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**VOTER'S
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INSIDE!**

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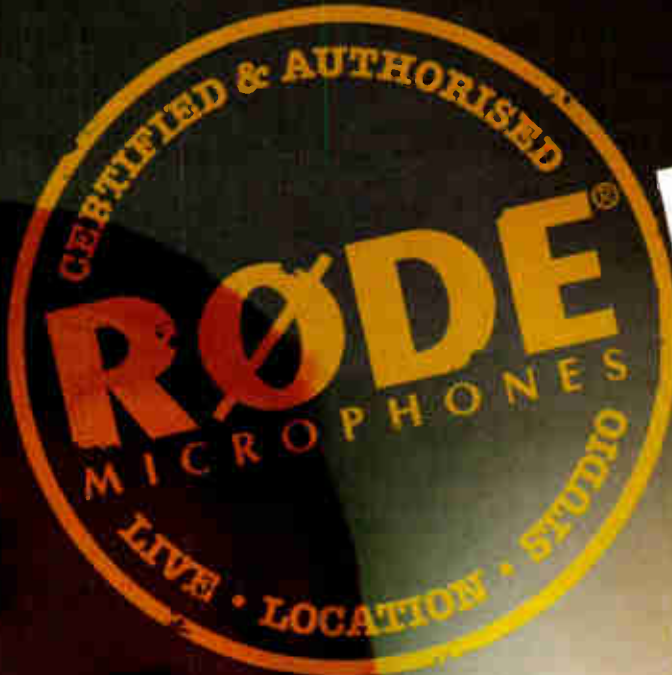


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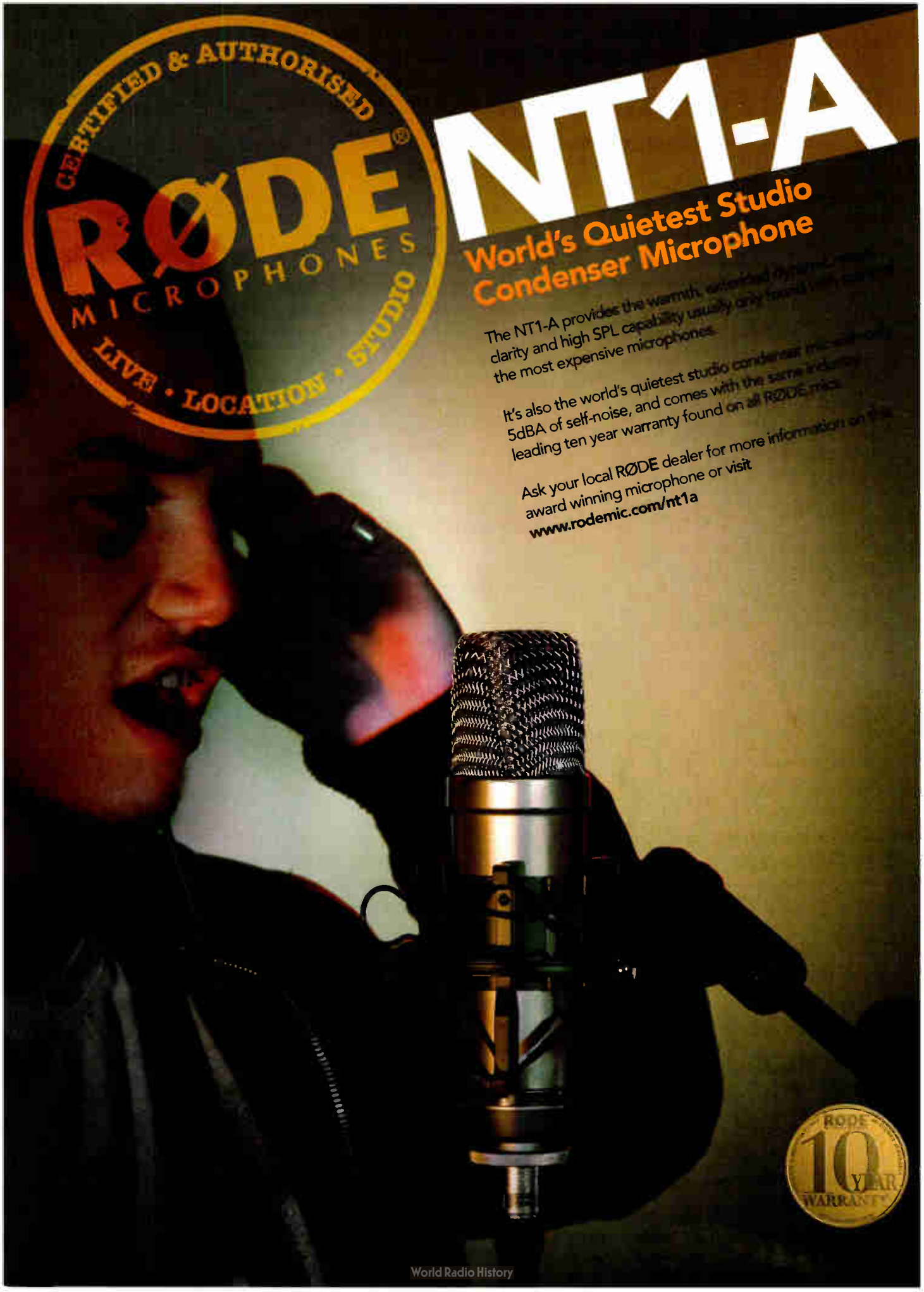
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MIX

PROFESSIONAL AUDIO AND MUSIC PRODUCTION
AUGUST 2008, VOLUME 32, NUMBER 9

feature

28 Mixing Outside the Lines

With the encouragement and willingness of adventurous-minded recording artists, engineers can take recorded tracks to new heights with sonic experimentation during the mix. Four busy mix engineers who work in indie rock, pop, hip-hop and avant-garde circles reveal their surprising mix techniques.

32 Hybrid Console/Controllers

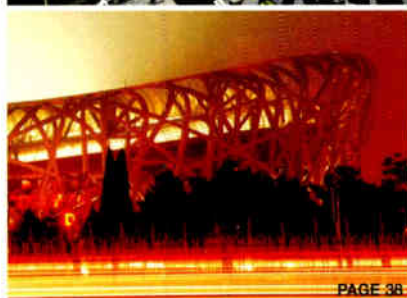
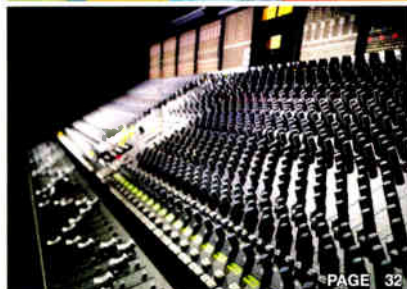
In this age of the maturing DAW, a number of manufacturers are addressing engineers' evolving workflow and ergonomic needs with a new breed of digital devices. Hybrid console/controllers merge the functions of large analog mixing consoles with DAW control surfaces to give engineers more immediate access to controls that save them time and space.

38 Olympics Audio

As the Summer 2008 Olympic Games in Beijing get underway and beam into living rooms nationwide, *Mix* goes behind the scenes at NBC Universal to bring you the story behind the network's intense audio production effort. NBC Universal's principal engineer and NBC Olympics' lead sound designer detail how the network is addressing the event's specific coverage challenges, both at the Games and in its Broadcast Operations Center at 30 Rock in New York City.

49 TEC Awards Voter's Guide

This year's ceremony takes place on October 3 in San Francisco at the Westin St. Francis Hotel, where renowned producer/performer/songwriter T Bone Burnett will be inducted into the TEC Hall of Fame. Turn to the voter's guide for a list of this year's Technical and Creative Achievement nominees.



On the Cover: The Kronos Quartet were captured in-session on the Scoring Stage at famed Skywalker Sound (Marin County, Calif.), where director of scoring and music recording Leslie Ann Jones welcomes a wide range of music and sound-for-picture clients. **Photo:** Steve Jennings

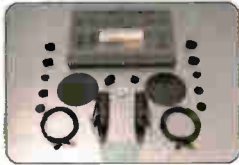


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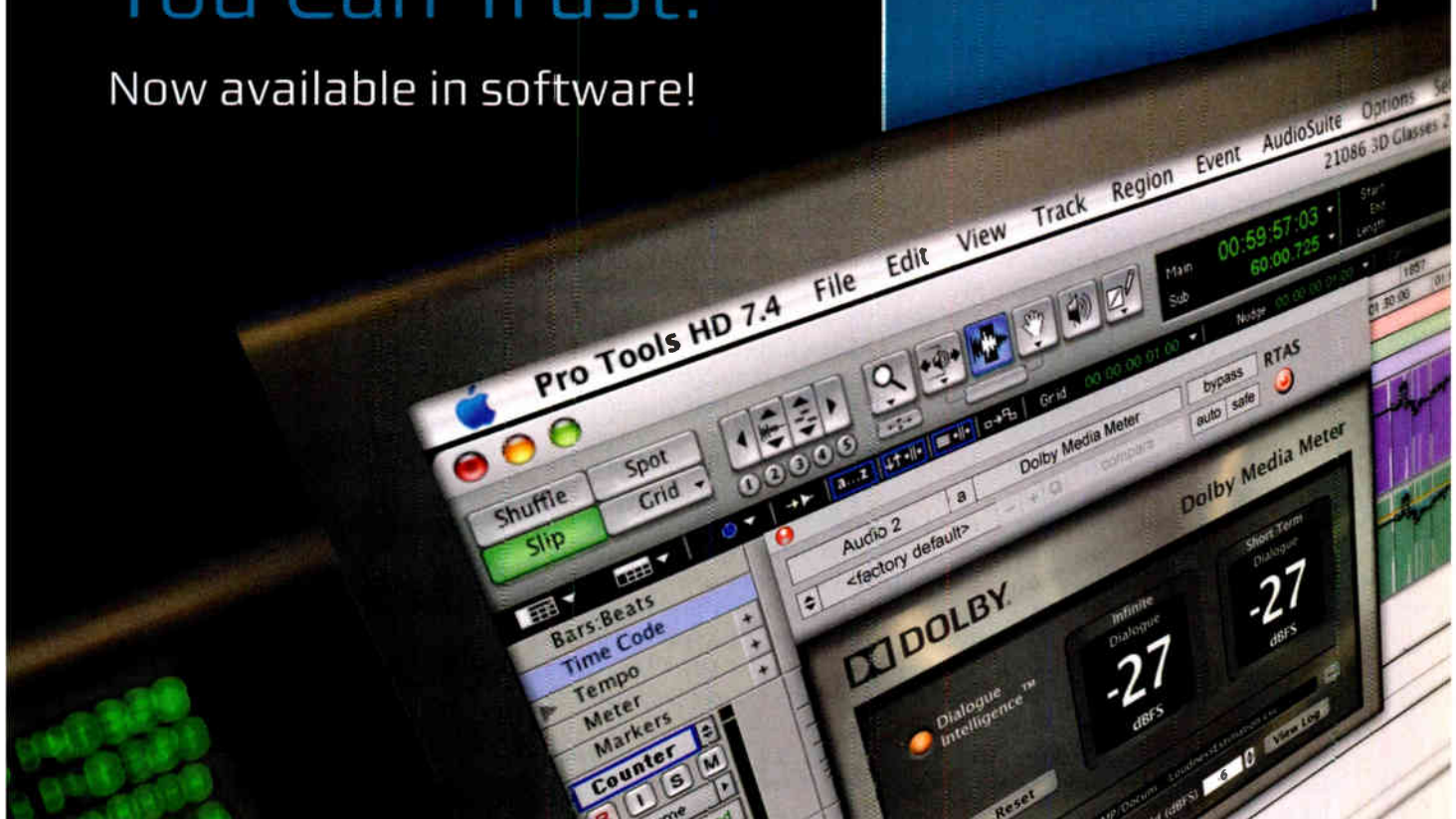
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The Sound of Music

Bruce Swedien has engineered for Count Basie and Michael Jackson, Herbie Hancock and J Lo. When he speaks to students, he often will ask how they learn critical listening, what a good mix should sound like. Inevitably, a student will raise a hand, and say, "I listen over and over to the records I like." After a dramatic pause, Bruce will reply, "That's the worst thing you could do," followed by another dramatic pause and a shocked look on the student's face. "The best thing you can do is go listen to music," Bruce adds. "Go listen to an orchestra in a good acoustic space. Go listen to a band in a club that you know. Learn how the instrument is supposed to sound. Then listen for how it balances with the rest of the pieces." His point? Rather than focusing on the work of others, engineers must, first and foremost, understand music.

This is the intangible quality that defines an engineer's signature "sound." One mixer may be noted for raw, edgy guitars; another for gorgeous vocals. But it's not as easily definable as that. We've said it many times in these pages: The best engineers understand music. And they know, in turn, what that music needs from them. A Madonna remix requires a different approach from, say, Diana Krall. And good engineers know that in deciding what to bring to a track, the decision *not* to add something is also a choice.

Advances in technology make engineering easier, but that's not the issue here—very personal mixes can be made with one mic and a 4-track. At our recent Mix Nashville event, in a panel called "Making the Mix Personal," engineer Bil VornDICK likened the console to his "instrument," explaining that he doesn't think much about *how* he gets his sounds, but rather reacted to instincts, grabbing EQs and faders as he feels the mix evolve. George Massenburg added that he saw working the board as the mix engineer's equivalent of a guitar player grabbing his favorite Strat or Tele to nail the right tone.

There are forces at work against the producer/engineer, from pressure to "make what sells" in a world of generic-sounding music, to shrunken budgets and compressed schedules leaving little room to push the creative envelope. Still, an engineer will always face limitations, and good engineers make the mix work, no matter what.

Of course, working with inventive artists helps. In our feature "Mixing Outside the Lines" (page 38), we uncover some truly imaginative techniques from engineer/producers who build sonic landscapes for the likes of Björk, Interpol and Mates of State.

But there's room for originality in pop, too, as we learn from our "Recording Note" on Phantom Planet, who prove that there's life beyond *The OC*. Sometimes, the real inventiveness lies in the overarching approach; for the Miles Davis tribute *Miles From India* (page 94), producer Bob Belden captured Indian and American musicians many months and thousands of miles apart, and wove their tracks together into a seamless work that perfectly melds two worlds.

The common thread binding these projects (and any great recording) is recognizing that the music is king. So check out some local bands. Go to the opera. Pick up your guitar. Get back in touch with the music. And always remember, if you don't understand the music, then you're just mixing sounds.

Sarah Jones

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Letters to Mix



DOES EQ MEASURE UP?

As an acoustician who specializes in small rooms, Bob Hodas' article ("Room Tuning in the Box") and Michael Cooper's roundup of auto-EQ speakers ("Intelligent Studio Monitors") in the June 2008 issue were interesting and enlightening. But I feel the limitations of room EQ were glossed over, putting a positive spin on a technology that does not work as well as the vendors would have us believe.

In my experience, one or more deep bass nulls are the most common problem in domestic-sized mix rooms and are often caused by reflections off the wall behind the mix position. Peaks in a room are usually 6 to 8 dB or less, but nulls can be 30 dB or even worse. Such deep nulls are common and responsible for mixes that sound good in your control room, but sound bassy and boomy elsewhere. Nor can EQ reduce modal ringing, which is at least as damaging as the peaks and nulls. Yet reading the breathless claims for room EQ products, you'd think they can flatten the response and eliminate ringing, and do so for multiple locations in a room.

I'm not opposed to all uses of room EQ. In my living room system, I use the 1-band, cut-only EQ built into my SVS subwoofer to reduce a 40Hz mode by 3 dB. Bass traps are not very effective at such low frequencies, so in that case EQ can be a reasonable Band-Aid. But it's still a Band-Aid. In small rooms, EQ is inappropriate at frequencies higher than about 50 or 60 Hz, and is never a substitute for proper acoustic solutions.

Ethan Winer
RealTraps

Ethan,
First of all, my article was not a product review, but a survey of available products and the technologies behind them. While equalization to correct response at the mix position will likely worsen the response elsewhere in the room, this

is of little concern to proponents of room EQ. I would rather have one trustworthy spot in the room—my mix position—than have no place in the room I can trust. For people who mix alone, this is a non-issue.

When applied correctly, room EQ does reduce the severity of room modes and can improve the accuracy of a monitoring chain. You are a proponent of that, as evidenced by your use of corrective EQ in the living room system.

We both agree that EQ is never a substitute for proper acoustic treatment. However, bass traps also have limitations. In my room, the traps decreased the amplitude of room modes by only a couple dB, yet also broadened their Q, greatly improving the overall response. It was the combination of acoustic materials and corrective equalization, however, that finally made the room sound great. —Michael Cooper

THE PERCEPTION QUESTION

Your recent articles on sampling rates and self-aligning monitors raise the same interesting question regarding human perception: To what degree are our perceptions of sound influenced by our own preconceptions?

In a recent study, wine experts were asked to taste two wines—one labeled as costing \$5; the other \$100. All of these pros described the superiority of the \$100 wine in glowing detail, despite the fact that both glasses contained the same \$5 beverage. And all of us may be prone to making this same error in judging audio equipment.

The problem with self-aligning monitors? The processing algorithms tend to be proprietary and invisible, so you don't really know what's happening to the sound unless you undertake direct measurement, as Bob Hodas did. And if you don't know what's being done to the signal, beware! The manufacturers of self-aligning monitors should provide a SIM or RTA display so their processing is made apparent.

Any compensated signal should best be used as one of many playback references and should not necessarily be trusted to be absolutely perfect. Our attitudes toward the equipment will inevitably affect our opinions, and unknown compensation schemes should be fully understood before being added to the mix.

Tony Eldon

TALKBACK

Because our June 2008 issue focused on studio design and acoustics, we asked, "Whether a project studio or a full-blown multiroom facility, what was the most artistic place in which you recorded and why?"

One of the best studios I've ever worked in is Nebula Zone Recording [Fox Chase, Penn.]. This place has that magic feel all artists need to create the best they can, in the same vein as an Abbey Road or Electric Ladyland. As a producer and artist, it is and will always be my Mecca.

Thinman

GK Labs Mastering [Gainesville, Fla.] is one of the most impressive places I have ever mixed and mastered in. The room features dimensions where the height, width and length of the room are based on a triad of the Golden Ratio. This room lets us mix and master for extended periods of time with less ear fatigue than I have experienced with other rooms.

Curtis Howard

It would have to be Swing House [Hollywood]. Their dedication to the creative process and the overall quality of the facility are unmatched.

David Klein

The most "artistic" place I record is right in front of my DAW with a full set of Marshall stacks off to the side, but using a set of Beyer DT880 headphones, which are partially open. This lets me hear the "band" in the 'phones while still hearing—and feeling—the stacks. I definitely play differently when I feel that amp pumping next to me. Having the amp head in a control room and the speaker cab located in a distant room doesn't feel artistic or real.

Joe Davis

The location is not what sets the artistic mood for me. If everyone's competent and in sync—working together toward making the best product—all of the other issues seem to work themselves out. I'll record in a rundown bus-terminal bathroom if the end result is a great recording. I just have to remember to wash my hands afterward!

Eric Carlson



TALKBACK

In the next issue, *Mix* checks in on what's new in the portable, handheld field recorder market. What's the coolest place—or thing—you've recorded while using one of these handy, on-the-go units? E-mail us at mixeditorial@mixonline.com.

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Skywalker Sound

By Blair Jackson

On a warm, late-June day, Skywalker Ranch, in the rustic wilds of West Marin County, Calif., is buzzing with activity. *Seventh Moon*, the latest film from director Eduardo Sanchez (of *Blair Witch Project* fame), has just wrapped post-production in the Technology Building and there is celebration in the air. Meanwhile at Skywalker Sound, the ranch's impressive recording studio in that same building, the Cypress String Quartet is busy cutting a new CD of early Beethoven music. On the beautiful, cavernous Scoring Stage, the San Francisco-based foursome is comfortably ensconced in the same custom, German-made diffusers shown in our cover photo, which depicts an earlier session there with the Kronos Quartet, also regulars at Skywalker for many years.

With recent album work by Steve Miller, Warped Tour faves All-American Rejects and legendary Bay Area punk group Rancid in the studio's rearview mirror, and scoring sessions for the next installment of the mega-popular videogame *Gears of War* on the near horizon, Skywalker Sound appears to be thriving during a period that has seen steep downturns for many recording studios. Over lunch on the back porch of the ranch's white-clapboard Victorian mansion-style Main House, the studio's director of scoring and music recording (not to mention record producer and Grammy-winning engineer), Leslie Ann Jones, notes that it is exactly that sort of diversification that has kept her studio busy: film and game scores, major- and indie-label work, classical and rock music, local and national talent.

