. The mic delivered a smooth, present tone despite the fact that the flute player was quite animated and did not maintain a consistent distance from the mic, varying from around 12 to 20 inches. The Vienna II-AU's roll-off switch was set to the first position, which helped reduce low-end leakage from drums, bass and piano. Once again, any leakage that did occur produced no harmful phase issues. In the mix, the flute sat perfectly upfront without sounding harsh and without needing equalization.

I also used the Vienna II-AU to close-mike an acoustic guitar. The mic captured a lot of detail and gave a clear sense of the space in which the instrument was being recorded. At this particular session, I doubled the acoustic guitar using the Hamburg II-AU, which revealed a lot about the personalities of the two mics. The Hamburg II-AU emphasized the woody-ness of the guitar body, while the Vienna II-AU provided the shimmer, emphasizing the pick against the strings. This proved to be an excellent combination: There was no frequency "build-up" as when layering tracks using the same mic/instrument combination, and the two performances did not step on each other sonically, even when summed to mono.

I then used the Hamburg II-AU to record



Both mics offer three-position pad and roll-off switches; each can handle 134dB SPL.

acoustic upright bass with the mic placed about a foot-and-a-half in front of one of the f-holes, approximately 20 inches from the floor and pointing slightly downward. Upright bass can be difficult to record accurately because some mics overemphasize certain frequencies, causing the instrument to sound very loud on certain notes and soft when playing others. Not so with the Hamburg II-AU, which was smooth across the range of the instrument while conveying a sense of the instrument's size—even on the high notes—and providing just the right amount of pluck. The bassist requested a second mic on the fretboard, but I was happy with the result using only the Hamburg II-AU. The Hamburg II-AU also captured a few subtle, low-level noises made by this bass—cracking sounds that, the bassist informed me, were the result of

PRODUCT SUMMARY

COMPANY: ADK MICROPHONES

WEB: www.ackmic.com

PRODUCT: Hamburg II-AU and Vienna II-AU

PRICE: \$1,695 each

PROS: Hamburg: woody, warm, great on female vocals; Vienna: perfect when detail and shimmer are needed.

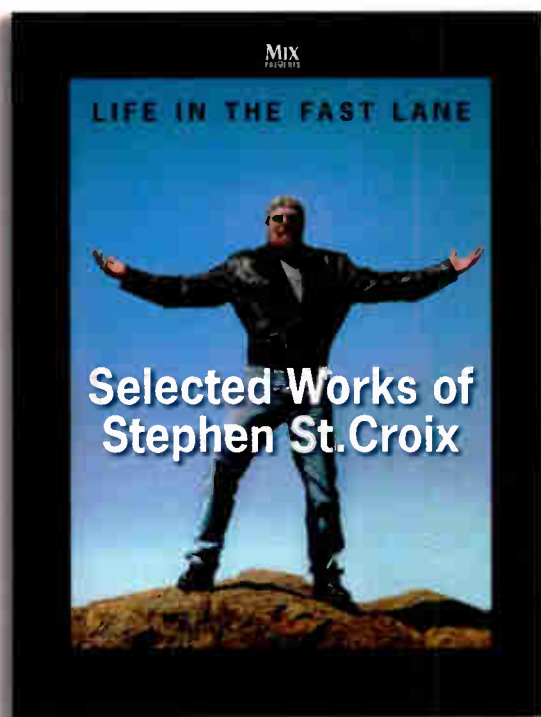
CONS: Hamburg: shipped with loose capsule; Vienna: too revealing for certain applications.

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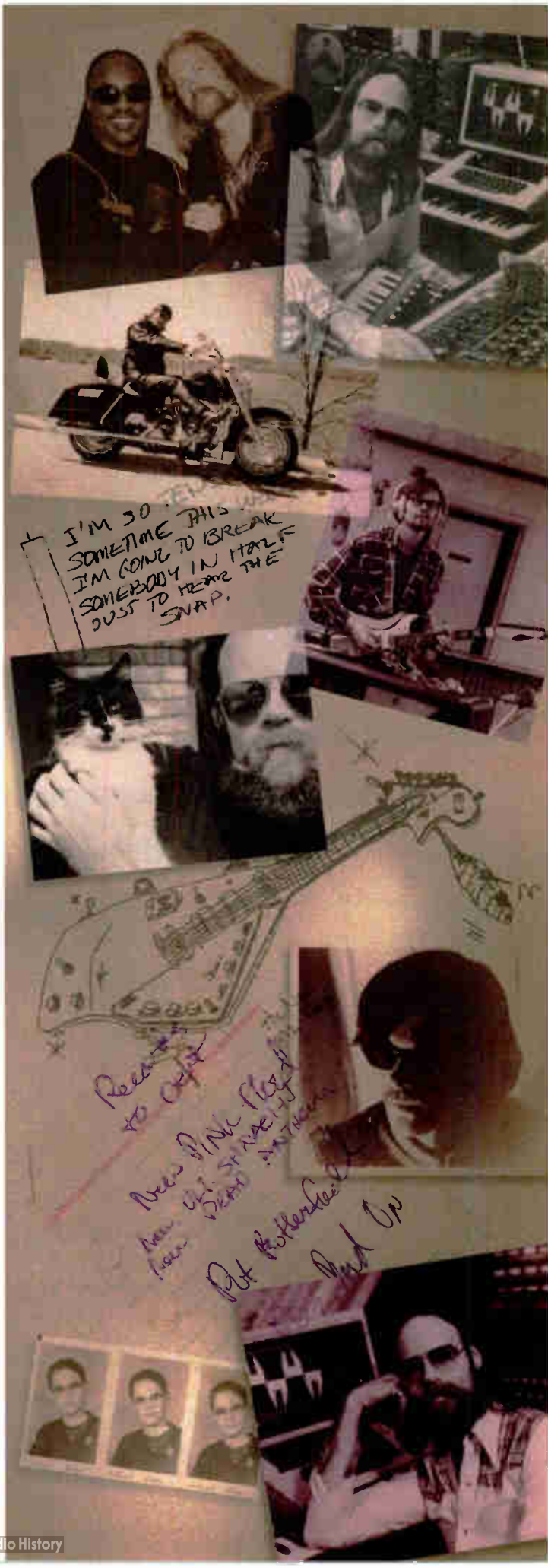
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On female singer/songwriter Tracy Johanna, the Hamburg II-AU was nothing short of wonderful. The mic tamed the sibilance and peakiness that can sometimes plague a female vocal. When Johanna sang softly, the Hamburg II-AU yielded a great sense of intimacy, yet remained smooth when she was loud. When recording quiet passages, the Hamburg II-AU (and the Vienna II-AU) produced no audible self-noise, clearly reproducing the low-level background noise from the studio's air-conditioning system—something other mics may not have picked up at all.