"With the way budgets have changed and with more people recording at home, there are some projects we've gotten in the past that we're not getting now," she acknowledges, "but we've been very fortunate to have other projects taking their place, whether it's bands that haven't worked here before or the videogame [scoring] work, which we're getting more and more of. What I've spent a lot of the past 11 years doing is getting people to understand that Skywalker is a place that anyone can come to and afford. I still get people saying, 'Oh, I thought only George Lucas [founder of Skywalker]

did his projects there.' Those questions never end, so part of my job is to be the ambassador to the studio. It helps that we get Grammy nominations and awards and there's a lot of visibility, but it's always going to be a challenge to get people to come up here, and I have to look for new ways—with my studio director hat on—to fill this space."

Certainly, the studio's reputation precedes it. Since it opened in 1987, Skywalker Sound has been one of the true jewels of the Bay Area recording community—a breathtakingly beautiful and serene getaway less than an hour from San Francisco, with a stunning main room perfect for everything from huge orchestras to chamber ensembles to rock bands, four iso rooms and a large, comfortable control room equipped with state-of-the-art gear: Neve 88R console; Pro Tools HD, two Studer 827 analog machines, and other analog and digital recording systems; a custom Allen Sides/Ocean Way main monitoring system; near-fields by B&W, Tannoy, M&K, Meyer Sound, ATC, Genelec and Yamaha; M&K surrounds; and a great selection of new and vintage mics and outboard gear.

Jones—whose storied career includes production stints at ABC and Capitol Studios in her native Los Angeles, The Automatt in San Francisco and Skywalker for the past 11 years—keeps up to date technologically by being a working engineer and producer herself, staying heavily involved with NARAS (she's a past chair of its Board of Trustees) and listening to the needs of her studio's diverse client list. "On the Scoring Stage, we were relatively late adopters of Pro Tools," she admits. "We opted for the [Euphonix] R1 instead because it was 48 channels at 96k, and at that time Pro Tools was not. So we were able to do some stellar projects on the R1. If you're in this business long enough, you tend to work on the newest and the best, but somehow some of them never quite make it



Skywalker's director of scoring and music recording, Leslie Ann Jones

PHOTO: STEVE JENNINGS

to the second generation, whether it's the 3M digital multitrack or the Mitsubishi X-800 Series or the R1. All were great and sounded fantastic; all not available now. When Pro Tools came out with HD and we could get 48 channels at 96k and, the most important thing, we could back up very easily, we finally went in that direction."

Keeping up has also meant having the latest generation of plug-ins available: "Absolutely! There are a lot of younger engineers who come in who are more comfortable using plug-ins [rather than analog outboard gear], so we have to have those available. Also, we get a lot of engineers who come in with our scoring clients where they're mixing things at the composer's house, and maybe [Audio Ease] Altiverb is all they've got there and they love it, so it doesn't matter that we have a [Lexicon] 960 and three 480s and the original 224. [Laughs] So that end of it is always changing, but getting people in the door still involves networking, repeat customers, word-of-mouth, publicity and good service."

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Blair Jackson is Mix's senior editor.

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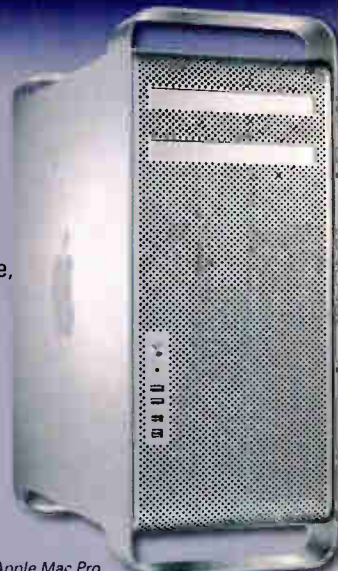
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THE AUDIO GOODS FROM TWO SHOWS TECHNOLOGY HIGHLIGHTS FROM INFOCOMM 2008

BY GEORGE PETERSEN

After years of planning and negotiations, the NSCA Expo finally merged with InfoComm, returning to Las Vegas in 2008 as a single event. And the combined-show concept proved popular with both convention-goers and manufacturers, resulting in a record-setting success: 34,600 attendees and nearly 1,000 exhibitors.

"InfoComm '08 reflects the fast pace of innovations and growth in the A/V communications industry," says InfoComm International's Randal A. Lemke. "We introduced new courses and exhibitors this year to address the demand for digital signage, audio and telepresence technology, as well as high-definition products, lighting and staging, and more. The NSCA Expo also was incorporated into our show for the first time, and we were pleased to debut the Electronic Systems Pavilion, along with the rest of the expo's traditional activities."

The show attracts A/V dealers, independent reps, design consultants, systems integrators, rental and staging companies and A/V buyers from business, government, education, health care, retail, entertainment and the worship market. In addition to a wide-ranging selection of classes, seminars, sessions and panels on business practices, trends and technologies, the show floor was packed, mostly with active pros checking out the latest gear.

As with NAB and other mixed A/V shows, a majority of InfoComm was devoted to visuals—video and display gear, from digital signage, videowalls and projectors to teleconferencing and touchscreens. However, those brave souls who made it to the back of the Las Vegas Convention Center's cavernous Central Hall were treated

to the Audio Pavilion, where more than 200 audio manufacturers filled booths and demo rooms with the latest toys for live sound applications.

CERTIFIED HITS

In addition to the rows of ceiling-speaker offerings (some very cool, such as JBL Professional's new 8100 Series), paging horns, intercoms and nurse-call systems, there were plenty of new audio products for SR pros. Listed alphabetically, here are our picks for the Top 10 *Mix* Certified Hits.

In one of those "why didn't I think of this first?" ideas, AKG (www.agg.com) unveiled the C 214, a lower-cost (cardioid-only) version of its venerable classic C 414 that delivers the same sonic performance as the multipattern C 414B-XLS. The ultralow-noise electronics spec is a clean 13 dBA (IEC 60268-4). SR pros will appreciate the C 214's road-tough construction, with a die-cast metal body, scratch-resistant finish, strong metal grille and integrated capsule suspension to minimize chassis-borne noise and resonances. Add in a switchable 160Hz (-6dB/octave) low-cut filter and -20dB pad for



AKG C 214

up to 156dB SPL handling, and the Austrian-made C 214 will surely be a popular addition on riders—especially at a \$649 retail, with spider-type shock-mount, windscreens and metal carry case. It's now shipping.

Analog consoles were alive and well, with APB-DynaSonics (www.apbdynasonics.com) unveiling its ProDesk-4, a 4-bus mixer derived from the company's top-end Spectra boards. It's available with 16, 24, 32, 40 or 48 mono mic/line input channels (plus four stereo line inputs) and features 4-band sweep-mid EQ, 20 to 400Hz variable highpass filters, six auxiliary sends, L/C/R/mono XLR outs, digital USB stereo input/record output and remote muting that can be linked to a fire-safety system. ProDesk-4's compact design keeps a 48-mono-input model to a footprint of just 63 inches. A redundant power supply is optional on all but the 16-channel version.

Astatic/CAD's (www.astatic.com) new boundary mics—available in tabletop (930VPL) and threaded button-styles (220VP)—caught me by surprise. Both contain hidden controls that allow the installer to select continuously variable polar patterns, from figure-8 through cardioid through omni, and anything in-between. The desktop 930VPL includes rear- and bottom-exit TB4M output connectors and an integrated membrane switch that can be set (using DIP switches) for push-to-talk/mute/on/off or to trigger remote functions via a logic circuit. Both mics also feature an RF-resistant design to reduce interference from two-way communication devices.

Speaking of mics, Audix (www.audixusa.com) showed an update to its Micros Series M1250 miniature condenser mic—which is less than two inches long, with electronics. With a 10 to 12dB hotter output, the new M1255 provides the extra "reach" that's ideal for distance miking, such as hanging overhead choir mics. Other features include a smooth 80 to 20k Hz response, a 12mm gold vapor-sputtered diaphragm and a low 21dB (A-weighted) noise floor. A wide array of clips and mounts are offered for instrument, podium and mic stand mounting. The M1255 retails at \$419 in a matte-black finish (white finish lists at \$439), and supplied accessories include a 25-foot cable, hanging mic clip, mic stand adapter, foam windscreens and storage pouch.

Electro-Voice (www.electrovoice.com) unveiled its line of Tour-X loud-

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speakers. The series comprises 12, 15 and twin-15 two-way top boxes, a dual-18 sub and 12/15-inch wedges. And there are a lot of minor, but well-thought-out, improvements, such as the new Ergo-Handles for easier transport; amazingly strong, arc-shaped protective front grilles; low-distortion, 500-watt SMX woofers; and offset front baffles combining acoustical driver alignment with space-saving slot porting and 36dB/octave passive crossovers.

Touted as a "Combined Media Fiber-Optic Transport System," the **FiberPlex** (www.fiberplex.com) **LightViper Shadow** system goes well beyond the simple "fiber-optic snake" category. Designed for touring,

broadcast, fixed installs and remote recording, the system handles just about anything, from analog audio, MADI, intercom (RTS and Clearcom; 2- and 4-wire-compatible), Ethernet, RS-422/232/485 control, composite video, TTL data and—with optional component modules—DMX lighting, MIDI and other control protocols. The Shadow ranges from a compact two-rackspace unit with 16 remote mic preamps and can expand in a star topology to 256 bi-directional audio channels at speeds up to 192 kHz and full system redundancy.

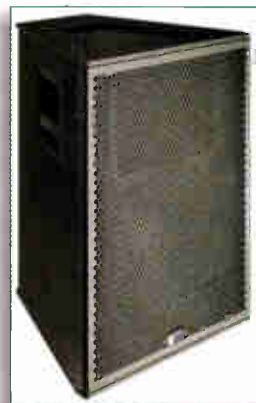
For more extensive system control, operators can use the Shadow's GUI software running on a laptop or desktop computer (PC or Mac OS) via an "SPSC" Ethernet link. Deliveries are slated to begin in Q3 2008.

Klein + Hummel's (www.klein-hummel.com) **IS Series** showed just how close live sound speakers can sound to studio monitors. The two-way **IS 122** has a 12-inch woofer and 1-inch compression driver; the three-way **IS 123** and **IS 153** combine a 12- or 15-inch LF with a coaxial horn fed by 1-inch and 2-inch drivers. All feature 18mm birch-ply construction, 12 M10 threaded rigging points and highly controlled Mathematically Modelled Dispersion; options include rotatable 80x50- or 50x40-degree horns, subwoofers and a choice of crossovers—passive, active external or self-powered—with analog or digital inputs. Networking is also possible using the company's **K8 Series** interfaces for analog, digital or EtherSound distribution over standard Cat-5 cable.

Responding to customer requests for small, high-power systems, **Meyer Sound** (www.meyersound.com) expanded its **UltraSeries** with the powered **UPQ-1P** wide-



Klein + Hummel IS 122



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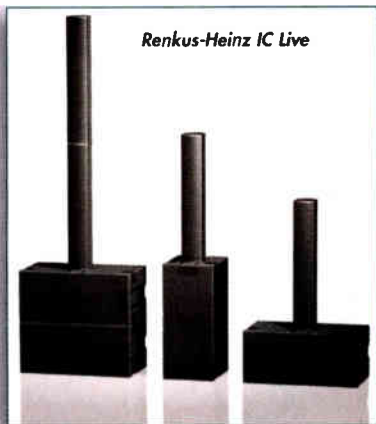
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coverage loudspeaker, delivering 136dB peak SPLs combined with low-distortion performance, uniform response throughout the wide coverage area and gentle high-frequency roll-off. The thick slab-aluminum end plates are threaded with M10 attachment points for optional QuickFly rigging hardware. In addition to the onboard Class-A/B/H MOSFET amplifiers (1,000W, LF; 275W, HF), active crossover, driver protection and frequency/phase-correction circuitry, the compact (19x28x18-inch), 105-pound UPQ-1P has a 15-inch neodymium woofer and 4-inch diaphragm compression driver on a 80x50-degree constant-Q horn for a 55 to 18k Hz frequency response. For additional sub-bass power, the UPQ-1P can be paired with Meyer's 600-HP and 700-HP subwoofers.

Interest in steerable arrays remains high. Renkus-Heinz (www.renkus-heinz.com) showed IC Live, which takes the company's second-generation Iconyx concept and applies it in a high-SPL package for portable applications. Each IC Live module has five neodymium 6.5-inch cone woofers and three neodymium compression drivers on waveguides.



Renkus-Heinz IC Live

Arrays can be stacked on the complementary ICL215S dual-15 subwoofers or flown using standard Aeroquip hardware. With standard Ethernet, the company's RHAON networking delivers audio signals via CobraNet, AES/EBU digital or analog inputs, with PC access for real-time system control and room-tuning functions such as parametric EQ filters, delay and dynamics—all with preset storage.

Tannoy (www.tannoy.com) launched its QFlex, a line of self-powered, digitally steerable loudspeaker arrays. The series is based on various combinations of 8- or 16-channel master and slave units, using combinations of up to 48 3- and/or 4-inch LF units and 1-inch tweeters, with individual 100W amplifier channels on each driver for full-range performance. Inputs can be analog or AES/EBU digital. The system also integrates

DSP control with Tannoy's Vnet networking and an intuitive GUI for system design/optimization.

We'll present more products from InfoComm on www.mixonline.com and in future issues of *Mix*. Meanwhile, InfoComm 2009 will be held at Orlando's Orange County Convention Center, June 17-19, 2009. See you there! ■

George Petersen is Mix's executive editor and runs a small record label at www.jenpet.com.

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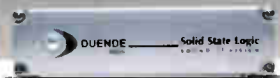
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Mixing Outside the Lines

CRAFTING UNIQUE SOUNDS WITH
TRIED-AND-TRUE TOOLS

By Janice Brown

It makes sense for engineers to reach for proven gear and techniques to address everyday mixing challenges. And with lower budgets forcing shorter production cycles and, ultimately, more no-nonsense mixing, it can be a challenge to find room for experimentation. But mixers who have the opportunity to work with experimentally inclined artists are pushed to find new ways to satisfy their clients' sonic curiosity. The engineer/producers we talked to for this article will let loose creatively when mixing a record if given the latitude.

BEYOND THE BOUNDARIES

Indie-rock bands come from far and wide to work with producer/engineer Peter Katis in his Bridgeport, Conn., Tarquin Studio. Often, Katis co-produces, records and mixes, as he's done for Interpol, The National, The Grates and Tokyo Police Club. Now more than ever, Katis enjoys the freedom bands give to indulge his creative instincts in the mixing process.

"Bands tend to come to me because

recorded sound like one I did record."

Katis will use parallel compression on drum tracks in his hybrid analog/digital mixing environment. "I'll bring all the drum tracks in Pro Tools up on my analog board and use subtle analog EQ and compression and then print it all back into the computer," Katis shares. "But I'll also print a bunch of extra tracks of parallel compression—nailing a kick, snare or everything—with a compressor and then print it to its own track and blend it in with the uncompressed sounds. I'll do that on every record, but vary the amount of crazy, aggressive drum sound when I'm doing the final balances."

Katis notes that the most radical changes he'll enact during the mixing stage lately will more likely be to add musical flourishes for texture rather than doing any extreme sound processing. "I'll suggest we add a bunch of additional guitar and keyboard parts in a section, and the band will be surprised at the suggestion, but then we'll do it and they'll be into it," says Katis. "It's a tricky thing to mix to the point where you feel you've done everything you can do with the tracks, sonically, and you know it's just about adding more, musically. And the musical additions tend to be subtle, but they add something that no amount of processing could."

Katis recently co-produced, recorded and mixed the new album by Scottish indie-rock band Frightened Rabbit whose sound—though suitably gritty and rough-around-the-edges—feels lush and filled-out on the record. "A lot of the record is pretty stripped down, but on some songs there's actually loads of low-key and ambient stuff going on," Katis describes. "During mixing on the song 'Backwards Walk,' for example, we added lots of cool little musical harmonies—little guitar swells and feedbacks and keyboard lines that ripple in and out."

Distortion tends to come in big on Katis records. "Usually, the more I can distort things the better," he says. "I am not as much a fan of compression as I am the distortion

that a cool compressor can bring. In addition to the parallel compression technique, where I blend certain overcompressed tracks, lately I'll overdrive the entire drum bus and you'd never know that it's distorted; it just sounds cooler. Drums love to be overdriven—you'll get all sorts of tone out of them that otherwise you're just not hearing." Even in the most modest treatments, Katis adds, the drum bus will go through a Neumann EQ and an API 2500 compressor.

When working on vocals, Katis looks for opportunities to blend interesting textures in by effecting the double or background vocals. "I just got this new preamp from No Toasters and it has this setting where you can overdrive it insanely; we used it on The Grates' album to record a lot of the doubles," Katis says. "I'd completely overdrive the double and then tuck it underneath the regular vocal, and it sounded awesome. At the end of a couple songs, you hear it full-on and it doesn't sound like a human voice—more like a Moog synthesizer."

SOUNDS OFF THE BEATEN PATH

Working with the pop avant-garde, including Björk, Mum, Camille and Coco Rosie, crafting the experimental-classical movements of rising-star composer Nico Muhly and producing electronic music of his own, Icelandic producer/engineer/programmer Valgeir Sigurdsson engages in highly creative engineering. Two recent records—Camille's *Music Hole* and Muhly's *Mother Tongue*—illustrate Sigurdsson's imaginative style and technical prowess.

Sigurdsson was the ideal engineer for the avant-acapella style of French pop chanteuse Camille. "I've done a lot of experimenting with human voices, beat percussion and vocal layers—since Björk's *Mechthilla* album—so Camille and her producer insisted I do all the recording and mixing on *Music Hole*. I was kind of like their sound advisor," says Sigurdsson. "It was composed with limited sources—vocals, body percussion, beat-boxing, sonic textures and piano—and so it was

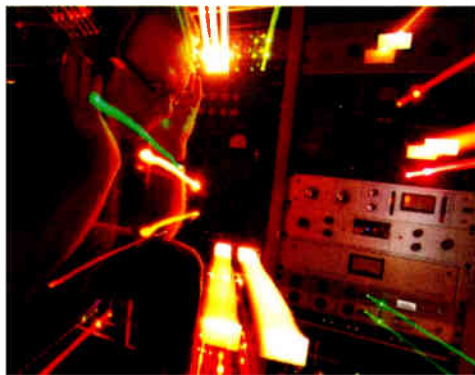


PHOTO: PAUL WATTS

Peter Katis in his sound laboratory

they like the sound of records I've done and they want me to do 'that' to their record," says Katis. "For example, I tend to go for a heavy, muscular drum sound, even in gentler music. A lot of times in the mixing stage, I can make a drum kit I haven't



a very creative recording role because they trusted me to make decisions on how we should create a lot of the sounds.”

While he recorded Camille in France, Sigurdsson mixed *Music Hole* back at his Greenhouse Studio in Reykjavik on his integrated SSL AWS 900 and Pro Tools HD3 system. “It was a complicated album and called for some creative solutions,” he says. “For example, some of the vocals are in French and some are in English, and we wanted to find a way to make them different soni-



Valgeir Sigurdsson in Greenhouse Studios

cally, too. According to Camille, the French always want to hear lyrics clearly. So I ran the French vocals on the song ‘Canards Sauvages’ through an SPL Vitalizer, which made those French vocals stand out in a different way; they’re brighter and jump forward in the mix. This became a blueprint for the vocals on the rest of the album.”

On both the Camille and Muhly records, Sigurdsson weaves countless elements together in a mix where nothing gets lost, where every part—from the most minimal to the lushest soundscapes—feels present and essential. “I think mainly, when there are many elements but everything seems very clear and present, it has a lot to do with my EQs,” he says. “I use the SSL EQs on the AWS 900 all the time. My rack of Neves [1073s and

1084s] and my API 550B are also really important.” He also uses reverbs to create space in the mix. “I find it very useful, especially with albums that are tracked layer by layer, to ‘glue’ the elements together with different reverbs and sometimes delays. My reverb of choice is usually the Eventide Reverb plugin; I typically have a few sends set up with various reverb types and lengths.”

Mothertongue, particularly for the scale of its composition, posed unique mixing challenges. Muhly composed *Mothertongue* in three 15 to 20-minute sections, which ultimately broke down on the record into three songs per section, plus a bonus track. The first section, called “Mothertongue Parts I-III,” changed the most in the mixing process, says Sigurdsson. “The final section of *Mothertongue* was never big enough when we were recording it; during mixing, I added another layer of bass and these monsters Nico asked me to create, which I made by processing the sound of crunching cereal. In another part of *Mothertongue*, we created an interesting texture with the sound of whale meat sloshing around in a bowl.”

Prior to buying the AWS 900, Sigurdsson says much of his mixing was done in-the-box. “I prefer to mix through an analog desk, but it was frustrating to be in two different places when you’re in the middle of the mix,” he says. “Going from Pro Tools to an analog console was like playing a piano and then having to stand up and strap on your guitar—pretty annoying when you had a flow going.” Sigurdsson calls his new set-up “hands-on” and “intuitive,” all-important qualities for facilitating endless creativity.