I tried each mic as a mono drum overhead, placed six feet high, pointing straight down over the snare and into a Grace Design Model 201 preamp. The Hamburg II-AU produced a more “retro”-sounding tone, emphasizing the snare and providing a subtle low-midrange emphasis. The Vienna II-AU produced a very different flavor: brighter cymbals, a greater sense of space, and bumps in the bottom and the top end. Output of the Vienna II-AU was several dB hotter than the Hamburg II-AU.

And the Verdict?

On the downside, the Hamburg II-AU I received for review had a loose capsule that rattled inside the head grille. This may have resulted from rough shipping and was easily remedied by removal of the head grille and tightening the screws that hold the capsule to its yoke. Each Custom-Shop mic is assembled in the U.S. and ships in a well-padded briefcase with a swivel mount, shock-mount, a nylon pop screen, foam wind filter and a padded mic bag. ADK Custom-Shop mics feature a five-year, no-fault warranty for the original owner when purchased from an authorized dealer.

With the Hamburg II-AU and the Vienna II-AU, ADK has succeeded in producing two microphones that complement each other by offering distinctly different flavors. I preferred the Hamburg II-AU for the wonderful way in which it handled female vocals, but both have their place in the microphone spectrum. The Hamburg II-AU yields a subtle, warm response, while the Vienna II-AU has the edge and presence that you may need to get a lead vocal or other instrument to cut clearly through a mix. I recommend that you listen to both models and see which one complements your microphone locker most effectively. III

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Sonnox Oxford SuprEsser Plug-In

De-esser and Dynamic EQ Processing With Automatic Level Tracking

Sonnox is an independent company that was formerly affiliated with Sony UK and known as Sony Oxford Plugins. However, team members have largely stayed the same, and they continue to expand the company's popular Oxford line of plug-ins. The company's first new entry, Oxford SuprEsser, uses the same attractive, highly intuitive GUI design from the Oxford plug-ins. Both a highly-featured de-esser and sophisticated dynamic EQ, this plug-in operates over the entire audio spectrum, making it useful on both vocal and instrument tracks—including bass, percussion and drums—as well as on program material during mastering.

Easy or Advanced Operation

When I launched the Pro Tools RTAS version in Easy edit view mode, I was provided with only basic filter and dynamics controls, plus a large FFT (Fast Fourier Transform) window to help identify the frequencies in need of treatment and set the threshold. There's a range of controls for setting the compression threshold, center frequency and left/right boundaries of the bandpass and band-reject filter pair. A vertical red "FFT peak line" is always present, holding for your attention the "important frequency" in the band window, which has the peak energy. An attenuation meter with peak-hold indicates the maximum amount of reduction occurring over the past couple seconds, and a dynamics in button allows for glitch-free comparisons, with (and without) the gain-reduction effect. Three listen modes let you hear the Mix, the output of the bandpass filter (Inside),



Oxford SuprEsser ships in three kernel sizes: Standard, High-Resolution and Low-Latency

signal with a highly compressed version for added punch.

Pressing the More button in the Dynamics section opens up an advanced view. This offers all the basic components described above, but adds deeper control over dynamics—such as Attack, Hold and Release of the reaction envelope, and compression Ratio/Soft-Knee—plus the ability to reconfigure the signal flow through the filters.

Say It—Don't Spray It

The Oxford SuprEsser ships with a few dozen presets, categorized from utility use and various instrument treatments to effects. I particularly enjoyed the more esoteric presets, such as Outside Ducks Inside and Sub Bass Make-Up, which inspired me to dig into the advanced edit view and use SuprEsser in very creative ways.