ENERGY OVERLOAD

Producer/engineer Alan Weatherhead has mixed records for Sparklehorse, The Comas, Camper Van Beethoven and Cracker, among numerous other indie bands that appreciate his naturally experimental style. The bands that hire Weatherhead to mix their records usually share this aesthetic: “The records

I’ll mix have usually been created with an experimental energy, and so they want to continue in that direction,” he notes. “So my job is to take it a little further in some cases, and in others figure out how I can subtract from what’s there to make it stronger.”

Weatherhead works in Sound of Music Studios in Richmond, Va., and his mixing arsenal is distinguished by his affinity for effects pedals, Amek 9098 channel strips and Distressors. He mixed the new record by A Camp, the New York City-based indie-rock band led by Nina Persson of The Cardigans, at Firehouse 12 Studios in New Haven, Conn. “The band gave me license to do whatever I wanted in mixing, basically,” says Weatherhead. “You never know what the outcome of some sonic experiment will be, and it’s part of my approach to try anything. First I get things in place, and then ask, ‘Texturally, what would make things more interesting?’”

Weatherhead mixed the A Camp record in Pro Tools, running most everything through Firehouse 12’s API Legacy console, and using both analog pedals and software effects to add dimension to their recorded sounds. “On one song, we ran this single note acoustic guitar part through Eventide’s H949 plug-in, basically bringing the guitar up an octave and adding reverb to it,” he recalls.



Alan Weatherhead at Sound of Music Studios

PHOTO: SHANNON WORELL

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"On its own, it sounds completely glitchy, almost not musical. But in the mix, having some of that underneath the guitar made it sound like a 12-string."

On vocals, Weatherhead used parallel compression and experimented with tape delay. "We'd record the tape delay and then line it up so it was actually in time with the vocal to give it a fatter, thicker sound." Backing vocals were run through a variety of filters. "I have a pedal made by Frostwave called the Resonator, and it's basically a clone of the filter section of an MS20 synth. And like the tape delays, a lot of times the vocal would be running through the Resonator and we'd be manipulating it as we were recording it. We used the Sherman Filterbank on a lot of stuff, particularly on drums." In general, Weatherhead adds, "What we're doing with all these filters is never the whole sound, but another layer, something else snuck in there for texture."

Mixing a record for singer/songwriter Nadine Khouri recently, Weatherhead used distortion as a creative solution to a less-than-ideal recording. "There's one song on her record that had a really heavy ending, but since they'd recorded basics for it on the same day they cut a few mellower songs and didn't change the drum sound for the heavier one, it didn't sound quite right," he explains. "So we put the snare drum through a distortion pedal and gated it, just made it sound super-crazy. Sometimes it's better to make a sound that's not working so well into something totally different rather than trying to be so literal about it."

BRINGING IN THE "LIVE" FEEL

After recording and mixing one of the coolest-sounding records of recent years—Gnarls Barkley's sleeper hit, *St. Elsewhere*—Atlanta-based producer/engineer Ben H. Allen popped up on the radar of bands everywhere. Allen describes the album as "futuristic and vintage," a sound that, from an engineering perspective, tied in naturally with his personal aesthetic. "I grew up listening to Motown records," Allen shares, "which to this day are my reference point for how music should sound."

No matter what kind of music he's engineering, Allen finds himself returning to techniques he can trace directly back to those records. "I'm doing a lot of things in mono these days, less stereo in terms of where things are sitting in the mix, especially with effects," he points out. "That spring and plate reverb used in those old Motown records was all mono, and it gives off this eerie quality but it's not super-wide and lush-sounding. So, if anything, my mono effects have

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Rusty Anderson Al Di Meola

become a bit of a trademark for me lately.”

While Allen's discography is decidedly urban—having engineered late-'90s New York City hip-hop and later helping to cultivate the Dirty South crunk movement—his work has attracted more rock bands lately, and most recently the über-experimental Brooklyn, N.Y., art-rock band Animal Collective. “They hired me to record and mix because they wanted really aggressive low end on their new album,” he says. “My background being in urban music, managing low end is one of the things I do really well.”

Just before hitting Chase Park Transduction Studios to mix the Animal Collective record, Allen describes the recording and premixing process: “To get the low end they wanted, we set up four different re-amping stations in the studio—using a Fender spring reverb, an Ampeg Portaflex bass amp, a little Gibson guitar amp and the huge QSC P.A. system they use for their live shows. They'd record things straight out of their samplers through the Neve 80 Series desk into Pro Tools and then we'd re-amp the kick drum, or the snare drum, or 20 snare drums, or bass synth parts through one of those stations, pick the sound we liked best and record that back into the computer.”



Ben H. Allen and Juno, the dog

PHOTO: WWW.ANGELPHOTOGRAPHY.COM

Putting up room mics and re-amping these low-end elements gives the band the “live” sound, as Allen explains. “We’re using that setup to create ambience that didn’t exist in the samples themselves, which makes them sound like a band playing in a room.”

Premixing in-the-box throughout the recording process allows Allen to begin dabbling with effects early. “As each part gets recorded, and often triple- or quadruple-tracked, I take all those mics and run them through an aux input in Pro Tools and effect it at that stage and get a balance,” he explains. “So once I open up the Pro Tools

sessions, the rough mixes are all balanced, and in mixing it becomes a question of what will be up front and what will go behind? Also, we’ve left it open enough so that we can make decisions on how much room—or dirt—we want on the sound, or how closed and tight we want it to feel.”

Going into the mix, Allen describes, “The whole vibe is to have this really tight and punchy low end, like a New York hip-hop record, and then this really washy Beach Boys-style vocal approach. We went and bought a bunch of spring reverbs and cheap reverbs on eBay that we’re going to use for vocals, a lot of which are triple- or quadruple-tracked.”

Allen will use his 32 channels of outputs to submix on the Sony MXP3036 console at Chase Park, and plans to use the studio's plate reverbs, as well as outboard and plug-in effects, including a recent discovery: Audio Ease's Speakerphone. “They’ve booked two weeks to mix 12 songs and they want to experiment as much as possible.”

[Eds. Note: Read an expanded version of this feature at www.mixonline.com.] ■

Janice Brown is a freelance writer based in New York City.

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Hybrid Console/Controllers



By John Murray Hill

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Because many pro studios use computer-based DAWs, operators are quickly seeing the benefits of total system control from their analog I/O devices. For greater workspace efficiency and workflow enhancement, hybrid console/controllers are proving to be increasingly popular. To address some obvious problems presented by separate hardware mixers and DAW control surfaces, ranging from size and price points to connectivity, many manufacturers now offer all-in-one solutions to meet professional needs.

WHY WOULDN'T YOU?

Hybrid console/controllers are becoming exponentially smaller and more efficient, and to an extent their feature sets are dictated by users' analog demands. Units range in size from those that are solely geared toward desktop editing/recording to ones as long as bowling alleys for full-scale orchestral recordings.

According to Solid State Logic's Dan Duffell, "SSL has been doing the hybrid controller/console thing for a long time—our entire console range features DAW control capability. Trying to describe how big one of our hybrid environments would be—if it were to-

tally analog—is extremely difficult. Just imagine a 512-fader console with mic pre, instrument, line-level, various digital inputs, EQ and dynamics, control surfaces, joysticks for 5.1 panning on every channel and surround processing tools."

These days, it's feasible to remain exactly in the listening sweet spot—even when making edits across hundreds of virtual channels. This technology is epitomized by Smart AV's Smart Console, which has been in production for four years now. "The key to this technology is in our optical touch sensor," says Smart AV CTO/chairman Joseph Narai, referencing a custom-made meter bridge that arcs over the Smart Console. "It allows you to make a mix much more efficient. Firstly, you can access out-of-reach channels. So, for example, if I want channel 63, on a traditional long console I would do that by moving my chair across the unit. But in this case, my finger becomes my chair: I simply touch channel 63, and all of the channels appear around it on the control surface."

Fairlight's Xynergi takes a completely different approach. Its controller can be used as a desktop editor alone or as a 12-fader sidecar that's

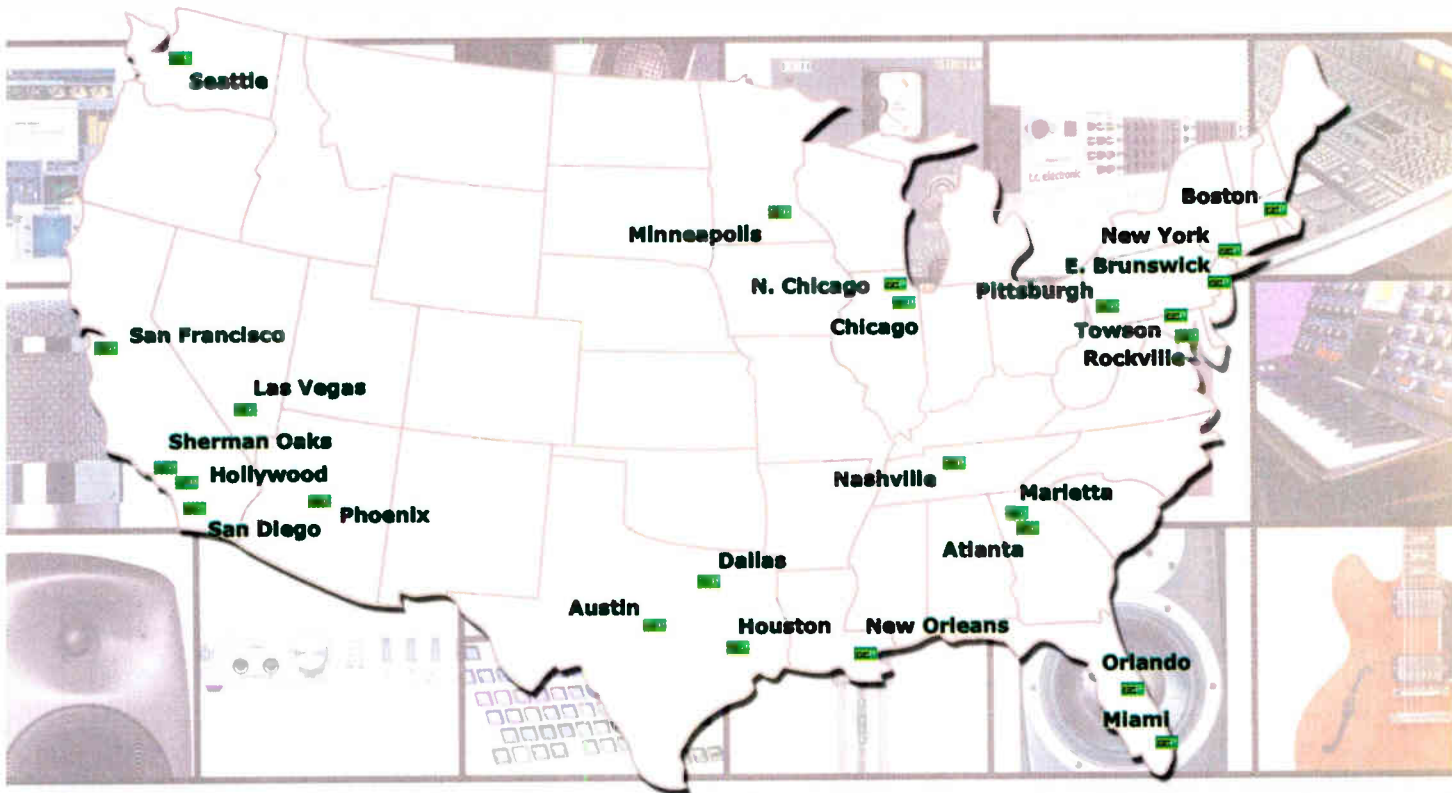
integrated into a larger system capable of providing 230 channels, 192 tracks and 72 buses. The desktop unit can also jump from functioning as a Fairlight platform controller to a keyboard controller for Digidesign Pro Tools, Ableton Live or other DAWs.

All of these console/controller technologies are easy to use, save time and space, and reduce a console's total number of controls by re-assigning them to cover many channels over virtual layers. While analog consoles have strong advantages in situations where an engineer requires or desires quick access to dedicated controls, they're more costly than their digital equivalents because surfaces that have one-knob-per-job cost significantly more to manufacture.

PICK A PROTOCOL

Before looking at hybrid console/controllers designed for various segments of the media industry, one must first understand how they interface with digital audio workstations. Software and hardware must be able to "speak" to one another via protocols. One of the most common, basic protocols is HUI (Human User Interface), an open technology jointly developed

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Current Models, At a Glance

Company/Website	Model	Price	Channel Inputs	Audio Outputs	Channels	Buses	DAW Controlled	Notes
Alesis, www.alesis.com	MasterControl	\$1,099	2 mic, 6 line, 18 digital, 26 simultaneous	6 analog, FireWire	26	N/A	HUI	Includes Cubase LE 4, Ableton Live Lite
AMS Neve, www.ams-neve.com	Genesys	From under \$50,000	16 to 128 ins mic/line, AES optional	8 groups into 2 main outs, with 5.1 monitoring, AES optional	16 to 64 physical chs. in a straight or articulated frame	8 aux, 8 group	Pro Tools, Logic, Nuendo, Pyramix	Recall sw. Neve 1084 EQ, VCA-style dynamics, moving faders (with Neve Encore)
AMS Neve	88D	Per config	1,000 ch at 96 kHz, MADI, AES/EBU	672 MADI I/O in single engine, MIOS I/O, choice of analog AES/EBU via MADI, 56 mono outs direct to Pro Tools HD	12, 24, 48 and 72 options	24, fully configurable/assignable	HUI over LAN control, Pro Tools, Pyramix, Nuendo, Logic	6 bank/4 layers equals 24 pages per strip, floating-point DSP plug-ins
Digidesign, www.digidesign.com	CJ24	\$9,995	16 mic/line, 160 simultaneous	8-ch (16 mono) 5.1 main control room, 160 simultaneous	24	128 (Pro Tools HD) or 32 (Pro Tools LE)	Pro Tools HD, LE	6-character, dual-row LED scribble strip
Digidesign	ICON D-Cum-Command ES	\$30,995	160 poss via Pro Tools HD analog/digital combo	Two 5.1 monitor outs, 160 simultaneous	8 phys. fader/ch strips upgradable to 24 via 16-ch modules	128 (Pro Tools HD)	Pro Tools HD	JLCooper surround panner for D-Command
Digidesign	ICON D-Control ES	\$66,995	160 poss via Pro Tools HD analog/digital combo	Two 7.1 monitor outs, 160 simultaneous	16 phys. fader/ch strips upgradable to 80 via 16-ch modules	128 (Pro Tools HD)	Pro Tools HD	40 plug-ins from Digidesign and third party, modular DSP, up to 54 chips dedicated to mixing and processing
Digidesign	003 Factory	\$2,995	8 analog/8 digital	8 analog/10 digital	8 bankable chs. of moving faders, rotary encoders and displays	32 (Pro Tools HD)	Pro Tools LE	Doesn't require Pro Tools interface for I/O
Euphonix, www.euphonix.com	S5 Fusion	Per config	MADI ins configurable, Remote pres optional	24 analog, MADI outs per cust. config	24 phys. faders; up to 150 DSP chs. and 48 phys. faders	Cust. config	EuCon control of Logic, Nuendo, Pyramix, Apogee Maestro, HUI	Simultaneous DSP and DAW ch. control
Euphonix	System 5-Hybrid	Per config	MADI ins configurable, Remote pres optional	24 analog, MADI outs per cust. config	Cust. config, 600 per core	Cust. config	EuCon control of Logic, Nuendo, Pyramix, Apogee Maestro, HUI	Simultaneous DSP and DAW ch. control
Fairlight, www.fairlightau.com	Xynergi MPC-96	Under \$25k	192 digital/analog	192 digital/analog	96	32, 8 sub buses, 12 aux sends (7.1), 24 mono multitrack	Fairlight, Pyxis Track, HUI	72-bit floating point, integrated SD or HD video, ded. processing per ch. strip
Fairlight	Xynergi MPC-144	Contact Fairlight for price	192 digital/analog	192 digital/analog	Up to 144	56, 8 sub, 12 aux sends (7.1), 24 mono multitrack	Fairlight, Pyxis Track, HUI	72-bit floating point, integrated SD or HD video, ded. processing per ch. strip
Fairlight	Xynergi MPC-144F (includes Fader Sidecar)	Contact Fairlight for price	192 digital/analog	192 digital/analog	Up to 144	56, 8 sub, 12 aux sends (7.1), 24 mono multitrack	Fairlight, Pyxis Track, HUI	72-bit floating point, integrated SD or HD video, built-in file exchange, ded. processing per ch. strip
Fairlight	Xynergi MPC-230F (includes Fader Sidecar)	Contact Fairlight for price	192 digital/analog	192 digital/analog	Up to 230	72, 8 sub, 12 aux sends (7.1), 24 mono multitrack	Fairlight, Pyxis Track, HUI	72-bit floating point, integrated SD or HD video, built-in file exchange, ded. processing per ch. strip
Fairlight	Constellation	From under \$85k	192 digital/analog	192 digital/analog	Up to 230	72, 8 sub, 12 aux sends (7.1), 24 mono multitrack	Fairlight, Pyxis Track, HUI	72-bit floating point, integrated SD or HD video, built-in file exchange, ded. processing per ch. strip
Fairlight	Anthem	Contact Fairlight for price	192 digital/analog	192 digital/analog	Up to 230	72, 8 sub, 12 aux sends (7.1), 24 mono multitrack	000	Vintage Split, Classic In-Line and Constellation Post modes, Integrated surround monitor matrix included
Mackie, www.mackie.com	Digital X Bus 200/400	\$12,995/TBA	Optional cards enable 8 analog I/O, AES/EBU, digital and FireWire	Optional cards enable 8 analog I/O, AES/EBU, digital and FireWire	64 (96 kHz), 32 (192 kHz)	8 mix	Major DAWs including Pro Tools, Logic, Cubase/Nuendo, Cakewalk, Digital Performer	Accepts UAD-1 DSP cards VST plug-ins
Merging Technologies, www.merging.com	Ramses MSC 8	From \$32,500	16 to 384 line/mic, opt. analog, MADI, AES-EBU, SDIF, TDIF, ADAT	16 to 384, with opt. analog, MADI, AES-EBU, SDIF, TDIF, ADAT	384	Up to 256 fully config.	Pyramix, VCube and HUI	Ch. count depends on sample rate from 44.1 to 384 kHz, includes DXD/DSD mode
Merging Technologies	Ramses MSC 16	From \$40,000	16 to 384 line/mic, opt. analog, MADI, AES-EBU, SDIF, TDIF, ADAT	16 to 384, with opt. analog, MADI, AES-EBU, SDIF, TDIF, ADAT	384	Up to 256 fully config.	Pyramix, VCube and HUI	Ch. count depends on sample rate from 44.1 to 384 kHz, includes DXD/DSD mode
Merging Technologies	Ramses MSC 24	From \$55,900	16 to 384 line/mic, opt. analog, MADI, AES-EBU, SDIF, TDIF, ADAT	16 to 384, with opt. analog, MADI, AES-EBU, SDIF, TDIF, ADAT	384	Up to 256 fully config. as sub, main, aux	Pyramix, VCube and HUI	Ch. count depends on sample rate from 44.1 to 384 kHz, includes DXD/DSD mode
Smart AV, www.smartav.net	Smart Console	\$30k to \$55k	Per customer config	Per customer config	24, 72 or 96	Per config	Pyramix, Fairlight, Logic, Pro	Engines avail. from Klotz, Merging, Fairlight, Yamaha
SSL, www.solid-state-logic.com	Matrix	\$25,995	16 mic/line ins, 4 stereo returns	Stereo monitoring, Stereo digital I/O (S/PDIF, AES/EBU)	16	Dual stereo mix buses w/summing inserts and reassign	Pro Tools, Logic, Nuendo, SONAR, Reason, Pyramix via HUI	Hybrid analog console/DAW controller, Routing matrix lets user select from up to 16 ext. hardware processors
SSL	Duality	Per config	48 to 96 mic/line	24 outs, 4 FX sends, 3 stereo mix buses that double as full 5.1 surr. bus.	48, 72 or 96	6 main mix	Pro Tools, Logic, Nuendo, SONAR, Reason, Pyramix via HUI	RJ-45 jack for 100baseT Ethernet connectivity, IP address
SSL	AWS 900+	Per config	24 line/mic, 4 FX returns	Two 5.1 mains, 2 stereo outs, zero-latency headphone out	24	8 console track bus assignment	Logic Audio, Nuendo, SONAR, Digital Performer, Pro Tools	Hybrid analog console/DAW controller, Routing matrix lets user select from up to 16 ext. hardware processors
SSL	C300 HD	Per config	32 to 512 mix inputs	Up to 512 mic/line at 48 kHz (256 ins and outs at 96 kHz), AES/EBU and MADI	16 to 96	80 mix	Logic Audio, Nuendo, SONAR, Digital Performer, Pro Tools	Direct (HUI) control of up to 4 DAWs simultaneously
SSL	C200 HD	Per config	Up to 512 mic/line I/O at 48 kHz (256 at 96 kHz), AES/EBU, digital and MADI	Up to 512 mic/line at 48 kHz (256 ins and outs at 96 kHz), AES/EBU and MADI	16 to 96	12 main for stereo/5.1 audio sub grips	Logic Audio, Nuendo, SONAR, Digital Performer, Pro Tools	Dual faders (large and small) per ch strip, Dedicated processing per ch strip
Tascam, www.tascam.com	DM-3200	\$3,799	16 mic/line, 24 TDIF, 8 ADAT, Expandable to FireWire, ADAT, AES/EBU, analog and TDIF	Main control room, 2 slots for expansion cards for additional analog or digital I/O	48	16	Pro Tools, Cubase, Nuendo, Logic, Cakewalk, SONAR, Digital Performer	Optional MU-1000 meter bridge; 2 built-in FX processors
Tascam	DM-4800	\$4,999	24 mic/line, 24 TDIF, 8 ADAT, Expandable to FireWire, ADAT, AES/EBU, analog, TDIF and surr. mon	Stereo, control room and studio monitor outs, 8 analog, 3 TDIF, ADAT, AES/EBU, S/PDIF, opt. card outs	64	24	Pro Tools, Cubase, Nuendo, Logic, Cakewalk, SONAR, Digital Performer	Optional MU-1000 meter bridge; 2 built-in FX processors
Yamaha, www.yamaha.com	DM2000V2	\$19,500	96	Analog, stereo, control room and monitor outputs; 8 balanced omni bus outputs, Up to 48 via I/O expansion cards, AES/EBU	96	8 buses, 12 aux sends	Nuendo, Pro Tools, Logic	Onboard iSP (Interactive Spatial Sound Processing)
Yamaha	DM1000V2	\$5,699	48 ins/24 analog, Expandable to ADAT, Tascam or AES/EBU	12 analog, expandable to ADAT, Tascam or AES/EBU	48	8 buses, 8 aux sends	Nuendo, Pro Tools, Logic	Comes with 4 FX processors and Version 2 software

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by Digidesign and Mackie in 1996 and supported by many companies, including SSL and Tascam. HUT's downside: It's based on aging MIDI technology.

Some of the newer console controller hybrids instead use patented, higher-grade protocols. Digidesign, for example, has abandoned its emulation of the Mackie HUI in favor of an Ethernet-based alternative. This "closed system"—a proprietary protocol capable of transmitting higher-resolution data—is exclusive to Digidesign. As an answer for those needing a more broad-based solution, Euphonix of-

fers its EuCon cross-platform protocol.

Unlike Digidesign's high-end console/controllers, all Euphonix EuCon products, including the S5 Fusion and System 5-MC, are compatible with Logic Pro, Nuendo, SONAR, Final Cut Pro, Vegas Pro, Digital Performer and Pyramix, as well as Pro Tools. Euphonix sales executive Luke Smith expands: "EuCon allows its partner-manufacturers the full bandwidth they need to fully integrate their software into our control surfaces. In addition, EuCon's universal appeal proves it to be a powerful tool for so many different users, regardless of their preferred DAW."



SSL Matrix

WHAT DO YOU NEED?

Selecting a hybrid console/controller will depend upon the type of work you do and what software you use, as well as the level of control you need. In trying to establish the factors to consider when buying one, we spoke to some high-end users.

"We have a Digidesign D-Command ICON system," says Alex Harris from the Gateway School of Recording in London. "But we still use a TL Audio 24-channel valve [tube] mixer as the front end because it gives a warmer, fuller sound. We are also looking at getting an SSL AWS 900+ hybrid console/controller, which has quality on-board preamps."

Harris is obviously looking to find the best balance between analog and digital. "By offering a tactile control surface, all of these systems save a huge amount of time and effort—and money—in terms of mixing," he says, "enabling the user to more comfortably interact with the sounds they are manipulating. We are, after all, analog creatures, with two hands and 10 digits. We work better with multiple, continuous controllers rather than just one nasty little mouse."

London's Wave Recording Studios is an all-digital audio post facility, working with major accounts such as Sony, Microsoft,



Tascam 3200

Levi's, Guinness and Audi. I talked to sound designer Joe Mount about his experience with the new breed of studio tools. "As far as film production goes, it's probably a

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case of speed," Mount explains. "You can move mixes around and reference old ones as quickly as possible. These new mixers—where everything is accessible out-of-the-box—appeal to Wave because they have added functionality and enable us to do what we've always wanted to with analog desks. Moving automation down a timeline on a soundtrack isn't half as easy as doing it on clips in your DAW."

Sitting on Mount's desk is a Fairlight Xynergi and a Euphonix MC5. "The Xynergi is very, very different to the MC5, and in turn the ICON is alien to the MC5, but essentially they are all doing the same thing," he adds. So in the face of Ethernet protocols, does Mount think MIDI-based ones like HUI may become redundant? "It's hard to say and depends on whether all the big players are making their own controllers," he replies. "The MC5 uses EuCon. It works nicely with the MC5, and its Nuendo functionality is seamless and superb. The protocol it uses is



Fairlight Xynergi

actually owned by its manufacturer, as opposed to a third party, which is nice to know when looking to buy an MC5."

Does Mount find it frustrating that companies such as Digidesign restrict their top controllers—like ICON—for use only with their own software? "It's not frustrating, but it's definitely something that factors in when making a decision whether to invest in the technology. If we were to switch systems, we wouldn't be able to use that controller anymore, as opposed to the MC5. Having said that, if EuCon doesn't catch on, Digidesign will still be making the same reputable hardware."

I ask Tim Vine-Lott, technical manager of AIR Studios—founded by Sir George Martin—for his opinion on the debate. "The Holy Grail is to have all your analog and digital needs catered for in a wholly integrated system," he says. "It may not need to be one single unit. There are a few manufacturers aiming to make that a reality. I think Euphonix is pretty much top of the field at the moment. Meanwhile, Digidesign has gone a new way through ICON and D-Control via a protocol they don't release

to the outside world. At the top end of the scale there are a number of users who don't think that's a particularly useful way of going about things. ICON and D-Command are not the best control surfaces in the world. You cannot, for example, record a film score with an 80-plus-piece orchestra on an assignable, layered digital surface. You need to be able to see every single thing, which is why we have a [Neve] 88R."

AIR Studios has a Neve DFC in Studio 3, which, according to Vine-Lott, is arguably the best film mixer available, providing a level of DAW control. "In a mix environment," Vine-Lott explains, "we're getting away from multiple users. Traditionally, for film mixing in dubbing theaters, you still do have music, dialog, effects and overall mixdowns handled by separate personnel. That's being shrunk down now, so you'll have one engineer that does music, dialog and effects and then bounces the whole thing up. That user wants something small, where everything's in reach from one seat, and this is where a small, assignable console comes into its own. But that's only at the mix stage. When recording on a large analog console, engineers know where everything is, so if something's wrong, they know exactly where to look. But if someone has to dive down three layers and four pages to get to a problem, they'll literally going to throw it out of the door, and that will be the end."

DECISIONS, DECISIONS

From what's been said, it's quite clear that there are some solid choices for studios looking to buy a hybrid console/controller—although it may not be the be-all, end-all. For instance, film scoring, recording studios and editing studios require different hardware solutions in terms of size, I/O, compatibility and configuration.

On page 34, we've compiled a list of hybrids that offer line or mic inputs, have a monitor section for speaker control/volume and the ability to control DAWs from their surfaces. To keep things focused, we did not include controller-only systems having no audio I/O capability, so products such as SSL's Matrix, Mackie's Control Universal Pro and the Euphonix MC Mix/MC Control are not included.

No matter what solution you're seeking, keep in mind that hybrid hardware is still in its infancy. New models are coming out at a feverish pace, and it should be relatively easy to find something that suits your needs. ■

John Murray Hill is a London-based journalist, DJ and electronic music producer.

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Olympics Audio

PREPARING FOR THE SUMMER GAMES AT NBC UNIVERSAL

By Blair Jackson

It goes without saying that televising the Olympics—winter or summer—is a mammoth undertaking, and the complexity of the job has only increased as more and more programming is offered not just on network TV, but also through cable and the Internet, as well as increasingly presented in HD and surround. For this month's games in Beijing, NBC Universal is promising more than 1,200 hours of coverage across its network and cable stations, plus another 3,500 hours of live streams, rebroadcasts and highlight packages through its www.nbcolympics.com Web hub.

That's a whole lot of video—and, of course, there has to be audio to go with it. To get an idea of some of the challenges of televising the games from an audio perspective, we contacted two longtime veterans of NBC's Olympic coverage, both of whom were busy making preparations for the early August launch of the Beijing Games: Jim Starzynski, principal engineer and audio architect of NBC Universal Advanced Engineering in New York (aka, "30 Rock" for its Rockefeller Plaza address), and Bob Dixon, director of sound design and communications for NBC Olympics, who is on the ground in China in charge of coordinating the audio coverage there. Dixon, who's been designing sound coverage for the Summer Games since 1988 (in Seoul), says it takes up to two years to design the audio end of the Olympics coverage, "and after you get there, you need to go to each site and adjust plans to fit reality. The planning required is huge and filled with detail."

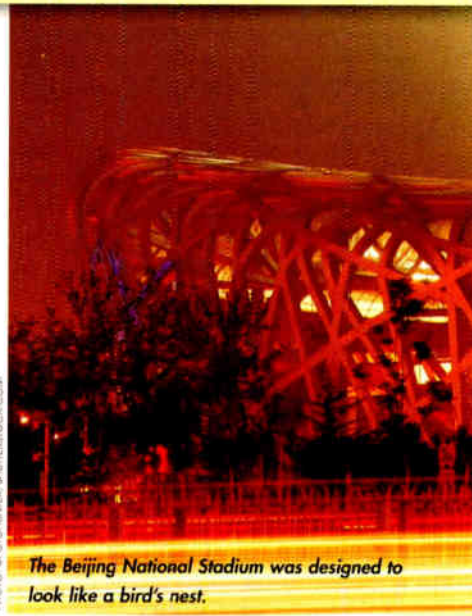
UPMIX/DOWNMIX

Asked whether anything he learned from working the Athens 2004 (summer) and Turin 2006 (winter) games affected the approach to the Beijing coverage, Dixon replies, "I was not happy with trying to make two channels sound like six. This

time, we will be able to transmit six discrete channels from each venue when it's live and send it directly to our 5.1-equipped home audiences, as long as their local stations are equipped to deal with 5.1; not all are. Now there are times when we have to upmix—for example, if something has been recorded and edited. Our infrastructure still has a lot of hardware that can't interface with 5.1 so we do a manual downmix to 2-channel at the same time we're doing our 5.1. We do it manually to tailor and preserve as much as possible the openness of the stereo. The more noncorrelated the 2-mix, the more an upmixer can do with it. This time, we're trying out the Linear Acoustic UpMax Neo for the upmix and that will happen as the piece gets played out to air.

"I've also concluded that microphones need to be delivering noncorrelated signals if you want an upmix to sound alive and spread out," he continues. "Any matrix upmixing device will deliver identical signals in the left and right channels to the center-channel output. That can very quickly become a pretty big lump of sound."

Meanwhile, on the New York end, Starzynski adds, "The Beijing games will be the first opportunity that we have to go with discrete audio distribution for the backhaul signal from the International Broadcast Center [IBC] in China to the Broadcast Operations Center [BOC] at 30 Rock in New York City. Our current plan is to use new transport-stream-encoding technology that accepts and encodes an HD-SDI [serial-digital interface] signal with video and data, and up to 12 channels of discrete embedded audio. The integrated receiver/decoder that is receiving the signal at the network in New York City hands off exactly the same HD-SDI signal for integration into plant distribution. This moves us from previous systems that used multiple devices to transport the video, data and multichannel audio, and stream-



The Beijing National Stadium was designed to look like a bird's nest.

lines what can otherwise be a complicated process."

GEARING UP ON-SITE

As for the on-site audio production for the multitude of Olympic events, Dixon notes, "We have seven sites with production facilities: athletics [track and field, ceremonies, gymnastics, aquatics [swimming and diving], beach volleyball, boxing, basketball and volleyball. All of these sites have digital audio consoles. Some venues get two when we have someone mixing sound effects and iso record mixes, and the other console does the main show mix. We also have five other locations where the audio mixing is on a much smaller scale. However, a 5.1 mix is available at every venue, so if it's live, it can go 'home' with discrete surround audio."

In the recent past, the Calrec Q2 has been the top-of-the-line on-site mixing console of choice, but for these games they've moved to a more compact Calrec Bluefin Omega because, "We can't have remote trucks here in China like we would normally," Dixon explains. "Those trucks have huge, beautiful consoles that let a sound mixer feel anything is possible, but the cost of transportation and paying for them while they're on the boat made it unfeasible. So we are using fly-packs everywhere. Some are from NEP Visions in England, one is from Bexel in the U.S. and several were designed and built by NBC Olympics. The

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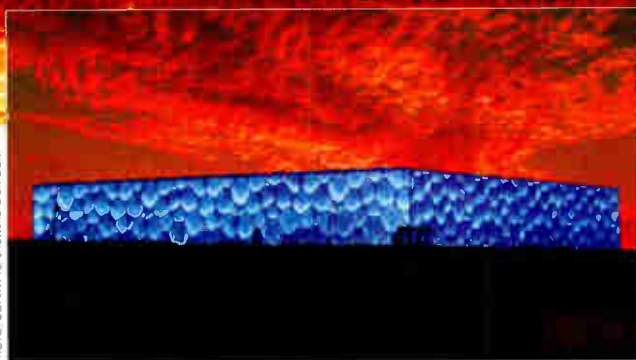


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The National Swimming Center (left) and an aerial view of the city of Beijing

size and power of a Bluefin Omega is a dream just made for these limitations. Their chief limitations are the number of faders one can have, so for our biggest venues we gave them two each. But the feature set has everything we're accustomed to having in our biggest remote trucks: having 5.1 inputs on one fader with spill panels to adjust the balance of the stems, and spill panels to enable a simultaneous stereo mixdown. Also, things like 5.1 monitoring with lots of internal and external 5.1 sources. I am very impressed with what Calrec has been able to do in a console of this size." How many inputs might an event require? "In the past, we had consoles with 128 stereo analog inputs on Calrec Q2 consoles and they were filled, and we even had smaller consoles feeding submixes into them."

Dixon says that for the smaller-scaled locations, DiGiCo DS-00 desks will suffice: "Our small venues used to be happy with 11 mono inputs and three stereo inputs," he says, "but HD and surround have exploded the requirements for audio, even if we kept

to the same number of elements, which, of course, we haven't. We've added more recording devices and more cameras with stereo microphones on them. But it's still a smaller event with a smaller budget and smaller amount of space to do it in. Trying to find something in between the Omega and the small digital consoles that aren't appropriate for television in 5.1 has not been easy, but DiGiCo was very proactive in trying to fill that gap for us. They have a usable number of inputs and outputs, they can monitor internal and external 5.1 signals, they have the build and sound quality, and the price point is very affordable."

Queried whether the various mixers follow certain approaches to guarantee some sort of sonic consistency to the mixes, Dixon answers, "I have developed guidelines that they must keep in mind as they mix—ambience techniques, keeping things open and separate, not using limiters to do the mix, those kind of issues. But each mixer is quite experienced, and they do live sports for television for a living as free-

lancers. This is a very professional group experienced in surround coverage."

Most of the technical setup is being done by people who have worked the Olympics for NBC before—contractors from the U.S., Canada and England mostly—"but we also employ a great deal of local help," Dixon adds. "We are blessed in Beijing with a lot of local help that's smart and hard-working."

MIC ISSUES

Asked about the intricacies of scoping out a given sport site for audio, Dixon says, "It isn't very different from miking a drum kit, a piano or a stage filled with tap dancers. We have to know each sport intimately—what's involved and what does that involvement sound like? Once you can identify the type of sound involved and how that sound is made, you look at where you can get away with putting microphones. Will the International Olympic Committee allow us to put a microphone very close to the source of the sound if we make it invisible to the eye and to feet that

might trip over cables? Or will they say we can't get any closer than 8, 10 or 50 feet?

"For the Winter Games, there are a lot more long-distance sound pickups required," he continues. "People skiing down a mountain need a lot of microphone operators pointing a lot of shotgun microphones over a very big area. Sounds of the Winter Games have a lot of scraping—edges of skis, edges of ice skate blades, edges of sled runners, curling rocks sliding on the ice. The Summer Games have a lot of footfalls, races, jumps, landings, springs from vaults, diving boards. All these require different techniques. You have to know your microphones: What do they do well? How will they work on capturing this kind of sound from that distance?"

"Consider the issue of a 5.1 ambience from an outdoor stadium. The ambience in this case is mostly the sound of the crowd in a very big, open space. We don't want to mike individuals; we want the sound of a large group. However, we want to preserve the transients of handclaps and have the identifiable sound of a group shouting in unison. We don't want a bunch of P.A. in this signal either. You have to calculate that you need to have different sounds coming from five different speakers. Using lots of



Bob Dixon has been designing sound coverage for the Summer Games for 20 years.

mics is not my favorite thing to do; I think it destroys clarity. But a great directional mic can be suspended with its back to the P.A. speakers and give a nice representation of the sound of a crowd. Do this five times from five different places, and you can get a great foundation for your show mix.

"Sometimes we mike different segments of the audience for their response to a sport happening right in front of them. As examples, athletics, gymnastics and wrestling have several competitions going on at the same time. So we would mike the audience right in that area as a sweetening to the coverage of that competition. We're using Audio-Technica 4050s at each venue to do this. This

gives us the same type of sound from each venue, and I think they are terrific in their openness, clarity, transient response—all the things I want from a high-quality microphone on a job like this."

DISTRIBUTION—HALFWAY AROUND THE WORLD

Even though 5.1 mixes for all events will be delivered from Beijing, Starzynski assures, "We are also paying close attention to the 2-channel downmixed version of our surround sound audio, as this feeds analog standard-definition stereo viewers, still our largest audience. The network's standard-definition downmix will be set to Lo-Ro [stereo only] to create the absolute best stereo sound with much attention paid to the return monitoring feed at the main commercial control mixing console in Studio 6A in New York. Mix engineers in China and New York are well aware of the importance of this soundtrack and will be monitoring it most of the time, in addition to frequent checks of the discrete 5.1 for the DTV service and analog and digital air checks of WNBC and WNBC-DT, our station in New York City. We are also paying close attention to maintain a -23dBFS average loudness for the broadcast. Both

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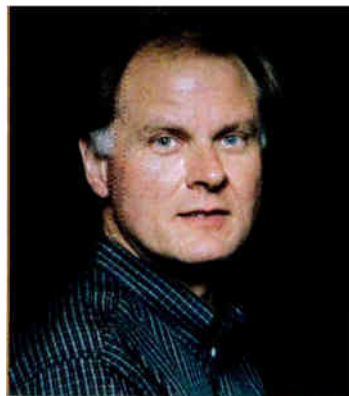
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Beijing and Stateside engineers will make adjustments as needed to create great sound for both SD and HD." All programming that goes out in stereo only will also have a 5.1 counterpart soundtrack that's printed on an archival HDCAM-SR videotape should the need arise for surround coverage on that event at some other point. The archiving and repurposing of many feeds to cover promos and feature packages—often involving post sweetening—is handled at 30 Rock.

Starzynski describes the signal chain for a typical event at the Beijing games: "In China, the venue creates audio/video at the event

location and sends this via HD-SDI communications hard-line to the IBC. The IBC receives, processes, routes, mixes and ultimately releases this signal via satellite using an MPEG transport stream to NBCU headquarters at 30 Rock. BOC in New York City receives and properly routes the signal to a specific control room assigned to do commercial or release control for that event.

"For commercial control for HD on the DTV network, event and commercial sources are each assigned a separate 5.1 fader on the mix desk and an engineer is responsible for monitoring the signals and timing of



Jim Starzynski is principal engineer/audio architect for NBC Universal Advanced Engineering.

the crossfades between sources," Starzynski continues. "If there's a concern with the delivered audio, the New York control room contacts the IBC in China asking for a fix to the problem at the point of origin. The output of this room feeds HD distribution and a downmix feeds the Lo-Ro signal to SD distribution.

"BOC then creates multiple time zone feeds on separate distribution channels for HD and SD: The SD signal remains stereo and is distributed digitally to our SD TV stations. Those stations apply processing as necessary to handle dynamics limitations in analog transmission. Each station accomplishes this differently.

"For HD," Starzynski continues, "the audio signal is demuxed from HD-SDI to AES-3id in BOC for both stereo and 5.1 stations. For 5.1 stations, it's applied as discrete L/R, C, LFE, Ls, Rs and audio metadata to the satellite encoder. Stereo stations receive a downmix of the 5.1. The DTV stations take the appropriate feed and integrate it in their HD distribution system locally. The audio is ultimately applied to the DTV audio encoder. Surround-capable stations use the network metadata that's matched properly for loudness and dynamics, and transmit it with the audio to the audience to control home receivers with the network program. Stereo DTV stations send the downmixed network audio to the home, along with metadata chosen and distributed by the station. In the end, the audience receives a high-quality, highly produced 5.1 or stereo digital soundtrack of this world-class event with absolute minimal dynamics processing and consistent loudness."