As a de-esser, the plug-in performed very well on sibilants and fricatives in all voice tracks. On spoken-word/narratives, I had natural-sounding de-essing results straight from Easy mode, using a fairly wide band with only moderate compression. Whenever the voice talent leaned too close to the mic, a pass with the filter band tightly focused on the low end and removed plosives and thus

or the output of the band-reject filter (Outside), while a Wet/Dry balance can blend part of the uncompressed

without affecting neighboring frequencies. To try out the Whistle Control preset, I had to cook up my own gap-tooth track, but the 0.2-octave filter band did the trick while minimizing the need for an Advil, without affecting the clarity, presence or carving a tell-tale notch of traditional EQ.

On tricky vocals—especially edgy female pop/rock where sibilance can result from "stylistic flair"—I found that setting a narrow detection band and fine-tuning the threshold and ratio controls would magically separate the two characteristics, ensuring that you won't end up with an overly de-essed or lisp-like vocal with all the high frequencies missing. And with default Auto-Level Tracking switched on, the detection peak accurately chased the anomalies through every emotive shift in pitch and projection of the vocal. Reduction was exceptionally smooth and uniform. Because it's a relative measure, tracking will apply more attenuation in the verses but not over-de-ess in louder sections, such as the chorus. There's even a 24dB "working range" that's smartly implemented within the tracking algorithm to prevent excessive gain reduction following periods of staccato speech or silence. With tracking switched off, you return to fixed-threshold compression.

There are some fantastic presets for De-Twanging acoustic guitar; DeRasping saxophone and removing harshness of trumpet; taking the nasal quality out of a cello using a notch in the 2 to 4.5kHz region; and reducing key-tapping and embouchure blow on wind instruments—all of

PRODUCT SUMMARY

COMPANY: SONNOX

WEB: www.sonnoxplugins.com

PRODUCT: Sonnox Oxford SuprEsser

PRICE: \$355

SYSTEM REQUIREMENTS: Mac-only; RTAS (both LE and M-Powered), Audio Units and VST.

PROS: Natural-sounding crossovers. Elegant GUI, highlighted by an interactive FFT window.

CONS: CPU intense with exorbitant latencies. No post-detection filtering or parametric EQ.

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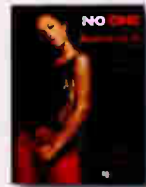


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which worked extremely well. The magic appears to be in the well-defined crossover filters and their variable slopes, yielding excellent and very natural-sounding separation of Inside from Outside.

Decisions, Decisions

Following years of market drought, we're seeing a flood of quality de-esser releases in 2008. With the release of Empirical Labs' new 500 Series-compatible DerrEssing Limiter hardware module, the Eiosis E²Deesser, McDSP's DE-555 and Steven Massey's De:Esser, there are ample choices when it comes to taming sibilance. These solutions, however, tend to fall on either the quick-set or high-tweak side of the fence.

I like the Sonnox approach, which provides the simple two-step "cutoff and attenuate" setup process of a conventional de-esser, but with all the creative benefits of a frequency-splitting dynamic EQ with reaction envelope. However, the SuprEsser's structure doesn't allow for any post-detection filtering or parametric EQ (for independently contouring the inside and outside parts) in the way that the Eiosis E2Deesser does, for example.

Oxford SuprEsser uses floating point processing, which makes it incompatible with the TDM platform. It also uses convolution, requiring an "Impulse Response Kernel" to model the response of the Oxford desk filters. The math behind this process draws heavily on CPU resources and the size of this kernel (measured in samples) determines both the plug-in's delay and the accuracy of the modeling, especially when dealing with lower frequencies. To address these issues, the Oxford SuprEsser ships in three kernel sizes: Standard, High-Resolution and Low-Latency.

Depending on your audio buffer size, the delays can be exorbitant: In a 96kHz session using a 256 audio buffer size on the high-res version, Pro Tools HD reported a track delay of 12,200 samples, which went beyond its ability to compensate automatically. As far as live use goes, even the low-latency model yielded a delay in the region of 660 samples at 44.1 kHz and 256 audio buffer size, which proved impractical for tracking or monitoring signals directly from the mic. This is a shame, because Oxford SuprEsser delivers a host of fantastic sounding tools in a simple package that would be just as desirable to have at a venue as on record. All that said, this is an affordable, strong and highly specialized production tool with a scalable GUI that is a winner. III

Jason Scott Alexander is a producer/mixer/remixer in Ottawa, Canada.

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FEATURE STORY

Consoles Take Center Stage at PLASA
Maybe it's the economy, or simply a growing demand for smaller-footprint boards that consume less of those profitable spots in the prime main floor spots, but the hot console debuts in London at this week's PLASA show fit that category precisely. All featuring power and versatility in compact frames, the new entries in this market are the DiGiCo S18, Micas PRO6 and Soundcraft's S13.