Complex stuff, to be sure. So when you hear a 350-pound Bulgarian grunting as he throws the shot put, appreciate not just the effort the athlete has made to hurl that 16-pound metal ball more than 70 feet, but also the precision team of audio pros and high-tech gear required to deliver that grunt to your living room! ■

Blair Jackson is Mix's senior editor.

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Vel Records

Brooklyn Studio Gives Rise to New Music Company

The newly formed Vel Records (www.myspace.com/velrecords) and its Brooklyn, N.Y.-based studio began as the private studio of EMI songwriter/producer Camus Celli. Having come up under producer Nile Rodgers, Celli has produced such artists as Tina Turner, David Byrne and Arto Lindsay. As Celli has become a sought-after songwriting partner for major label artists-in-development, his project studio—which is built-out in a loft space situated on the edge of the East River—has become a creative commune. A recent studio expansion and the label's first in-house production—a record by rock/rap phenom Krista that's scheduled for release in the fall in partnership with J Records—illustrate the vitality of the label's adaptive, pop-savvy team.

Vel Studios now incorporates Celli's initial room, which is equipped with a full-tilt Pro Tools HD3 rig and his eclectic collection of vintage analog gear and keyboard; also included are a large live room with staggering city views, a writing suite and a brand-new recording/mixing studio. Celli's partner in the facility is also his frequent songwriting and production collaborator, Paul Conte, with whom he established Vel Records.

"Vel Records is a new-model music company," says Celli. "Basically, it's a collection of music industry veterans. We're all into great music *and* figuring out how to make our projects work financially in a new, non-traditional system. It's all about being fluid and nimble and providing whatever the project needs: production, marketing, management, promotions—identifying what it will take to get the artist to the next level and then providing that."

In addition to signing, developing and producing new artists, Vel Records is also taking in songwriters to its publishing division, Vel Songs. The newly expanded studio supports the increased in-house production and now accommodates visiting mix engineers. "Vel, the studio, will be operating like a kind of writer's camp at times," says Celli, "and so we needed a larger environment—a multiroom facility that could handle a few projects at once. Additionally, I wanted the new room to be an option for some of my professional mixer friends, so I incorporated some of their gear requests."

The new recording/mixing room is in an oblong space with the control room (and more city views) at the far wall, with a sizeable lounge/recording area laid out before it and a fully floated vocal booth tucked into the corner. From the control room area up on a floated deck, engineers have access to a second Pro Tools HD3 system, which mirrors the first in its fanatical plug-in selection. Vel Studios' rackmount gear includes a Chandler Limited Mini Rack mixer and the company's EMI/Abbey Road



Camus Celli in his new control room at Vel Records

Series outboard units, including TG Channels and TG Limiters; API 550, 560 and 512Cs; dbx 160XTs and 162s; Neve 3314s; UREI 1176s; and Celli's choice Altec 458A and 1567A tube mic pre's. Near-field monitors include Tannoy System 1000, ProAc Studio 100 and Yamaha NS-10s.

"It was important that the studio be modular because a lot of people are mixing in the box and don't need a console, but will roll in with their rack and want to plug in and go," Celli notes. "We have a Sterling Mastering desk in there, which comes apart to fit the different control surfaces an engineer might bring in." Celli and engineer Josh Grant spent months perfecting the room's acoustic design, relying on RealTraps panels and trusted ears to achieve what he feels are reliable, transferable results.

"I wanted to define two distinct environments without putting walls up," Celli explains. "The control area, which is floated with a drop ceiling, is a lot drier. And as you back away from that platform into the recording area, it gets slightly brighter. I let some of the concrete ceiling show through so you have a [livelier], airier sound for recording, but then I deadened the long wall so there's no slap-back into the control room. I had mastering engineers come in, and we did a lot of trial and error with speaker positioning before installing any of the gear."

Celli and Conte recently co-wrote and produced 14 tracks for Brenda Radney, who is newly signed to Justin Timberlake's Tennman Records, an Interscope imprint. Celli cut nearly all of Radney's vocals in the new room, right out in the open. "I'm a big fan of doing vocals in the control room, so this new room is perfect because there's enough space that we can set up a vocalist in front of or behind the producer/engineer, depending on whether they want that eye contact," he notes. "The fully floated anechoic chamber is there too, though—another touch to make the room totally client-friendly." ■

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OUTSTANDING CREATIVE ACHIEVEMENT

A. TOUR SOUND PRODUCTION

Bruce Springsteen, Audio Analysts
The Police, Clair Showco
Justin Timberlake, Clair Showco
Tool, Eighth Day Sound
Roger Waters, Clair Showco

B. REMOTE PRODUCTION/RECORDING OR BROADCAST

2007 Academy of Country Music Awards, CBS
2007 American Idol Finale, Fox TV
50th Annual Grammy Awards, CBS
Garth Brooks: Live in L.A., CBS
VH1 Rock Honors, Genesis/Heart/ZZ Top/Ozzy Osbourne, VH1

C. TELEVISION SOUND PRODUCTION

24, Fox
American Idol, Fox
Battlestar Galactica, Sci Fi Channel
Lost, ABC
Saturday Night Live, NBC

D. FILM SOUND PRODUCTION

3:10 to Yuma, Lionsgate
Ratatouille, Pixar Animation Studios, Walt Disney Studios
Sweeney Todd: The Demon Barber of Fleet Street, DreamWorks Pictures
The Bourne Ultimatum, Universal Pictures
Transformers, Dreamworks LLC, Paramount Pictures

E. STUDIO DESIGN PROJECT

2 Hard Records, Kingston, Jamaica
Cream Recording Studios, London
Inner Machine, Buffalo, NY
Red Bull Studio, Red Bull North America, Santa Monica, CA
Setai Recording Studio, South Beach, FL

F. INTERACTIVE ENTERTAINMENT SOUND PRODUCTION

Bioshock, 2K Games
Call of Duty 4: Modern Warfare, Activision
Halo 3, Microsoft Game Studios
The Orange Box, EA Games
Uncharted: Drake's Fortune, SCEA

G. SURROUND SOUND RECORDING

Fear of a Blank Planet, Porcupine Tree, Atlantic
James Taylor: One Man Band, James Taylor, Hear Music
Shakira: Oral Fixation Tour, Shakira, Sony BMG
The McCartney Years, Paul McCartney, Rhino
Vaughan Williams: Symphony No. 5; Fantasia on a Theme By Thomas Tallis; Serenade to Music, Robert Spano & Atlanta Symphony Orchestra & Chamber Chorus, Telarc

H. RECORD PRODUCTION/SINGLE OR TRACK

"1234," The Reminder, Feist, Universal/Polydor
"Icky Thump," Icky Thump, the White Stripes, Warner Bros.
"No One," As I Am, Alicia Keys, RCA
"Umbrella," Good Girl Gone Bad, Rihanna featuring Jay-Z, Def Jam
"The Pretender," Echoes, Silence, Patience & Grace, Foo Fighters, RCA

I. RECORD PRODUCTION/ALBUM

Icky Thump, the White Stripes, Warner Bros.
Just a Little Lovin', Shelby Lynne, Lost Highway
Long Road Out of Eden, The Eagles, Polydor
Raising Sand, Robert Plant & Alison Krauss, Rounder
Revival, John Fogerty, Fantasy

OUTSTANDING TECHNICAL ACHIEVEMENT

A. ANCILLARY EQUIPMENT

Bag End E-Trap electronic acoustic absorber
Dangerous Music D-Box DAW analog summing/monitor control/D-to-A converter/talkback system
Frontier Design Group AlphaTrack DAW fader/encoder controller
Primacoustic Recoil Stabilizer studio monitor platform/decoupler/stabilizer
SE Electronics Instrument Reflexion Filter microphone isolator/absorber
Sensaphonics 3-D HW Active Ambient IEM System in-ear system with integrated ambience mics

B. AMPLIFIER TECHNOLOGY

Apex HeadPod headphone amplifier/distribution amp

TO ACCESS THE ONLINE BALLOT, go to www.VoteTEC.org and follow the instructions. You will be directed to your personal passcode, which you will need to access the ballot. Upon accessing the ballot, please vote in those categories in which you are most knowledgeable.

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PreSonus HP60 studio headphone mixing system
QSC PowerLight 3 Series touring/installed power amplifiers

C. DIGITAL CONVERTER TECHNOLOGY

Apogee Duet portable FireWire audio interface for Macs
Digidesign Mbox 2 Micro compact USB-powered Pro Tools LE system
MOTU 828mk3 cross-platform FireWire interface with onboard effects and mixing
PreSonus FireStudio Project recording system with eight mic pre's, converters and mixing
Prism Sound Orpheus FireWire interface with eight analog and 10 digital I/Os
TC Electronic Studio Konnekt 48 studio interface with 48 I/Os, onboard DSP, talkback and monitor control

D. MIC PREAMPLIFIER TECHNOLOGY

Focusrite LIQUID4PRE 4-channel unit with vintage preamp emulation
Grooves Tubes SuPRE high-res, 2-channel tube preamp
Millennia Media HV-3R remote-controllable 8-channel preamp
Rupert Neve Designs Portico 5015 single-channel preamp/compressor
SSL X-Rack VHD Pre 4-channel preamp with Variable Harmonic Drive
Universal Audio DCS Remote Preamp remote-control stereo preamp with headphone amp and M/S encoder

E. MICROPHONE TECHNOLOGY/SOUND REINFORCEMENT

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Audix M1250 ultraminiature condenser mics with instrument, hanging or podium mounts
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Heil PR-35 handheld dynamic vocal mic
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Sennheiser MKH 8000 Series studio RF condenser mic
Soundfield DFS-2 multi-capsule stereo surround mic
Telefunken|USA Ela M 260 small-diaphragm tube mic with three capsules

G. WIRELESS TECHNOLOGY

AKG IVM 4 in-ear system with binaural simulations and dbx compressor/parametric EQ
Audio-Technica SpectraPulse Ultra-Wideband System pulse-based, interference-free 6GHz wireless
Electro-Voice REV Series handheld/bodypack UHF wireless systems
Kaltman Spectran HF4040 RF Analyzer compact wireless spectrum-analysis tool
Mipro ACT-S1 handheld/bodypack UHF wireless systems

H. SOUND REINFORCEMENT LOUDSPEAKER TECHNOLOGY

Adamson Metrix ultracompact line source series
JBL VRX932LAP powered constant curvature line array
Mackie SRM450v2 active portable loudspeaker system
Meyer Sound UPJunior compact high-output powered system
Nexo GEO S12 compact tangent-array loudspeakers
QSC WideLine-8 compact line array system

I. STUDIO MONITOR TECHNOLOGY

Blue Sky EXO 2.1 stereo monitoring system with subwoofer
Dynaudio Acoustics BM12A two-way active near-field
Genelec SE DSP System ultracompact subwoofer/satellite monitors
Klein + Hummel O 410 three-way midfield/main monitors
KRK Systems VXT Series powered studio near-fields
Mackie HR824 mk2 active reference monitors

J. MUSICAL INSTRUMENT TECHNOLOGY

Dave Smith Instruments Prophet 08 analog 8-voice poly synth
Digidesign Structure RTAS virtual instrument
Korg M3 music workstation/sampler

Propellerhead Software Reason 4 virtual music workstation/sequencer
Waves iGTR pocket-sized guitar processor/effects
Yamaha Motif XS6 music synthesizer workstation

K. SIGNAL PROCESSING TECHNOLOGY/HARDWARE

CEDAR DNS3000 Dialogue Noise Suppressor background noise eliminator
Chandler Germanium Compressor modern dynamics with vintage heritage
Elysia Mpressor stereo analog compressor
Empirical Labs DerrEsser dynamic HF processor
Solid State Logic Duende Mini DSP-powered SSL processing
Universal Audio 2-LA-2 stereo tube compressor

L. SIGNAL PROCESSING TECHNOLOGY/SOFTWARE

Antares Harmony Engine real-time harmony plug-in
Roger Nichols Digital Spl-izer multiband frequency splitter/router
Solid State Logic X-Comp compressor plug-in
Universal Audio SPL Transient Designer transient processor plug-in
URS Classic Console Strip Pro input channel/EQ compressor plug-in
Waves The API Collection compressor/EQ bundle based on API modules

M. WORKSTATION TECHNOLOGY

Abelton Live 7 music creation/production/performance software
Apple Logic Studio DAW bundle with Logic Pro 8, SoundtrackPro 2, MainStage, studio effects and instruments
Bias Peak Pro 6 Mac-based stereo editing/processing/mastering/delivery app
Digidesign Pro Tools 7.4 DAW for music and post-production
Solid State Logic Pro-Convert DAW Project Conversion Utility
Steinberg Nuendo 4 DAW for music and post-production

N. RECORDING DEVICES

ATR Master Analog Tape analog tape formulation
Fostex PD606 8-track HD/DVD location recorder
Korg D888 8-track digital recorder/mixer
M-Audio MicroTrack II compact 2-channel recorder
Sony PCM DS0 digital 2-track field recorder
Tascam X-48 48-track hard disk recorder

O. SOUND REINFORCEMENT CONSOLE TECHNOLOGY

Allen & Heath iLive-80 64-input/80-fader digital mixer
DiGiCo SD7 large-format digital mixer
Roland RSS V-Mixing System digital snake/mixer combination
Soundcraft FX Series analog console with onboard Lexicon effects
Studer Vista S SR live version of Vista 5 digital console
Yamaha PMSDV2 large-format digital mixer

P. SMALL FORMAT CONSOLE TECHNOLOGY

Allen & Heath MixWizard³ 12M rackmount monitor mixer
Dan Dugan Sound Design Model E-1 automatic mic mixer
Digidesign C|24 control surface for Pro Tools HD/LE systems
Euphonix MC Mix Controller compact DAW mixing surface
Mackie Control Universal Pro Series DAW controller/mix surface
Soundcraft GB2R small-format, rackmountable mixer

Q. LARGE FORMAT CONSOLE TECHNOLOGY

Euphonix SS Fusion large-format digital console
Lawo c²90 large-format digital console
Rupert Neve Designs S088 large-format analog mixer
Solid State Logic C300 HD large-format digital console
StageTec Auratus large-format digital console
Trident 8T-32 RTB large-format analog mixer

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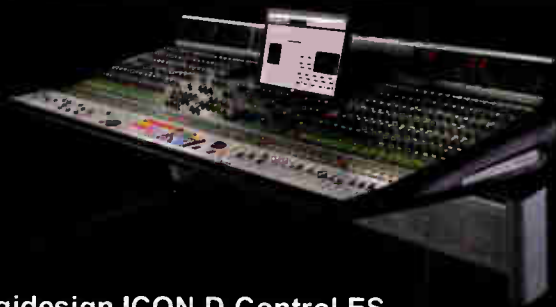
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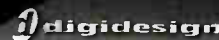
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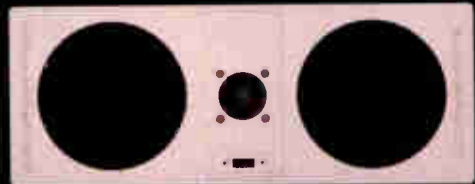
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Composer Bear McCreary

Creating Soundscapes for Film and Television

By Bryan Reesman

He helps choreograph spectacular intergalactic dogfights and provides emotional support to a powerful woman fending off robot attacks from the future. He has also been a first-hand witness to crazed serial-killer attacks and regularly interacts with the denizens of a quirky town inhabited by wacky inventors. And he rarely has to leave the studio. He is perhaps the ultimate armchair adventurer.

Los Angeles-based Bear McCreary is an indefatigable composer who juggles multiple film and television projects and seemingly thrives on creative pandemonium. His exotic Eastern sounds, tribal percussion and symphonic strings elegantly accompany the outer-space drama of *Battlestar Galactica*. His music is the militant propulsion behind, and the atmospheric grace beneath, *Terminator: The Sarah Connor Chronicles*. His eclectic, brooding soundscapes have provided the creepy backdrop to fear flicks such as *Rest Stop* and *Wrong Turn 2*. He's even played the accordion on a season of the Sci Fi Channel series *Eureka*.

While McCreary's creative prowess has kept him very active, the composer readily acknowledges the assistance of engineer, mixer and producer Steve Kaplan—McCreary's musical co-pilot—who sits in on our interview. "The sound of my music is so much influenced by his work that I don't think I could do it with anyone else," remarks Mc-



PHOTO: DAN GOLDWASSER

Creary of Kaplan. "At the same time, I'm the one that gets to have my name plastered on the CD and gets to take credit for that, so anytime I can point out that there are other people who work on the music and really help bring it to life, I will."

McCreary and Kaplan first worked together in January 1998 during the composer's freshman year at University of Southern California, where he studied with Elmer Bernstein and Joseph Harnell. Kaplan was the "go-to" engineer for student films at the school.

"In college, Steve and I were, and still are, workaholics," McCreary says. "With the number of movies that I was doing, it was inevitable that he and I would work together. However, it was helpful that he and I can handle all the abuse that comes with working on a schedule like this. We ended up working together a lot.

"When new projects come down the pipeline now, we know exactly how we're going to handle it," he continues. "When I got *Battlestar* [in 2004], I knew immediately that I was going to hire Steve, and we knew

that there were certain people that we were going to call upon, especially the percussionist we work with, M.B. Gordy. Doing all those little student films and independent projects helped me put together a group of people that I could call upon when real gigs started happening."

McCreary and Kaplan have been friends long enough to subvert their egos and approach mutual criticism as a necessary conduit to creating the strongest possible projects. Their chemistry has become increasingly important, especially during a hectic 2007, when they went from working on one show (*Battlestar*) to two more (*Sarah Connor* and *Eureka*). What began as a two-man operation evolved into something bigger. It was the only way they could survive the onslaught of deadlines.

"We brought in some more orchestrators, some assistant engineers, a couple other assistants and engineers for recording additional sessions," McCreary says. "At the same time, Steve will be off mixing a cue while I'll be off writing another cue." It has been a liberating and rewarding process because McCreary can get away from producing chores and dive full-time into "writing music full-time and churning out music that I'm really pleased with."

That music is inspired by character emotions and story arcs more than particular events in *Battlestar* and *Sarah Connor*.

—CONTINUED ON PAGE 60



PHOTO: COURTESY FOX

Summer Glau as Cameron Phillips and Thomas Dekker as John Connor in *Terminator: The Sarah Connor Chronicles*.

Mamma Mia!

Top New York Mixers Tackle ABBA Musical

By Blair Jackson

Even though 1970s pop titans ABBA have sold more than 250 million records worldwide, they were never huge in the U.S. (just four Top 10 hits), and it was definitely something of a surprise when the group's glossy, lightweight sound became the basis of a very successful Broadway musical, *Mamma Mia!*, nearly seven years ago. Less surprising is that the crowd-pleasing spectacle—still playing on Broadway and in touring companies—has now found its way to the big screen: *Mamma Mia!* is the first feature film directed by Phyllida Lloyd, heretofore known primarily for her opera and theater work in England. It was shot at Shepperton Studios in London and on location in the Greek islands where the slight but cute story takes place. Meryl Streep is the unexpected "name" above the title who can *really* sing (though you already knew that if you saw *A Prairie Home Companion*), while Pierce Brosnan and Colin Firth are the eye-candy for the film's target audience of middle-aged female ABBA fans.

The sound production crew was nearly entirely English, the music was produced mainly in Sweden (where ABBA members and film co-producers Benny Andersson and Bjorn Ulvaeus still live), but the final mix, at Sound One in New York, was headed by a pair of Americans: Dominick Tavella and Michael Barry.

Tavella earned an Oscar for his effects mixing work on *Chicago* in 2003, and has a long, distinguished career working on many of the top films to come out of New York, including numerous music-oriented productions. Music and dialog mixer Barry has likewise worked with many of the best independent filmmakers (Woody Allen, the Coen Brothers, Robert Altman) and also on such major commercial releases as *Michael Clayton*, *Music and Lyrics* and *The Stepford Wives*.

"You would never know from looking at *Mamma Mia!* that Phyllida wasn't an experienced film director," Tavella notes during a break from the final mix in Sound One's Neve DFC-equipped Studio A in the historic Brill Building on Broadway in midtown Manhattan. "She did a marvelous job. It opens up really nicely and it moves very well, which you want in a musical."

"I can't compliment everyone who worked on this film enough," adds Barry. "It feels very cinematic to me rather than theatrical, although there are elements of each. It's faithful to the [stage] musical; at the same time, it uses the film medium

really well."

From Tavella's standpoint, the most challenging aspect of FX mixing on a musical "is that the music is integrated into the rest of the film smoothly. You don't want to feel like the film is stopping, the music is starting, then it stops again and *then* you're back in the film. The beginning and the end [of the songs] have to integrate with the dialog; it's got to flow. Once you're past the transition, you can do whatever you want, but getting into the song has to feel as seamless as you can possibly get."