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Image Line FL Studio XXL Version 8

PC-Based Sequencer With a Fresh Spin

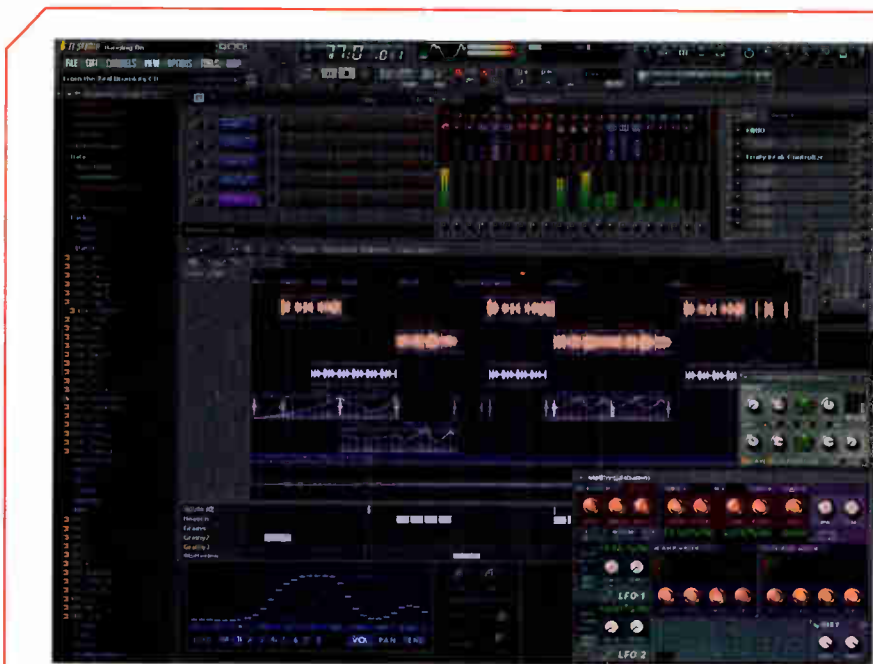
In fast-paced music production environments, workflow is everything. Most pop music comprises repeating multitrack patterns, so a DAW that's optimized to assemble complete arrangements quickly by inserting patterns with a pencil tool is worth a serious look. Among its other claims to fame, FL Studio Version 8 is a pattern monster. Patterns aren't the whole story, though. FL Studio also has built-in effects and synths, smooth automation and powerful editing. In a number of areas, it offers design innovations found in no other software. The lifetime free upgrade policy is another enticement.

FL Studio comes in several versions. The XXL Edition, reviewed here, has a jaw-dropping array of features and amenities, including a massive sample library and a fully functional version of the modular SynthMaker virtual instrument. This PC-based app can operate as either a ReWire host or client, and as a VSTi host or plug-in.

First Look

Although FL Studio uses many Windows conventions, its look and feel are not Windows-standard. The interface is window-intensive and often becomes rather cluttered. There are no memory buffers for saving various window layouts, but the five most often-used windows open and close via Function keys.

Users who are accustomed to working in a standard DAW, where each track in a song arrangement has a name and mute/solo buttons, may find FL Studio's Playlist odd. Its lanes have no names or controls, and different kinds of clips can be parked on the same lane. Muting and soloing are handled in the Step Sequencer window, where each Generator (sound source)



FL Studio's GUI, showing the browser, step sequencer, mixer, playlist and the EQUO morphing graphic EQ

has its own slot. Soloing an instrument is not handled well: When Solo is switched off, all Generators are unmuted, even ones that were muted before Solo was switched on.

The Tone Zone

My first-call synth in FL Studio is Sytrus, a six-operator FM module with three multimode filters, an additive waveform designer, onboard effects, and more LFOs and multisegment envelopes than you'll ever need. Sytrus' arpeggiator is built into the envelopes, so tasty one-finger grooves are also on tap.

Firing off one-shot samples is handled by FL's Sampler plug-in. Each sampler has its own filter and envelopes, and can do some interesting waveform distortion, including granular time-stretching. For multi-sampling, the tool of choice

is DirectWave. Its ADSR envelopes are simpler than those in Sampler, and it has fewer filter modes, but complex keymaps can be set up and edited graphically. DirectWave's large library is downloadable on an as-needed basis.

New in FL 8 is the Slicex plug-in for loops. Slicex can load raw audio or REX files, and export MIDI note triggers to a piano-roll window. An 8-channel Articulator within Slicex lets you set up envelopes and filters on a per-slice basis. Slicex can even load two loops at once into separate "decks" and crossfade between them.

Another big addition is a bundled version of OutSim SynthMaker. This is a fully modular synthesizer programming environment (not unlike Native Instruments' Reaktor). Connecting your own oscillators and filters and processing data with math modules will require some diving into the manual, but a number of SynthMaker instruments are available for download, both from the FL Studio Download Manager and from the OutSim Wiki.

PRODUCT SUMMARY

COMPANY: IMAGE LINE

WEB: www.flstudio.com

PRODUCT: FL Studio XXL 8

PRICE: XXL: \$299 download, \$399 boxed; Producer Edition: \$199 download

SYSTEM REQ: Windows only, Vista support

PROS: Built-in effects and synths, smooth automation and powerful editing. Innovative and unique design.

CONS: Window-intensive, often becomes cluttered. Not enough color contrast between the quarter-note regions.