Asked if there were similarities between working on *Mamma Mia!* and *Chicago* in that regard, Tavella replies, "They're different beasts in that the way the music in *Chicago* worked in the film was that people sort of went into dream states, and on just about every music piece in *Chicago* there was like a 25- or 30-second flow from reality into the dream state. This was very different. This was more like a traditional musical in that people will talk and then they'll start singing. The musical pieces are very well-integrated into the story, but they're part of the story, so you want it to feel more like reality."

Most of the music and singing was prerecorded in a studio and then lip-synched during production, but Barry says that in some instances, the actors

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Left: Music and dialog mixer Michael Barry. Right: Oscar-winning mixer Dominick Tavella



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sang live to playback. "Obviously, when Meryl Streep is singing on a cliff in Greece, that's probably not going to be live, but it's all done well enough that it's not so obvious."

Although the music is always kept out-front as much as possible, for reality's sake care was taken to keep FX playing during the musical numbers. "You can't be too aggressive with it because you don't want Foley popping out," Tavella says, "but you don't want it to disappear, so it becomes *only* music. It's actually quite nice because in the quiet parts of the music, you can feel the wind or the crickets or some movement."

Barry had extensive Pro Tools music stems with which to work in the final mix, though not many liberties were taken with these new versions of the original arrangements, which the ABBA members wanted to preserve in the film. "The majority of the music is played for fun and energy and excitement and the sheer joy of just listening to the music," he says. "This film was so much fun to work on. The music helped put everyone's spirits up constantly. To go to work every day and be in that environment was very exciting." ■

Bear McCreary

—FROM PAGE 58

Many of the *Battlestar* cues are four or five minutes long. "Both of these shows have long character arcs, and that's one of the things that makes them really challenging," says McCreary. "I can't just look at a scene, and say, 'The monster jumps out of this door there, so this is where you do scary music.'" He focuses on the subtleties and ambiguities of the characters on the shows to guide his musical choices.

Many casual viewers of *Battlestar* might not be able to readily identify themes for individual characters like Apollo or Starbuck, but that is because the music does not follow a conventional Hollywood formula. "There actually are themes for each character in *Battlestar*," McCreary clarifies. "I think that I counted 50-plus themes that I've written. They're not themes in the traditional John Williams orchestral sense. Sometimes they'll be motific ideas, sometimes they'll just be an instrumental color. Certain ethnic instruments are associated with certain characters, so it's a very subtle, understated approach."

The duo has done most of their orchestra dates at Warner Bros.—McCreary really enjoys the sound of the string section at the

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Dynamic duo: Steve Kaplan (left) and Bear McCreary

Eastwood Stage—and they also record at Kaplan's studio, Gordy's Studio, and their guitarist's studio. "Many times we'll rent out their studios because we'll have multiple sessions going on at one time," the composer says.

McCreary has a simple writing studio without any recording or mixing capabilities. Once he has finished writing, the composer passes off the music to an orchestrator while the audio goes off to Kaplan at his studio, which has a small overdub room and a mixing room. "It's mostly Pro Tools, and I purchased some large ATC 150 speakers," remarks Kaplan. "Bear gives me all his tracks, and we'll record overdubs here or we'll go over to the percussionist's house and record there. Then I'll bring it all back home. Bear usually comes over at the end once I get it all mixed."

At his studio, the producer has four Pro Tools HD cards in a Mac G5. He also owns two other Pro Tools rigs, one "that I listen to and print mixes through," explains Kaplan. "There are so many stems going to the dub stage that I gave up trying to print them one by one. I use the second Pro Tools rig to print off the different passes like drums, bass, guitars or tabla. Then I have another computer to run [Audio Ease] Altiverb, which is just reverb. I have enough reverbs for each of the surround stems that I print for the show. It's a three-computer setup." Kaplan keeps everything in the box, eschewing a traditional console—the better for working with 200 to 300 tracks in an average action cue.

McCreary acknowledges they do a lot of multitracking. Every MIDI instrument and synth is split out to its own audio track. Then, with an orchestra session alone adding at least 48 tracks, drums filling up 10 to 15, and vocals, guitar and bass swallowing up 40 or more, the soundtrack gets crowded fast. "When you have everything going,

those are the cues that become massive and almost unwieldy," says McCreary. "But Steve gets it all together and gets it all done."

On certain episodes of *Battlestar*, McCreary and Kaplan have been asked to assimilate psychedelic rock, bagpipes and classic rock tunes like Jimi Hendrix's "All Along the Watchtower" into a sonic framework that also includes Taiko drums and Middle Eastern soloists. Working in the compressed-time medium of episodic TV, they have come to accept that they do not always have the time they need to try every idea they'd like, or fix things after the fact

or create a better mix—but they get the opportunity to do that with the soundtrack CD that's released for each season, presenting slightly different versions of music heard in the show.

It is a point of pride for the composer that most of his sounds are custom-made, and he will usually spend the first couple of weeks on any new project designing new sounds by working with musicians and sampling sounds. He says he has phased out commercially available synths because he wants to make the sounds he wants. A childhood friend named Jonathan Snipes also assists him.

"He does a lot with synth sound design and a lot of the crazy synth work on *Terminator*," states McCreary of Snipes' work. "He does a lot of analog stuff. It looks like Dr. Frankenstein's lab in his garage. He'll create all these incredible analog sounds and sample them for me. He'll send them back to me, and I'll manipulate them further.

"[I have] a library that I have been working on for years and continually expand," he continues. "It's amazing some of the useful sounds you can get out of household sounds. I even sampled my dishwasher that had a creaky door. I've used that in horror movies. It's a lot of fun."

When he started work on the Sci Fi series, McCreary was not allowed to create "themes" and was barred from using orchestral instruments or any melodic instruments other than the duduk and the bansuri. "I had this extremely limited palette of Taiko drums, pads, the duduk and a couple of other percussion instruments to make the music work," he recalls. "I had to make it communicate all the emotions that the show needed, so I really started falling back on some simple melodic and rhythmic ideas. From there, it has grown and become a very elaborate monster." ■

Mojave Audio

by David Royer



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On the MA-100

"How does such a small mic make such a big sound? This thing [MA-100] is fat!"

Ross Hogarth

(Grammy winning Producer/Engineer, Ziggy Marley, Jewel, Keb Mo, Black Crowes, REM)

On the MA-200

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Ryan Hewitt

(Engineer/Mixer: Red Hot Chili Peppers, blink-182, Alkaline Trio)

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R.E.M.



Lead vocalist Michael Stipe (right, with guitarist Peter Buck) sings through an Audix OM7 and wears Future Sonics Ear Monitors.

of nine V-DOSC and three dV-DOSC [sides]. 12 SB218s [ground subs, six per side], two hangs of 12 dV-DOSC 270 fill where applicable, a center hang of six dV-DOSC for front-fill and six ARCs [supplemental]. We had a little bit of a smaller system for the Greek."

This is the first tour Eliason is using a Midas XL8 digital board; he's a longtime XL4 user. "The XL8 has the XL4 head amp quality, which makes a big difference to me," Eliason says. "It is also a true 24-bit, 96k system, which you truly hear in its output resolution. We are running digital from the converters through the system processing, converting back to analog just prior to the amps."

"I'm also a first-time user of the Midas XL8 console, and I love it," adds monitor engineer Squiers. "It's nice having the Midas sound in a digital format. Mixing is great with the XL8 because of its automation from song to song, its amazing sound quality and its very analog-feeling surface."

Photos & Text by Steve Jennings

R.E.M. have released their 15th album, *Accelerate*, and are in the midst of a world tour. *Mix* caught up with front-of-house mixer Brett Eliason and monitor engineer George Squiers during their two-night stint at the Berkeley, Calif., Greek Theater; gear is provided by Rat Sound.

Eliason describes the P.A. as comprising "two hangs of 14 [L-Acoustics] V-DOSC and six dV-DOSC [mains], two hangs of eight SB218 subs [main subs flown], two hangs



Monitor engineer George Squiers



From left: crew chief Lee Vaught, Midas support Howard Lindeman and FOH engineer Brett Eliason

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News



Dave Rat, founder of Rat Sound Systems (second row, in white shirt), led a four-hour discussion with students at Full Sail University (Orlando, Fla.) about the ups and downs of concert sound—and everything in the middle.

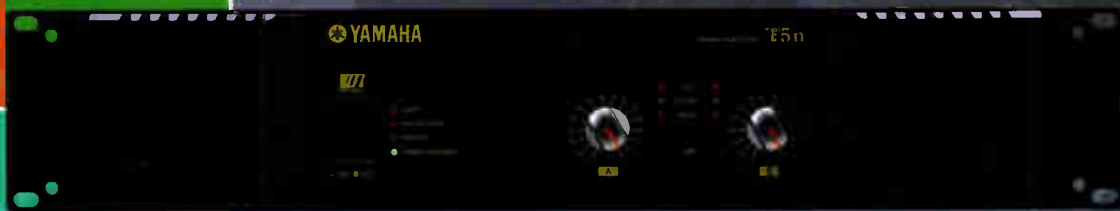
The Black Crowes are currently touring in support of their latest album. The outing sees Scott "Scoobie" Scherban at FOH and Drew Consalvo at monitors. Mics are all Shure...Sugar Creek Baptist Church (Sugar Land, TX) added a DiGiCo CS-D5 at FOH; the board was selected by the venue's director of technical production, Rick Russell, and tech production assistants John Austin and Nya Dillard...Sheryl Crow's FOH engineer, Sean "Sully" Sullivan, has put together a live sound system based on a Digidesign VENUE D-Show Profile integrated with a Pro Tools HD system...Boston's Higginson Hall hired systems integrator Matrix 1 to convert and upgrade its P.A. from an announce system to a multifaceted one. Project manager Chaz Loews chose Martin Audio AQ5s in a distributed system...Brownsville, TN-based Tennessee Concert Sound handled the numerous commencement programs at the University of Mississippi, bringing in a D.A.S. Audio loudspeaker system for the four different venues.

FixIt

PilotLight Audio Inc./White Stripes front-of-house engineer Phillip J. Harvey recently multitracked the band's 10th-anniversary tour in 2007 in 40 channels of high-resolution digital audio using a Metric Halo rig and his MacBook Pro laptop.

We ended up with 36 channels, including two audience mics. I also recorded a 4-channel pre-mix with a separate MIO 2882+DSP unit utilizing the FOH board mix-left/right, plus a pair of Schoeps CMC6MK1 mics in an ORTF stereo configuration at FOH. I would delay the board mix using the Delay Finder in Metric Halo's SpectraFoo analysis software to get the time synced to the mics and record those tracks solitary, as well as mixed together at 16-bit/44.1kHz for an easily accessed overview of the gig. If the band wanted a CD right away, I could burn one or transfer the track to a thumb drive.





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On the Road

Dolly Parton

At *Mix Nashville*, we got the chance to sit down and chat with Dolly Parton's longtime front-of-house engineer/production manager, Mike Febner. The *Backwoods Barbie* tour (named after her latest release) is carrying a full system provided by Thunder Audio (U.S.) and Major Tom (UK). To view videos from our Nashville event, log on to mixonline.com/ms/nashville08.

What board are you using to mix?

A Midas XL4 with all the goodies. It certainly takes up a bit amount of space, but it's just a great old classic, and with a couple of key analog pieces inserted here and there it works really well for us.

What's in your outboard goodie bag?

I have a bunch of Distressors, Alan Smart C2, some dbx—a lot of compressors; there's probably 20 in a rack. I use them on various things: vocals, drum fiddle, acoustic guitars.

What are you doing to ensure that Dolly is heard loud and clear?

One of the challenges I've had with her show is that [it is] 30 to 40 percent speaking and she uses a side-mounted cardioid mic, and you can imagine how difficult that is to put out to 18 to 25,000 people. And she can be very soft-spoken at times; the Meyer Sound MILO really helped us a lot in that department with the intelligibility and coverage. I have a Lake Contour that's right on her vocal mic and that helps out a lot in bringing out her vocals, and a nice Manley Variable-Mu on there, as well.

She's touring with an 11-piece band. How is that working out?

It's a full stage and there's a bunch of multi-instrumentalists, so a lot of inputs; there's 48-plus. I'm maxing out the board.

Are any of them on in-ears?

No, there's a row of 10 wedges on the stage. Jason Glass, our monitor engineer, makes sure it's not too loud up there.

Now Playing

Tom Waits

Sound Company: Rat Sound (Oxnard, Calif.)
FOH Engineer/Board: Karl Derfler/Digidesign VENUE
Monitor Engineer/Board: Deanne Franklin/Midas Venice

P.A./Amps: L-Acoustics V-DOSC, dV-DOSC, 108Ps, SB218, HIQs; EAW MicroWedge 12s/L-Acoustics LA48A/LA15A, Crown 2400/3600, Chevin Q6

Outboard Gear: XTA DP428/DP226, dbx 160XT, Klark Teknik DN360, BSS DPR504/404, Empirical Labs Fatso/Distressor, Lexicon PCM70

Microphones: Sennheiser 421, 609; Shure SM57, Beta 52, Beta 91, SM58, Beta 98 D/S, SM81, KSM9; Audio-Technica 4050, 407LA; Beyers M160, Opus 67; Royer R-121, Crown PZM-30D

Additional Crew: systems engineer Roz Jones, monitor tech Mike "Milk" Arnold, production manager Daniel Choi, tour manager Stuart Ross

Avril Lavigne

Sound Company: LMG Inc. (Orlando, Fla.)
FOH Engineer/Board: Jim Yakabuski/Digidesign VENUE D-Show Profile
Monitor Engineer/Board: Matt Peskie/Digidesign VENUE D-Show Profile

P.A./Amps: L-Acoustics V-DOSC, dV-DOSC, KUDO, ARCs; Meyer Sound 700HP/L-Acoustics LA8 controlled by LA Network Manager

Monitors: Sennheiser ew 300 G2 IEMs

Outboard Gear: all onboard plug-ins, including All

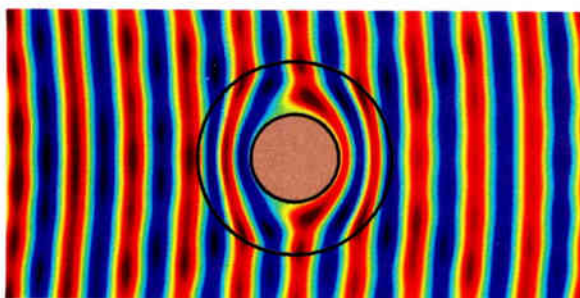


PHOTO: MICHAEL O'BRIEN

Access Pack and Pro Tools HD
Microphones: Sennheiser SKM 935 G2 with EM 550 G2 receiver, e 935s, e 906s, e 901, e 602, e 908s, e 905s; Neumann KM 184s, TLM 103s
Additional Crew: Systems engineer Evan Hall

'Acoustic Cloaking': A Reality?

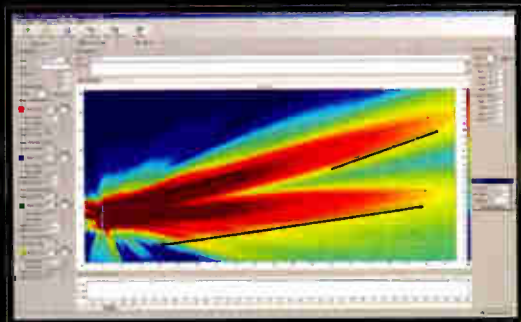
According to a study published by the Institute of Physics, researchers in Spain have proven that metamaterials—materials defined by their unusual man-made cellular structure—constructed with sonic crystals can be designed to produce an acoustic cloak to make objects impervious to sound waves; literally, diverting sound waves around an object. The idea of acoustic cloaking and its design was previously introduced by Cummer and Schurig.



An illustration of the "acoustic cloak," where the circle represents the "cloaked" object and the multicolored lines are sound waves

The research—"Acoustic Cloaking in Two Dimensions: A Feasible Approach" by Daniel Torrent and José Sánchez-Dehesa from the Wave Phenomena Group, Department of Electronics Engineering at the Polytechnic University of Valencia—showed that optimum cloaking requires approximately 200 layers of the metamaterial, but there is scope for far-thinner materials to be used than current technology can produce.

Steer The Sound Not The Box



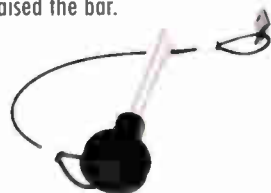
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World Radio History



ROBERT PLANT AND ALISON KRAUSS

Photos by Steve Jennings

Text by Sarah Benzuly

It's exciting enough to have Robert Plant and Alison Krauss sharing one stage—performing a bunch of tunes from their critically acclaimed duets album, *Raising Sand*—but then they throw in a truly stellar band (producer/guitarist T Bone Burnett, guitarist Buddy Miller, double-bassist Dennis Crouch, multi-instrumentalist Stuart Duncan and drummer Jay Bellerose). It

all adds up to a remarkable show where both artists infuse classic Led Zeppelin tunes with a bluegrass twang, shuttle vocals back and forth on Krauss classics, and all the while intertwine their incredible new album into the set. *Mix* caught up with the tour at the Greek Theater (Berkeley, Calif.) in late June. Paul Owen, VP of sound company Thunder Audio, told us about the production.



From left: Ian Sheppard and Matt Straw, guitar/backline techs; monitor engineer Dee Miller; Chris Moon, monitor tech; Paul Ackling, guitar/backline tech; FOH engineer Roy Williams; and Keith Jex, Thunder Audio audio tech

Front-of-house engineer Roy Williams is manning a Midas Heritage 3000. Outboard gear includes dmx 140s, a handful of Avalon tube compressors, a TC Electronic D-One, and Yamaha SPX990s and SPX2000s.

Monitor engineer Dee Miller is also working on a Midas Heritage 3000; his outboard complement includes an Apex Dominator on Krauss' Shure 700 in-ears, BSS EQ: dmx 160 and Yamaha SPX990. Krauss is the only artist onstage wearing in-ears; the rest of the musicians and Plant listen through Meyer Sound MJF212 wedges.

According to Owen, the monitor mix is "complicated as they all move all over the place and it changes from when Robert sings on his own, and then it changes when T Bone does a session on his own and Alison sings on her own, so there's a lot of things being flown in and out."



T Bone Burnett (right) sings through a Shure SM58, while his electric guitars take Sennheiser e 609 and 409s; his acoustic guitar is miked with an Audio-Technica AE 3100 and a Countryman 85 DI. Above: Burnett's amp selection.



Roy Williams is pushing the co-headliners' lovin' sound through a Thunder Audio-supplied 24-box Meyer Sound system (above), which comprises 16 MICA side-hongs, HP-700s and M'elodie side-fills, and HP-700 subs; control is via Meyer Sound Galileo and SIM.



Krauss' fiddle takes a Fishman Aura DI while she sings through a Shure SM57 Beta.

Plant sings through a Shure SM58.



Guitarist Buddy Miller's (above, left) vocals are miked with a Shure SM58, while his instrument takes Audio-Technica AE2500s; his steel guitar is miked with an SM57 while the Auto-Harp sees a Countryman 85 DI. Meanwhile, multi-

instrumentalist Stuart Duncan has SM57s on the fiddle and guitar; his mandolin and banjo are taken DI. He also lends his vocals to the mix, singing through a Shure SM58.



Dennis Crouch's double-bass is miked with a Shure Beta 52 and an Avalon Pure Class-A Ultra 5 direct DI; slap pick-up takes a Countryman 85 DI. Jay Bellerose's drum kit has a multitude of mics, including Shure Beta 52 and Beta 91 on bass; SM57s on snare top/bottom and foot percussion; Audio-Technica AE3000s on rack and floor toms; Neumann KM100s for stage-right and -left overheads; Shure VP 88 for stage-center overhead; and Audio-Technica AT3527 on ride cymbal.

Michael Bublé



PHOTO: JEFFREY MANNING

VOCALIST AND BAND SHINE IN SPECTRUM OF VENUES

By David John Farinella

Michael Bublé is just about to step on the stage at the HP Pavilion in San Jose, Calif., for his 115th (or so) show during his Call Me Irresponsible tour, and by all appearances he doesn't have a care in the world. Granted, having a world-class voice and stellar live band helps, but audio folks know that an artist's comfort level onstage rests in the front-of-house and monitor engineers' able hands. Front-of-house mixer Craig Doubet joined Bublé's tour in June 2007 after touring with legendary singers such as k.d. lang and Luis Miguel. "I am a singer's mixer," Doubet says. "That's what I do. I enjoy painting the music around the voice."