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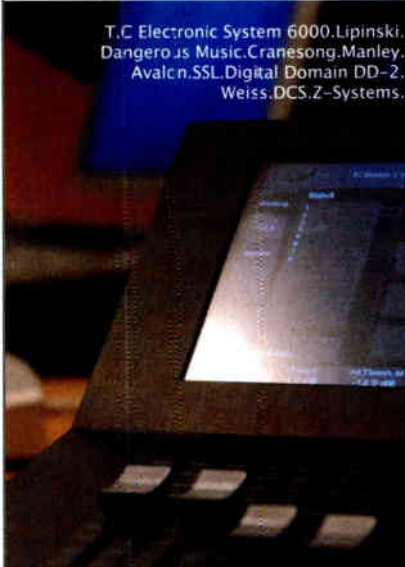
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Additive synthesis with vector envelopes is one of many options in the D.I.V. modular SynthMaker plug-in.

Older sound sources worth knowing about include BeepMap, which loads graphics files and uses them for additive synthesis. BeepMap is a poor-man's version of the technology in U&I Metasynth (a Mac-only program), and I've found it useful for pads and washes. Slayer is a physical modeled electric guitar with a movable pick-up, amp simulators and strumming options. (Check out the Online Extra audio clip at www.mixonline.com to hear both BeepMap and Slayer.) Wave Traveller is a sample player that lets you design your own scratches using envelopes for triggering from MIDI keys.

Tracking Audio

FL Studio lets you choose whether to record audio to RAM or a hard drive. The distinction may be largely academic. When recording to RAM, you arm an instance of the built-in Edison audio editor, and after recording you can send the audio to the playlist with a single menu command. If you're running low on CPU, you can pop Edison into a mixer channel and resample everything passing through that channel instantly.

You can record as many simultaneous tracks as you have hardware inputs, but FL Studio can only access one audio interface at a time. Loop recording of regions with auto-muting of previous loops is supported, but tape-style punch-ins are not.

Mixing It Up

FL Studio's 64-channel mixer can route any channel to any physical audio output—or to another channel for subgrouping/aux processing. Each channel has 3-band EQ, plug-in delay compensation and slots for eight inserts.

The effects rack has all of the usual suspects, including a vocoder (plus full VST and DX compatibility). For creative use of EQ, you won't find a more exotic plug-in than EQUO. This 31-band graphic EQ holds eight curves at a time, and you can morph smoothly among them. Each band also has its own pan and send sliders. The latter were ideal for dub-style band-limited echoes, and the ability to morph between bands opens up lots of possibilities.

The comp/limiter has single-band compression and limiting in series, plus a saturator, look-ahead and more.

Also included is a 3-band compressor with basic band frequency controls and a half-dozen parameters per band. For more exotic effects, the Fruity Love Philter has eight series/parallel multimode filters, each with envelopes and LFOs.

Almost anything in FL Studio—including the knobs in third-party plug-ins—can be automated. I recorded automation into a graphic contour window not unlike the controller strip beneath the piano-roll editor; you can also create a multisegment automation envelope in the Playlist window. Linking controls to external MIDI CC data is just as easy.

FL's automation data processing is more powerful than in any other DAW. Algebraic formulas can be used to massage up to three data inputs at a time. I've used this feature to invert and attenuate a modulation envelope when applying it to a second destination to create complex responses for hardware sliders and so on. An envelope follower plug-in can be inserted in any mixer channel and then used as a mod source, and a nonreal-time "LFO" lets you generate curves in the graphic controller window. Controller data can be embedded in individual patterns or run for the entire length of the song.

Harvest

FL Studio will appeal to musicians who work in heavily electronic styles. It wouldn't be my first choice for live tracking, but it's capable of handling vocals, guitars or acoustic drums. The new features in V. 8 are stellar. Download the demo and take it out for a spin. ■■■

Adam Kinsky is a writer/composer/technologist.



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MIXBOOKS

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TESTA FET

A Simple D.I.Y. for Sorting/Grading Field Effect Transistors

By the title of this month's column, you'd think I'd discovered a new *Star Wars* character, but really it's something I've been doing lately, and if it isn't obvious, it will be. The technical revolution has made dinosaurs of not only recording equipment, but also some critical components. There are many reasons why components become difficult to find, or worse, obsolete. All of this means that from low-noise, high-gain preamp parts to cheap-and-dirty effects ICs, keeping some of our quirky toys alive means scrounging for parts in unusual places.

Ironically, it's easier to buy vacuum tubes—and related paraphernalia—than it is to get certain '70s-era integrated circuits (ICs), Field Effect Transistors (FETs) and even plain-old transistors. This has many audio design engineers scrambling for suitable parts.

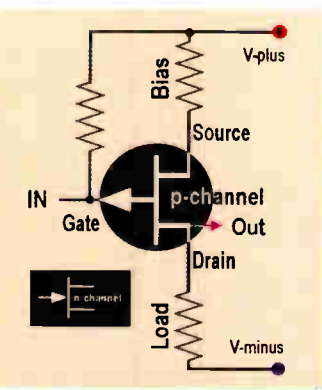


Figure 1: A P-channel JFET evaluation schematic. Polarity can easily be reversed to accommodate N-channel FETs.

used to make the classic tapeless echo/delay sounds.

Linear Systems (www.linearsystems.com) offers the LSK170, its version of a low noise, low-capacitance JFET amplifier (discontinued by Toshiba) that is the darling of the condenser microphone crowd.