Bublé's tour carries a P.A. provided by Montreal-based Solotech, including 32 Meyer Sound ML0s for the main array, 24 MICAs for side hangs and eight M3D subs, as well as a handful of CQ1s and M1Ds for fills. The P.A. is driven with three Meyer Galileo processors tied to a SIM 3 audio analyzer. The SIM 3 is put in place to tune the system every day, but Doubet doesn't use any kind of analyzers during the show. Rather, he uses a pair of Meyer HD1s set above the Digidesign D-Show Profile to monitor the mix. "I've never had to use headphones," he reports. "With these, you can solo stuff and it pops up right in front of you, a little louder than the room, or you can pop the mix up to make sure."

In fact, he explains, the combination of the SIM 3 system with the HD1s provides a



Michael Bublé uses a Shure Beta 87C mic. FOH mixer Craig Doubet (left, in red) and system tech/crew chief Louis-Philippe Mazziade Sirais stand at the D-Show console.

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Randy Poole,
ProSound News

the Amethyst



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better representation of the live mix. “You’re usually not in the best-sounding place in the room,” he says of the FOH position. “It’s very reverberant in the middle of an arena, in the middle of the floor. Nobody else hears that, especially on the sides; they are hearing a very dry, direct sound. So having that reference is very useful.”

The Meyer boxes were an important pickup, says Doubet, because of the vocalist’s range. “He has a very interesting voice that is smooth and deep. He can be very deep when he wants to be, and that’s a challenge in lots of rooms because he hits the frequencies where the room goes. So it’s good to have really good control over the array and be able to isolate that and make it as clean as possible so that it just doesn’t go nuts when he gets low.”

A string of processors also helps Doubet keep control over Bublé’s range. The artist sings into a Shure Beta 87C, which helps because he likes to move the mic up and down his body during a show. That signal goes into the D-Show’s built-in Digidesign preamp and through a Sony Oxford GML EQ plug-in, Focusrite Forte Suite plug-in and a TC Electronic DVR2 Digital Vintage Reverb plug-in. Outboard gear includes a BSS 901 compressor and a Lexicon 480L reverb.

Doubet also uses Drawmer Tour Pack plug-ins for the band, which comprises an eight-piece horn section, a bass player, two guitarists (one also plays keys) and a drummer. Fitting the horn section around Bublé’s vocals is a challenge, as is making sure the acoustic bass comes through. “When you’re doing an arena show, it’s important to make it sound like a pop show,” Doubet reports. “It’s got to have some bottom end, it’s got to have some thump. But it’s still an acoustic bass half the time, so there are a couple of pickups and a mic on the bass.” Doubet is taking a direct signal, but the bassist has a cabinet to monitor himself onstage.



At the DiGiCo board, from left: monitor engineer Craig Brittain, P.A./stage tech Etienne Lapré and P.A./RF tech Colin Saint-Jacques

As far as mics, Doubet has an interesting assortment that includes a matched pair of DPA 4061s in front of the horn section that’s used for horn tracks, ambience and background vocals; Audio-Technica ATM 350s are placed right on the horns. He also uses the DPAs in the piano with a set of Schertler pickups. Shure KSM 32s mike the guitars, and Neumanns are set up on the drum kit as overheads and on the hi-hats.

MONITORING AT STAGE-LEFT

Monitor mixer Craig Brittain is mixing on a DiGiCo D5 board and uses a speaker to listen to his mixes during most of the show, although everyone but Bublé is on Weston ES2 custom-molded personal monitors. “Because Michael is on wedges, I listen to the cue monitor quite a bit through the night,” Brittain says, “but I definitely put [personal monitors] in a dozen or so times a night to check on mixes.”

Five bandmembers rely on hardwired Shure PSM 600s, while the guitar player who travels down-stage during the show is on a Sennheiser SR3256-C. The bassist has a cabinet behind him that he uses to feel his parts, while the drummer is using a Drum Thumper. Members of the brass section mix their own monitors using Aviom A-16 audio networking mixers. “I send them eight channels of rhythm stems and then a direct node of each one of the horns filling up the other eight,” Brittain explains. “The brass section was a big challenge when I first started with Michael because they are quite meticulous in what they want. I was trying to focus on Michael and it was getting pretty crazy.”

There are five flown Meyer M’elodie boxes per side and four L-Acoustics 115XTs on the stage’s edge. “Michael likes it pretty hot onstage,” Brittain reports, “so there’s a fair bit of life filling the ear mixes from the sidefill going into open mics and whatnot.” The singer gets a lot of vocal in the monitors, as well as whatever he can’t hear acoustically onstage.

The key for Doubet and Brittain is making sure that Bublé is comfortable onstage, night in, night out. “Michael loves to sing off the room,” Doubet says, “so we need to make sure the P.A. is consistent every night and that it’s consistent back to him. If he hears the same thing every night, he can do what he has to do.” ■

David John Farinella is a San Francisco-based writer.



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Designed for rentals or installs, Yamaha's (www.yamahacorp.com) IM8 Series 8-bus analog mixers come in 24/32/40-channel frames, all with four additional stereo inputs. All models feature TRS insert points, balanced direct outs, eight aux sends, stereo and mono outputs, an 11x4 matrix, four mute groups, one-knob compressor on all inputs, 4-band channel EQ with sweepable mids, external power supply and a redundant power supply option. The mixers also have 2-channel direct-to-USB recording outputs, and include Steinberg Cubase AI software. The M8-24 retails at \$4,799; the IM8-32 is \$5,799, and the IM8-40 is \$6,499.



AKG D7 HANDHELD MIC

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Innovators of the original Ear Monitors® pro custom earphones, Future Sonics (www.futuresonics.com) has updated its Atrio universal earphones, responding to both touring professionals and consumers. Available in black or cobalt blue, the Rev 2 versions offer TrueTimbre™ 18 to 20k Hz frequency response and QuietCables II cables for less tangling and a more comfortable fit. Pricing remains the same \$199 retail, which includes three pairs of interchangeable silicon sleeves to fit any ear-sized canal and two pair of foam sleeves.



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The first Behringer (www.behringer.com) product tailored for the commercial/install markets, the Ultrazone ZMX8210 (\$379) has six mic/line inputs with phantom power, two stereo line inputs, three independent output zones and a 4-band master EQ. This single-rackspace zone mixer features controller inputs for remote volume change/channel selection, independent ducking for each zone, bus links for combining two units as master/slave for more inputs, and Euro-type connectors to access mono I/O buses.



RAPCOHORIZON LTI-1 STEREO INTERFACE

Designed for connecting laptops, MP3 players or other stereo 3.5mm audio output devices to pro mixers is the LTI-1 (\$135) stereo interface from RapcoHorizon (www.rapcohorizon.com). Built into a rugged, compact housing, the LTI-1 features built-in ground lift switches, a -20dB pad, mono/stereo-select switch and left/right XLR outputs.



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The Discipline of Obstacles

New Tricks From Old Technologies

Earlier this year, I interviewed engineer Richard Dodd (see "Tech's Files" in the May 2008 issue), who reminded me that on many a revered recording, signal chains were chosen from a short list of "what we have," "what we have left" or "what we have working." The updated version of that is perhaps "what we have this century"—meaning, the luxury of many options, perhaps too many.

This column focuses on the Discipline of Obstacles. Such obstacles might include—as an exercise—imposing a limit on outboard gear or plug-ins, turning the limitations of vinyl into a basic ear-training session and being creative by using simple tools to do big things.

STOP IN THE NAME OF...

At one time or another, all of us have become addicted to compression. But with the dynamics police monitoring my every move, I've been instructed to direct my mouse away from the plug-ins menu and take advantage of one very basic tool—automation!

Compression can make a mix very dense, which can be fatiguing. But assuming a performance was played dynamically, applying compression can remove dynamics that must be written back in with automation. It seems simple enough, doing the automation first creates more sonic real estate; any compression that is applied afterward will be more effective and less fatiguing.

ORANGES AND LEMONS

Along with a near-constant interest in retro gear comes a renewed interest in vinyl. Can we apply an analog aesthetic that nurtures the appreciation of recorded music? My recollection of playing records in the '60s and '70s was that the top end was a bit understated—I was always reaching for the treble. Some of that was simply the way many recordings sounded and that records were mixed/mastered for the technology of the day.

In defense of mastering engineers, analog playback involves many things beyond their control. By contrast, digital is much more consistent.

BACK IN THE DAY

Back when records and tapes were the "final products," filling the grooves with just the right balance of bass and treble was a challenge. Short recordings could be louder on disc than longer ones. In addition, the groove and stylus marriage does not tolerate low-frequency phase anomalies (panned toms in particular) or excessive sibilance.

As a fledgling engineer, I never worried much about sibilance until doing an overdub session at Sigma Sound in New York. Engineer Carla Bandini asked why I wasn't using a de-esser/high-frequency limiter; she heard some-



PHOTO EDDIE CILETTI

This method of getting a warm analog sound from your hard disk is not recommended.

thing I didn't. Sigma's New York and Philadelphia studios were close to Frankford-Wayne Mastering, giving their engineers a more intimate understanding of what could be transferred to disc.

Keep in mind that sibilance level is nearly a constant compared to the dynamic range of the voice itself: The softer the vocal, the more pronounced sibilance could be. And while digital recording makes high-frequency limiting technically unnecessary, doing so can smooth the puzzle pieces of a multichannel recording into a more homogenous blend. It's not necessary to be heavy-handed—adjust until you can hear it and then back off a little.

MID/SIDE = SUM-DIFFERENCE

One of the ways to get inside a stereo mix is with sum and difference processing—sum being left *plus* right (mono) and difference being left *minus* right:

$$\begin{aligned} \text{Encode: Sum} &= L + R & \text{Difference} &= L - R \\ \text{Decode: } 2L &= (L + R) + (L - R) & 2R &= (L + R) - (L - R) \end{aligned}$$

These simple equations show how a stereo recording is converted into its sum and difference equivalent and back again. Notice how the double-negative in the bottom equation becomes addition.

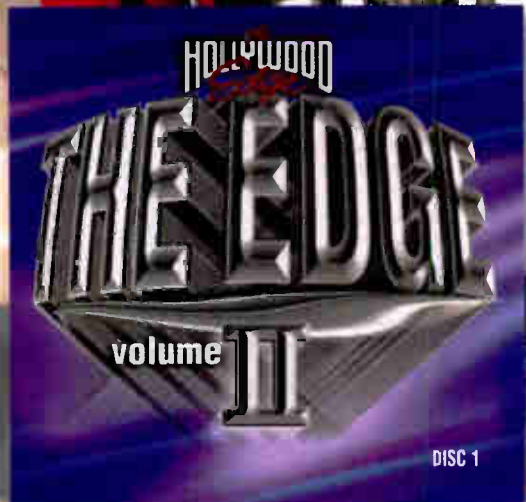
The funny thing about sum and difference processing is that the basic math to explain the encoder/decoder is simpler than setting up a workstation template. (See table, page 76.) That said, the simple math examples treat the left and right channels as if they were DC (direct current) signals. We all know that a stereo pair—as drum overheads, piano or room tracks, etc.—will have complex phase information. The math could be expanded to explain the relationships, but I'll spare you that detour.

Start by summing a mix to mono. Any tracks panned exactly up the middle will be 6 dB louder than the hard-panned tracks. For the difference signal, one channel's polarity is reversed so that "adding" becomes subtraction—

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everything panned exactly up the middle will disappear.

Listening to the difference channel, the most obvious "remainder" is what's panned—stereo reverb and effects—and for analog consoles, how much stuff is not panned as straight up the middle as you'd like. Dolby Pro Logic derives the rear-channel surround signal the same way.

An abundance of out-of-phase, low-frequency information in the difference signal translates into wasted energy that can keep a mix from being tight and punchy. Trimming such "fat" should happen during the mix process on individual tracks, but if it doesn't, don't be afraid to dial in a highpass filter.

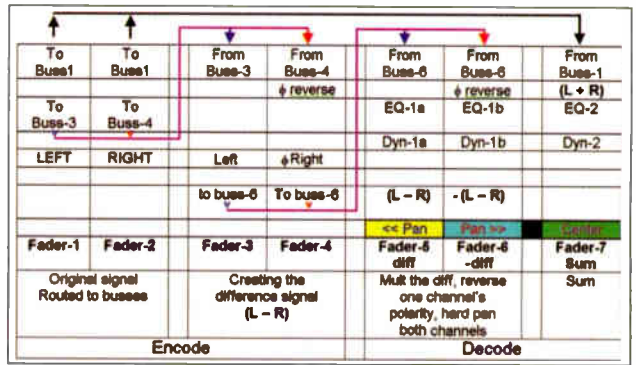
M/S TO STEREO

To reconstitute, bring the difference mix up on two faders—panning hard-left and -right—and then reverse polarity on *one* channel strip. Listening to this alone will tweak your ears a bit because the signals are 180 degrees out of phase (in mono, they will cancel), but as the sum/mono channel is gradually faded in, the mix can be as wide or as "narrow" as you like. The same technique is used by stereo mics that employ two dif-

ferent capsules—a cardioid (for mid/sum) and a figure-8 (for side/difference).

During the decode process, the mix of mid and side allows the stereo width to be adjusted after the fact. In stereo, the left and right processing (EQ, dynamics) must be identical, but in sum and difference processing, inverse processing can be very powerful. In conventional stereo, it would be almost impossible to help a dark and buried lead vocal that is competing with very edgy, hard-panned guitars. In mono, the vocal will be 6 dB louder—that and a little creative EQ can help it stand out. Panned guitars are typically two non-exact parts, so they won't be as loud. Meanwhile the vocal will be absent from the difference channel; a completely different EQ curve can make the guitars less edgy and less competitive.

Once the M/S is reconstituted as stereo,



This template encoder/decoder can be applied to any analog or digital mixer.

the balance between vocals and guitars should improve. Going too far is not a problem; you can always try again *or* mix the processed version into the original.

Great recordings and mastering are more than just balancing the mix and knowing what sounds good. One trick is knowing what used to be the delivery media's limitations and treating digital like analog. ■

This summer, Eddie's mixing a retro recording of '60s and '70s R&B. You can hear samples at www.tangible-technology.com.



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Tools of the Trade



NEUMANN TLM 67 MICROPHONE

Based on Neumann's (www.neumannusa.com) own workhorse mic from the '60s, the TLM 67 incorporates the same K 67 capsule used in the original and a new circuit design that promises to closely reproduce the sound characteristics of the classic U67, without the use of tubes. Aesthetically, the mic offers a dual color design and a 3-D emblem embossed with the likeness of Georg Neumann. The mic switches between omni, cardioid and figure-8, and features a selectable 10dB pad and highpass filter. Prices: \$3,459 with wooden box; or \$3,859 with wooden box, shock-mount, windscreen and cable.

TL AUDIO A4 SUMMING MIXER

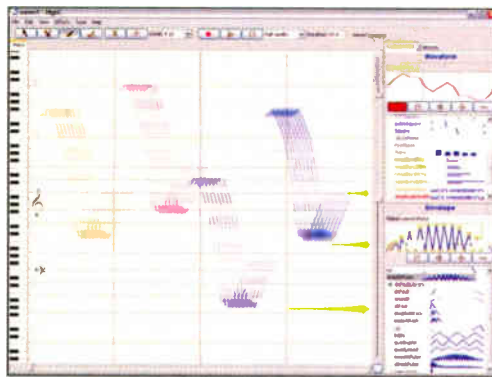
TL Audio's (www.tludio.co.uk) Ebony Series A4 (\$1,599) 16:2 summing mixer, housed in a two-rackspace unit, features 16 balanced inputs on TRS jack and D-Sub connectors with individual pan controls and brightly lit stereo analog VU meters. The box features LEDs for stereo peak, tube drive, insert on and power, and high-gloss alloy knobs that contrast with

the black-ebony faceplate. All inputs are switchable between +4 and -10; an optional tube stage on the master bus lets users dial in the exact amount of tube effect desired across the mix. Insert points on the stereo master bus section are balanced, expediting the use of stereo processors.

options. Be sure to listen to some original sample compositions at www.mixonline.com.

CHARTEROAK M900T MICROPHONE

CharterOak Acoustic Devices (www.charteroakacoustics.com) offers this small-diameter, front-address vacuum tube condenser, which uses the same cardioid, hypercardioid and omni capsules that ship with the M900 transformerless mic. The M900T (\$1,299) features a two-step sensitivity switch (0 dB and -15 dB) and 75Hz bass roll-off (6 dB per octave), and ships in a metal flight case that includes three capsules, Gotham Audio cables, power supply, shock-mount and mic clip.

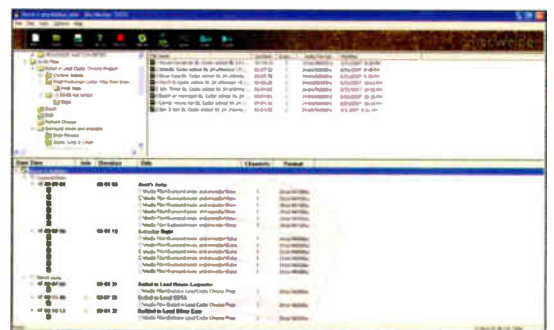


HIGHC MUSIC CREATION SOFTWARE

Thomas Baudel, a French researcher in Computer Science and Human Computer Interaction, released HighC (www.highc.org), a new graphical music-creation software tool providing easy access to advanced audio synthesis. In HighC, users draw sounds on a continuous time/frequency diagram that looks like a musical score. The interface uses familiar graphical operations such as move/resize, copy/paste and group to produce rapidly complex audio effects or full compositions. Sounds remain as individual objects that can be edited and transformed with each other at will. A free entry-level version limits playback to 22 kHz; the \$46.40 pro version provides access to higher playback rates and standard file-format export

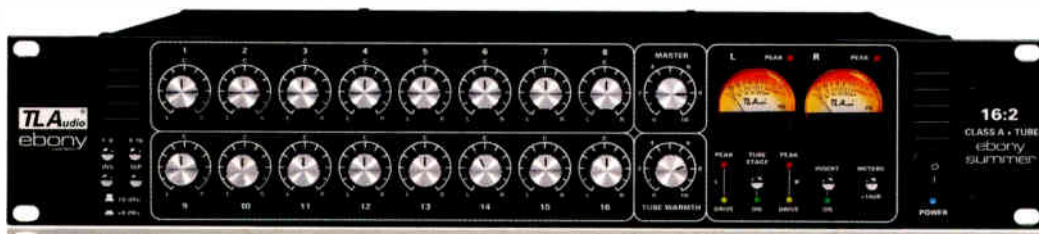
MINNETONKA DISCWELDER STEEL V. 3

The latest update of discWelder Steel from Minnetonka Audio (www.minnetonkaaudio.com), Version 3 (\$595) offers a subset of features from the company's authoring application, discWelder CHROME



II, which was recently used to author the latest DVD-A release from Ringo Starr, *Ringo 5.1*. New features include DSD import, PCM conversion, Red Book CID burning and Auto-Mirror, which takes

audio stored in the DVD-Audio zone and automatically creates or "mirrors" a Dolby Digital-encoded surround program, producing a fully compatible DVD disc that can be played back in any DVD-Video player.



PRESONUS FIRESTUDIO LIGHTPIPE

This new multichannel I/O box from PreSonus (www.presonus.com) is a 32-input, 32-output, 24-bit/96k Lightpipe-to-FireWire computer recording system. The cross-platform FireStudio (\$699) lets users convert up to 32 channels of ADAT or SMUX optical Lightpipe I/O via FireWire.

ary analog open-reel tape decks, a complete suite of REV-X reverb effects, a high-quality surround post-production package and a selection of vintage stomp boxes.



with enough DSP resources for at least one band of parametric EQ and compression on every channel (48 kHz).

MIDDLE ATLANTIC PD-915R-M

The PD-915R-M (\$213.84) is the new, advanced version of Middle Atlantic's (www.middleatlantic.com) 15-amp rackmount power unit, which provides power to nine outlets and monitors eight important parameters. The UL-listed device indicates total system load on a front-mounted LCD screen and is protected by the company's signature surge and spike protection, which does not pass noise to ground. Real-time power quality information includes voltage, current, watts, VA, frequency, power factor, kWh and run time.

MOTU 896MK3 INTERFACE

The 896mk3 (\$1,295) FireWire I/O box from MOTU (www.motu.com) works cross-platform (Mac/PC) and features onboard effects and mixing. Connectivity is via eight mic/line XLR/TRS combo jacks offering hi-Z instrument inputs for a total of

Features include MIDI I/O, balanced TRS main outputs with volume control and headphone out with volume control, and it works with Cubase, Logic, Nuendo, SONAR, Digital Performer and other DAWs. JetPLL jitter-elimination technology allows ultratight synchronization and improved imaging and clarity, along with a 34x4 DSP matrix mixer, enabling dual zero-latency stereo monitor mixes. The front panel sports LED meters for visual monitoring of all signals.