The MCI Project

This leads me back to that cryptic column title: I just spent the past month sourcing FETs for three different products: an MCI Auto-Locator III, an ADR F760 compressor/limiter (built into the Raindirk console featured in the July 2008 "Tech's Files") and a mic preamp kit used in my electronics class. While a curve tracer is the ideal device for grading and matching semiconductors—transistors, FETs and even zener diodes—let's examine a method of sorting/grading FETs with basic test equipment.

Simple circuits require components with tighter tolerances, especially if you want identical performance from two or more channels. Cases in point are compressor/limiters like the Teletronix LA-2A and the UREI 1176, both of which rely on a "simple" voltage divider for gain

A New Niche

Just when you thought there was no hope for your '70s-vintage stomp boxes, Cool Audio (www.coolaudio.com) steps in to fill the void. The company makes a variety of application-specific devices (like converters and discrete transistors), yet two products that caught my eye were bucket brigade devices—analogue delay lines



Figure 2: The course visual test yielded the images in this table, showing the corresponding drain voltage ranges.

reduction. When these are used on mono sources, any idiosyncrasies can be cherished and embraced, but as soon as two channels of "anything" are strapped together, consistency becomes a necessity. The problem with replacing the key components in such signal processors is that their respective factory-replacement photo-resistors and FETs are prematched to an in-house reference. Sometimes, components like these are given proprietary part numbers that can't be cross-referenced.

Similarly, MCI tape machines and Auto-Locators use FET switches: non-mechanical, solid-state "relays" that turn circuits on/off in response to "remote" commands. Mechanical switch and relay contacts do "black and white" switching well, but over time they are prone to corrosion and eventually become unreliable and noisy. With electronic switching, the transition from on to off (and vice versa) can be made "gray," a soft transition that, in the worst case, makes a thump instead of a loud pop or snap.

The Sorting Hat

Figure 1 shows a simple schematic that was built on a solderless prototyping board to test a wide range of FETs. A sine wave is applied to each FET's input (gate) while monitoring the output (drain) via oscilloscope for the clipping threshold. Figure 2 shows four "windows" that represent the range of FET behavior. Fifty FETs of each type were tested, yielding a standard deviation bell curve, with most of the FETs falling within the middle range, with just a few on either side.

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For purely audio purposes, a simple circuit with no negative feedback (very similar to the eval circuit) yields a gentle overload characteristic. Visual pre-testing is the easiest way to ensure that each preamp behaves in a similar manner. FETs that don't make the grade can be made to work by tweaking the resistor values, especially the bias (source) and load (drain) resistors.

When a control voltage is added to the FET switching and stereo gain-reduction equation, more precise tolerances are required to ensure the identical response from each device. To refine the sorting process, the oscillator was turned off and a voltmeter attached at the junction of the drain and the load resistor, yielding the *numeric* results in the table shown in Fig. 2.

Finding Zero

As most auto-locators guide a tape transport toward the locate point, the wind speed is typically ramped down. The MCI A/L III uses FET switching to select a range of suitable speeds. Four of the five switching FETs are on a 16-pin Intersil 5011 IC that is no longer available. The fifth FET, a P1086, is similar to the 5011's characteristics; it's still available but is not easy to find. The Fairchild data sheet provided a clue—"sourced from process 88"—that led me to a readily available alternative, the J175. The obsolete 5011 was replaced by four matched FETs and four diodes built on a 16-pin DIP header. The fifth matched FET replaced one on the circuit board.

After projects like this, my workbenches are always a mess. Now a new sorting process begins: Transferring several paper charts stuffed with FETs

AUDIO SCIENCE

Active = Amplification

Active devices can amplify—such as vacuum tubes, transistors, etc.—while passive devices—resistors, capacitors and inductors—can only manipulate the signal (divide, affect frequency response, block DC, etc.). The amount and quality of amplification is pre-determined by design and confirmed in post-production by testing.

When "plumbing" is the analogy, N-channel FETs (the solid-state equivalent of vacuum tubes) have three parts. The gate (grid) is the "valve" that controls the amount of water/current that flows through the source (cathode) and the drain (plate). You can think of the drain's load resistor as a bungee cord hooked into the ceiling (the power source). The amount of "strength" a FET needs to pull the bungee down toward ground is being measured. In an audio circuit, this "biasing" process optimizes the FET to pull the "bungee" halfway down so that the signal can symmetrically swing as high up as down.

—Eddie Ciletti

into drawers without them being "de-graded." And that's the easy part! III

Eddie thanks Steve Sadler for the MCI tip and Dave Meyers for suggesting Nelson-Pass' www.passDIY.com site with accompanying power MOSFET tutorial.

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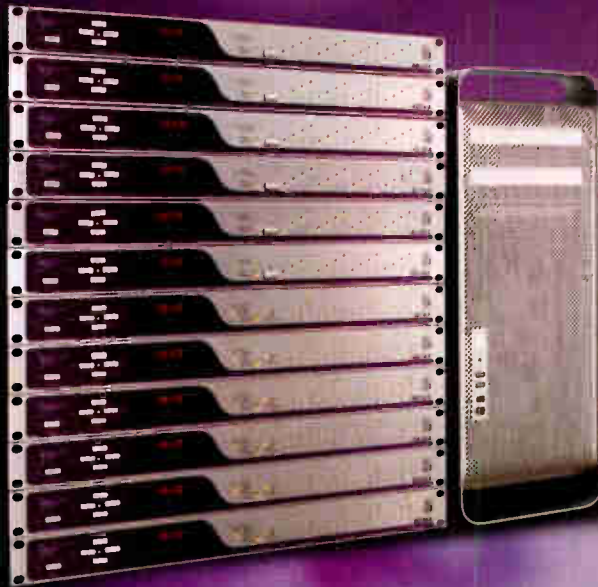
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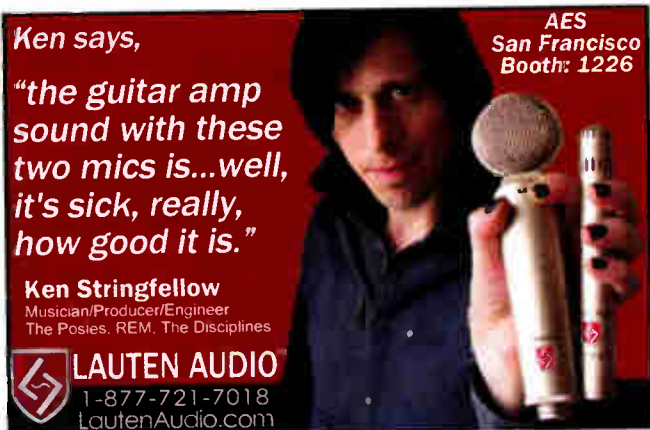
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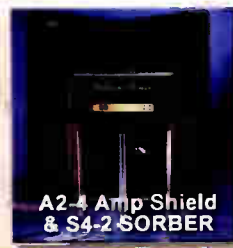
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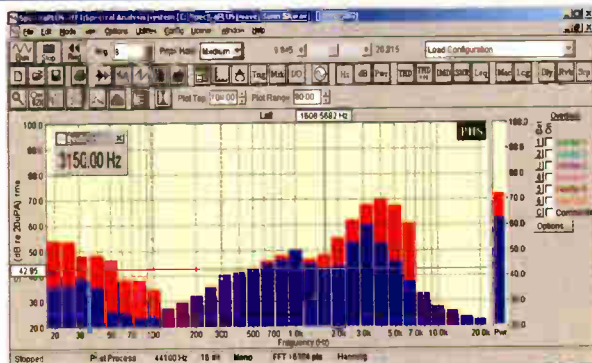
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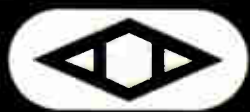


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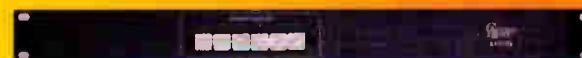


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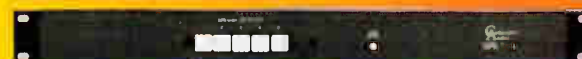


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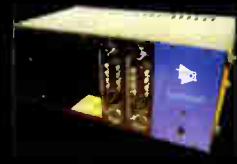
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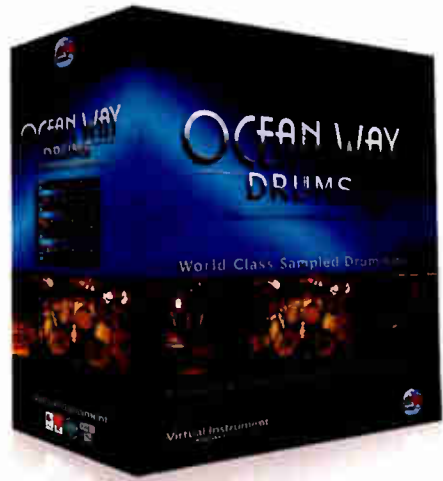
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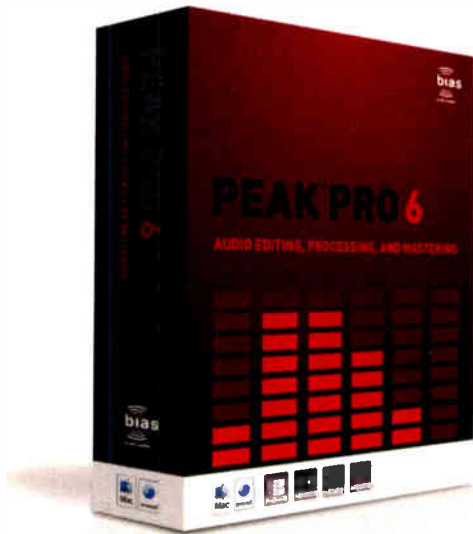
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Ray Benson

The Asleep at the Wheel frontman, and this year's Les Paul Award recipient, uses generations of technology to create timeless music.

What does the Les Paul Award mean for you?

I play guitar, produce records, built a studio, run a studio. So Les Paul, to a guitar player who's also a studio nerd, is one of our heroes. I've won nine Grammy Awards, which is very nice, but this is the core of what I do. I'm honored.

Tell us about your early recording experiences and influences.

I started Asleep at the Wheel in 1969 and I was a tech-phobe. I remember walking into my first studio, and it was a 2-track and I was overwhelmed by it. I'd been a performer since I was 9 years old, so I'd always been onstage but recording was a mystery to me. But I was in love with the 78 rpm records that I had collected and I realized that if I was to be successful in translating my ideas to tape, I'd better learn about the technology. So I went as retro as I could get. I started out wanting to know, "How did they do this back in the '20s and '30s?" We made many cool experiments in the middle '70s of recording 2-track live and trying to emulate the recordings of the '20s and '30s because of their immediacy.

We made our first recordings in Nashville and worked with our first producer, Tommy Allsup. Tommy had started out as a guitar player in Western swing bands and later joined Buddy Holly as his guitar player, but then went on to produce records for Liberty. Tommy really taught me the basics: what you do, who you need, how you need a great engineer and a great studio that fits the music you're doing.

Later, I worked with a great producer, Joel Dorn. Joel did Roberta Flack and all that Atlantic jazz, and we recorded in Bob Liffin's studio, Regent Sound. I learned a lot from him and an engineer named Vince McGarry about multi-tracking. I also must mention Norro Wilson. He

was a slick Nashville producer who they put us with because they said we were so funky we needed somebody slick. Well, Norro was slick but he understood us and let us be involved in the creative process.

The first project I ever produced myself was for Capitol. I worked with John Paladino and Hugh Davies. That was a live Asleep at the Wheel album in 1979. That's when they turned me loose.

As a producer, do you approach projects as a custodian of retro technology or music?

The music we play is retro. It's a technique and a feel—a way of playing.

When I produce other people, rarely do I produce other Western swing artists. I mean, there aren't really other Western swing artists! But whether I produce country, jazz, folk, blues, what I take to them all is that you can beat the life out of it if you don't watch it. I'm about capturing feeling without sacrificing technique and sound quality.

Is it important for modern producers and engineers to understand vintage methods?

Absolutely. The most important part is knowing how you get great sound, and everybody knows the mic technology of the '40s and '50s is the best there was. When I built Bismieux Studio [Austin], my goal was to make records sound like Patsy Cline records because they had sparkling top end and a smooth, big bottom, and I don't care how I get there. I use any tools I can. Some tools are retro, some of the tools are computers.

When is it most important to go retro?

It's important to go retro in the preamps and DIs—in tube and transistor technologies, and analog processing. And the microphones. All of those help digital sound better.

When I started getting into this stuff, I would go to radio stations to do interviews about my next record, and I would say, "You got a back room where you keep junk?" I would go back and grab a compressor or transformers or mic pre's—anything vintage that it looked like I could use. I would also get radio boards because they always had preamps in them. We got these RCA radio boards, and me and Bill Brooks took them apart and eventually we found what



to us is the Holy Grail, and it's certain circuits and certain transformers out of these old radio boards. We started building mic pre's, and they are the best-sounding mic pre's I've ever heard. My studio has over 30 channels of outboard mic pre's: Neve 1076s, Trident A Range, Brent Averill, an API board with original 512s. We put them up against ours, and ours have more top end and more low end.

How do you keep your studio afloat when so many are struggling?

I'm fortunate in that I had bought a building when prices were down, and I have tens of thousands of dollars' worth of gear that I got for nothing! The transformers that I used to pick up off the floor of radio stations now cost \$200 each on eBay. My LA-2A was free; the LA-4, free; three 1176s, free. And I work with a lot of manufacturers. For example, Alesis—we were one of the beta-testers for ADATs.

Which means you haven't incurred debt where a lot of studio owners have.

Exactly. I've spent plenty of money on gear, but there's a saying: If you pay retail, you're dead. And this is true, because the market is so soft and so competitive. I also work with AMD [Advanced Micro Devices] and they built us special computers to test out their new chips. That's what enables me to have a state-of-the-art computer, and when we marry it with transistors and tubes, we have a balance—the best of all worlds. ■■■

Barbara Schultz is Mix's copy chief.

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- **Bus powered** — via FireWire with no power supply needed. Includes power adaptor for stand-alone operation.
- **Plenty of I/O** — 2 mic/guitar inputs with preamps, 6 TRS analog ins, 10 TRS analog outs, S/PDIF & phones for a total of 10 inputs and 14 outputs.
- **On-board mixer with effects** — 10 input by 14 bus mixer with hardware DSP effects, including reverb, EQ and compression on every input and output.
- **CueMix FX software** — Advanced graphic control for on-board mixing and effects with tabbed design and precision peak/RMS metering.
- **Vintage compression** — Automatic Gain Control faithfully modeled after the legendary Teletronix® LA-2A® optical leveling amplifier.
- **British console EQ** — 7-band parametric EQ modeled after legendary British analog consoles.
- **Classic Reverb** — five room types and length up to 60 seconds.
- **Sample-accurate MIDI** — connect a MIDI controller and/or sound module with no separate interface needed. MIDI I/O is sample-accurate with supporting software.
- **SMPTE time code sync** — resolve to or generate time code via any analog in/out with no extra synchronizer.
- **Stand-alone operation** — a complete mixer with effects. Adjust any setting quickly with intuitive LCD menus.
- **Drivers for Mac and Windows** — Works with all of your favorite software.

UltraLite mk3

Compact FireWire audio interface with on-board effects and mixing

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