YAMAHA 01V96, 02R96 UPGRADES

Without raising prices, Yamaha (www.yamaha.com) updated the 01V96VCM (\$2,499) and 02R96VCM (\$10,299) digital mixing consoles to include a variety of new processing options. Previously available as add-on effect packages, the VCM Channel Strip processors and REV-X reverb are now standard features on the boards. Processors include classic compression and EQ units from the '70s, simulations of several legend-



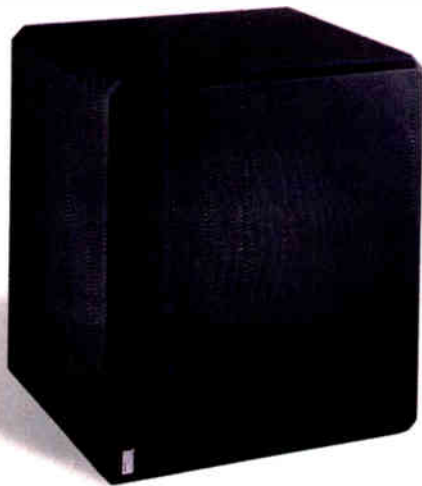
28 inputs and 32 outputs. Other features include operation up to 192 kHz, signal-overload protection, 32-bit floating-point DSP for mixing and effects processing, and two banks of configurable optical I/O. The two-rackspace box lets the user apply no-latency effects processing to inputs, outputs or buses directly in the 896mk3 hardware, independently of the computer. Effects can even be applied when the 896mk3 is operating stand-alone as a complete rackmounted mixer. Effects include reverb, parametric EQ and compression/limiting, and can be applied on every input and output (a total of 60 channels),



RØDE SHOTGUN ACCESSORIES

RØDE (www.rodemic.com) is offering a new suite of products that are designed to work with RØDE's own NTG-1, NTG-2 and NTG-3 mics, as well as any shotgun mic with a diameter of 19-20 mm or 21-22.5 mm. It includes the PG1 Cold Shoe Pistol Grip and RØDE PG2 Pistol Grip shock-mount. Also for use with shotgun mics, the companion RØDE WS6 and WS7 deluxe windshields are made of an open-cell foam inner core with an artificial fur outer. The WS7 will fit any shotgun with a maximum slot length of 186.5 mm (7 1/4-inch) and a diameter of 19-20 mm.





BAG END INFRASUB WITH P-500 AMP

Upping the ante in the power department, Bag End (www.bagend.com) has added some additional juice to its signature subwoofer. The all-new, digital P-500 (\$2,130) amplifier boasts greater power and stability and is based on the Minima One pro digital amp series. Incorporated into both the Infrasub-12 and Infrasub-18 Home and Pro Series versions, the P-500 reduces weight and heat, and promises clarity all the way down to 8 Hz.

ZAXCOM FUSION RECORDER/MIXER

Zaxcom's (www.zaxcom.com) new high-resolution audio mixer and recorder, Fusion (\$7,995), is a lightweight and power-efficient unit with no moving parts. The multitrack recorder stores audio on two redundant CompactFlash cards and includes an integrated, lockable touchscreen interface that provides access to all of the system's mixing and recording functions. Four balanced AES inputs with sample rate conversion allow eight channels of audio to come from four different devices with varying sample rates or unlocked sample rate clocks. Fusion can mix 16 inputs to eight output buses for recording up to eight tracks. The system also works as a FireWire bus master to control and supply power to external hard drives or DVD-RAM drives. An optional effects package features a soft-knee compressor, high-

pass filter, delay and 3-band EQ with peak or shelving filters. The system includes six filters per channel, with frequency-selectable highpass filters included and optional EQ and notch filters.

BRAUNER PHANTHERA V MIC

Taking off in a more "variable" style where its cardioid-only big brother, Panthera, leaves off, Brauner (www.brauner-microphones.com) introduces the Panthera V, offering cardioid, omni and figure-8 patterns, and a switchable -10dB pad. It ships with a shock-mount and case.

PROMINY SC ELECTRIC GUITAR

Giving would-be rock gods more opportunities to shred inside the box, Prominy (www.prominy.com) offers the SC Electric guitar, a software guitar instrument that replicates the sound of the Fender Stratocaster and includes more than 64 Gigabytes across 123,000 samples. The \$399 package includes Kontakt Player 2 and offers real-time playability, reproduction of all five pickup positions, pre-loaded chord samples, auto-stroke detection, feedback, double-tracking and drop-tuned samples (from low C to low D-sharp). For more realism, the sounds are sampled at all fret positions on every string, while picking noises are recorded in multiple forms on all frets and strings.

VIENNA ENSEMBLE 3

Promising the first MIDI and audio LAN solution that works universally on Macs

and PCs, the Vienna Symphonic Library (vsl.co.at) team has released Vienna Ensemble 3 (95 Euros). Developed for exclusive use with Vienna Instruments, VE3 can host numerous Vienna Instruments plugins on any number of slave machines and route all of those audio streams back to the main machine via an Ethernet cable. All computing (including GUI rendering) and hard disk streaming is done on the

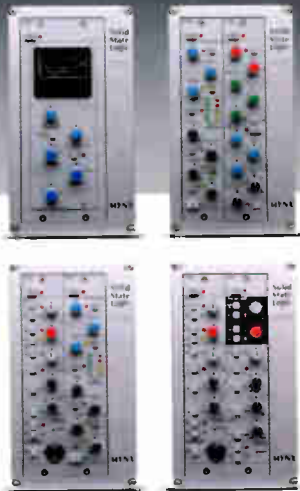


slave machine(s), preserving the master computer's CPU resources. The software also includes a stand-alone mode allowing the user to run VE3 and the sequencer or notation software on the same computer. Plug-in formats include RTAS (Mac PPC and Intel), Audio Units (Mac PPC and Intel) and VST (PC, Mac PPC and Intel). VE3 has reportedly been tested with Cubase, Digital Performer, Logic Pro, Pro Tools, Sibelius and SONAR. ■



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Cakewalk SONAR 7 Producer Edition

Upgrade Highlights Sequencer and Workflow Improvements

Cakewalk has been consistent about upgrading SONAR annually, and the improvements have been significant. For instance, SONAR 5 pushed the envelope by being the first 64-bit DAW, and last year SONAR 6 was fortified with ACT (Active Controller Technology), a dynamic means of remapping MIDI controls, AudioSnap audio quantizing, Session Drummer 2 and the robust VC-64 Vintage Channel.

SONAR 7 Producer Edition (\$619) is packed with a slew of new features. A hefty MIDI overhaul includes Smart MIDI Tools and enhanced MIDI editing. Internal side-chaining and delay compensation for external hardware are also welcome features. The comprehensive Roland V-Vocal is also enhanced with MIDI functionality. True linear-phase mastering plug-ins, Eu-Con support, workflow enhancements and new delivery options are also included in this update.

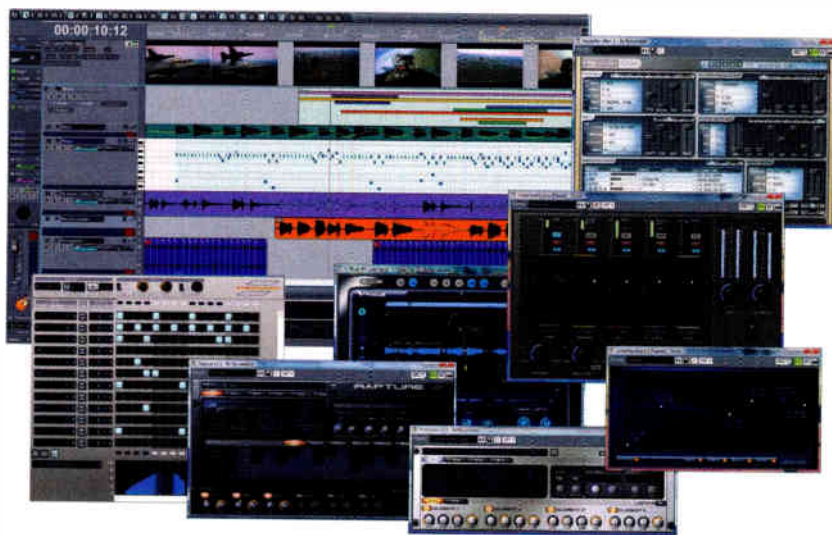
DUELING SYSTEMS

I installed SONAR 7 on two machines with two different operating systems, including a Mac. Cakewalk hasn't gone cross-platform, but advertises SONAR 7 running on a Mac under Boot Camp. I had a Windows XP partition on an Intel 2.66GHz dual-core Mac running OS 10.4.9 and a self-built Windows machine running Windows Vista Ultimate 32-bit. Powering the Windows machine was a 3GHz Intel Core Extreme CPU Q6850 with 4 GB of RAM. After the painless installations, both systems were updated to SONAR 7.0.2.

For audio interface duties, I used two different setups. The Windows Vista machine was coupled with a MOTU 828mkII FireWire interface. On the Mac system, I used a new Lynx AES16e card connected to a Mytek 8x192 AD/DA via AES/EBU connections. As for MIDI controller duties, an M-Audio Keystation 49e fit the bill.

SHOW ME THE MIDI

SONAR 7's Integrated Step Sequencer view allows for easy creation and manipulation of drum programming and rhythmic, repetitive patterns. Each sequence can have up to 16 steps per beat with 64 beats per pattern, including support for odd meters and a "fit-to-



Cakewalk SONAR 7's work environment showing the LP-64 multiband compressor, Roland V-Vocal and the new Step Sequencer

quarters" function. Further controls include toggling between mono and polyphonic modes, articulation, swing and portamento.

I inserted a soft synth with an instance of Session Drummer 2; SONAR conveniently created a track folder with a MIDI track and an instrument track. I loaded a kit within Session Drummer 2, and to see the proper drum sounds in the Step Sequencer view, I assigned the appropriate drum map on the MIDI track output. Creating a pattern is as easy as left-clicking to add notes and right-clicking to remove notes. As the pattern cycled playback, I easily created a groove pattern that didn't require much technical attention, allowing the creativity to flow. Once created, manipulation is as easy as Ctrl-click-dragging to join and Ctrl-right-clicking to separate notes. Velocity is controlled with a shift-drag up or down. Once you have an arrangement, Step Sequencer clips work just like MIDI Groove clips in Track view whereby you can just click-drag them out to repeat.

Streamlining workflow has always been a strong point for SONAR releases, and with V. 7 the application pushes forward in the MIDI department with Smart MIDI Tools. The original Select, Draw and Erase tools may be completely configured under the Options>PRV Tool Configuration menu. Tool behaviors based on the cursor's posi-

tion, left/middle/right mouse buttons and combinations with modifier keys can be programmed to any MIDI editing action. Once Tools are programmed to taste, you have a complete custom MIDI work environment that can be saved in presets. For those of you accustomed to other DAWs, you'll appreciate built-in presets from programs such as Logic 7, Cubase and Digital Performer.

Other MIDI enhancements include a convenient MIDI Magnifier in the Piano Roll view, which allows you to cursor over dense MIDI data and edit without changing the overall environment zoom level: Select the MIDI Magnifier in the Tool Bar, hover over the MIDI notes with the mouse and a microscope action zooms in on the specific area, allowing you to edit away. Improvements to MIDI visuals include a Velocity Colorizer, which provides velocity-dependent color coding (tinting) of notes; and MIDI Meters (responsive to velocity information) are now standard in the Track and Console view. Additional MIDI editing functions added to the MIDI tool palette now include Split Notes, Glue Notes, Event Mute, Drag Quantize and Repeat. Further MIDI implementation is added to Roland V-Vocal 1.5 with Pitch-to-MIDI conversion, allowing, for example, a synth track accompaniment of a vocal performance via the vocal's MIDI data for added texture or effects.

COMING THIS SEPTEMBER

the all new **MIX**

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Josh Homme, Artist/Producer,
Queens of the Stone Age

SIGMA

Active ribbon microphone



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FIELD TEST



SONAR 7 features hardware insert delay compensation. This is the insert view, which shows offset in samples.

NEW INSTRUMENTS AND PLUG-INS

Virtual instruments are a welcome feature with any DAW, and SONAR 7's impressive stock includes favorites like Session Drummer 2, the PSYN II subtractive synth and Pentagon 1 virtual analog synths; Cakewalk has also added a few more to the roster. DropZone is a drag-and-drop sampler and REX loop editor stocked with pads and atmospheres, basses, drum kits and REX loops. The Z3TA+ 1.5 is an analog-style synth offering filters, six oscillators, built-in effects and band-limiting technology. Dimension LE, a lighter version of Dimension Pro, features more than 400 sound programs spanning organ, bass, electric piano samples and synth sounds including the Garritan Pocket Orchestra, which comprises strings, brass, woodwinds, keyboards and percussion. Although I enjoyed playing with this library, some of the samples were a bit noisy for my taste. As an example, the Viola Legato 3 was a bit raspy regardless of which sample rate I used (I tried 48 to 192 kHz) or machine I used. This was more of a problem when isolated; once in a mix, the issue was masked. For the electronica crowd, Cakewalk also includes a version of its Rapture synthesizer, Rapture LE, with more than 200 programs and hundreds of oscillator shapes.

It's always a bonus when you don't have to spend a fortune on third-party plugs, and SONAR users have always been accustomed to greats like the Sonitus bundle. Perfect Space convolution reverb and SONAR 6's VC-64. SONAR 7 sweetens the deal with new mastering plug-ins. The LP-64 linear phase EQ and the LP-64 multiband comp/limiter provide accurate control without any phase

shifts, comb filtering or dull transients during processing. The LP-64 EQ offers 20 control points with the usual frequency, gain and Q manipulation. The multiband compressor includes two presets for mastering: lighter or stronger. A program-dependent release option provides five bands to control independent attack, release, threshold, ratio and gain. I applied these over bus masters, and the results were always impressive. The presets were great starting points and sonically were as good as other expensive plug-in bundles. Another polishing plug-in is Boost 11, a limiter/volume maximizer with a "look-ahead" feature and program-dependent release (PDR). Boost 11 provides dynamic waveform displays in real time of input vs. output, and lets you audition that loud, final mix sound.

SONAR 7 also now incorporates internal side-chaining for the Sonitus fx Gate, Sonitus fx Compressor and the VC-64. Triggering instruments with other instruments, de-essing and ducking was a breeze. Simply insert one of the supported plug-ins over a track and address an output of a bus on another track to feed the corresponding plug-in/track.

BUT WAIT, THERE'S MORE

Incorporating external gear with DAWs can be a bit of a latency challenge. SONAR 7 alleviates this issue with its new seamless External Inserts with automatic delay compensation. Available over a track or bus, you have control over send/return assignments, automation for send/return gain and phase. Workflow improvements have been made for faster track I/O assignments. Now you can assign consecutive or identical inputs over selected tracks. My only problem was,

I couldn't find a way to assign consecutive outputs over tracks, just identical outputs. This feature would be beneficial when the user is assigning all outputs to a mixing console. Other workflow enhancements include a new Dim Solo mode that allows soloing of tracks without completely muting the others; rather, it "dims" them at -6, -12 or -18 dB.

New import and delivery options keep this DAW current with the online audio world. SONAR 7 is fortified with the ability to import/export Sony Wave-64 (true 64-bit file format designed to overcome the 2GB limitation), AIFF, CAF, FLAC and SD2. To my surprise, with the immense popularity of iTunes, there is no support for AAC format. However, SONAR has a feature that supports external command-line audio encoders, so it is possible to configure this DAW to work with an app like FAAC (Freeware Advanced Audio Coder) to allow you to export AAC audio seamlessly from SONAR itself. SONAR 7 can now rip audio CDs with burning integrated within the app. Cakewalk's Publisher 2 allows direct publishing online, enabling you to create playlists within a customized, streaming Flash-based music player. Publisher 2 connects to a Web host's FTP account, where the player can be uploaded to an artist's Website and generate an HTML tag.

A TRULY SELF-CONTAINED SYSTEM

It's a no-brainer—if you implement MIDI into your workflow, SONAR 7 is well worth the upgrade. The new Step Sequencer allows drum programming to flow with minimal effort. In addition, complete customization and integration of the mouse with the Smart MIDI tools is a big time-saver. The MIDI Magnifier will leave many wondering how they ever worked without it. The new instruments—Rapture LE and Dimension LE—are attractive additions, especially Dimension with its abundant sounds including the Garritan Pocket Orchestra. The linear phase LP-64 EQ and multiband comp/limiter are great-sounding additions to the plug-in roster.

SONAR releases have always been stuffed with practical features, and V. 7 is no exception, with faster track assignments, a Dim Solo mode, internal side-chaining and hardware inserts. SONAR's ability to create, complete and deliver music via Publisher 2 to an artist's Website or MySpace account all "in the box" makes it truly a self-contained DAW.

Cakewalk, 617/423-9004, www.cakewalk.com. ■

When he wrote this, engineer/studio owner Tony Nunes was rooting for his native Portugal to win the Euro Cup.

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WAVEMACHINE LABS

Sonic Reality Ocean Way Drums Library

High-End Drum Sounds With a Platinum Legacy

The first world-class studio I ever set foot in was Ocean Way in Hollywood. The Gold and Platinum albums lining the walls beamed an aura of the immense talent of those who worked there. Now, Sonic Reality's Ocean Way Drums (OWD) drum-sample library packages the sound, rooms and one-of-a-kind mic collection found in that special place. Ocean Way studio owner Allen Sides and engineer Steven Miller spent two years painstakingly recording and creating the collection. There are no loops, pre-sequenced grooves or step sequences; OWD focuses on individual drum hits, delivered via Native Instruments' Kontakt 2 sample player, and available in all the usual plug-in formats.

OWD's 19 drum kits cover the gamut from loose-sounding vintage drums to tight modern sets. Snares range from deep rock to popping piccolos, and include rolls, rim shots and ghost notes. Cymbals include tiny splashes to big rides, and feature numerous variations: bell hits, chokes, multiple edge hits and rolls. Hi-hats include sloppy, open rock sounds and crisp jazz timbres—with multiple open-hat positions. All instruments were hit with a stick—no brush or mallet samples.

PICK YOUR PACKAGE

The \$995 Gold edition has 40 GB of 48kHz samples spread over 19 different kits. Offering the same sets at 96 kHz, plus extra kick drums, the 120GB Platinum edition (\$1,995) is pre-installed on a USB 2/FireWire hard drive. All kits have presets mapped for General MIDI or Sonic Reality's IMAP format for greater flexibility when playing "keyboard drums."

OWD makes heavy use of Kontakt's direct-from-disk feature, which streams samples from the hard drive. Most instruments stream 10 or more channels per drum hit so it's easy to exceed 40 audio channels when multiple drums are played at once; therefore, OWD should run on its own (7,200 rpm or faster) hard drive. I had no problems using the Audio Units version of OWD in Apple Logic Pro 8.

Opening OWD in Logic presents a version of Kontakt 2 that's tailored for OWD. To me, the Kontakt workspace felt unintuitive,

and users of plug-ins like BFD or Addictive Drums will probably want more from the interface. There are no images of the actual sampled drums, and the labels for selecting kits and drums are generic, such as "Kit 1" or "Snare Drum 2." This convention isn't very useful when trying to find a piccolo snare.

On the other hand, using your ears to sift through the options is not necessarily a bad thing when listening to drums that sound so good. Ocean Way's custom-built analog console yields drums with sparkling transient detail and a warm, defined bottom end. Many drums also feature an option for blending samples that were processed through hard-to-find gear such as an AMS RMX-16 digital reverb—a coveted mainstay in high-end studios.

Complete drum kit presets come in the form of what Kontakt refers to as "multis." Each drum in the kit is then represented by an instrument block with gain knobs for each available channel, such as U47, AKG, OH, Room 1, etc. A pull-down menu can display channel panners, envelope settings or a velocity view to tailor how the drum responds dynamically to how hard you play your controller. These controls are independent on every instrument and allow creative options that aren't possible with a conventionally recorded kit, such as shortening the decay on the kick's room mics while leaving a long room decay on the snare.

I had fun with the snares. Each kit has snare-on and snare-off versions. In snare-off presets, the other drums in the kit, such as toms and kick, were played without snare rattle bleeding into the mics. One approach I loved was using stereo AKG C-12s about 18 inches over the snare and two rare Sony 55Ps (also in stereo) for snare bottom. This unique flavor sounded wonderful. For contrast, the snares were also recorded with Shure SM57s in more traditional positions.

With this many controls available, balancing the relative instruments within a kit could prove difficult, so OWD combines various channels from each instrument onto more manageable buses. The buses are represented in Kontakt's mixer as kick, snare, hat and toms, along with overhead and ambience channels. Each bus has its own vol-



OWD comes with six preset mixes per kit that can be altered by the user.

ume fader and includes multiple insert slots for additional processing.

To get quick results without having to build a sound from scratch, each kit has six ready-to-go preset mixes. I wouldn't typically think that "producing by preset" would be useful, but these settings are almost like being part of a Sides clinic on mixing drums.

ALL ABOUT THE SOUND

What matters most is how drums sound in the mix. Playing sequenced drums from some of my projects, I quickly re-assigned them to OWD. I found it unnecessary to use any additional processing with OWD; I just blended the provided mics to my liking and simply let the undoctored samples shine through. As a bonus, at press time, Sonic Reality announced that users can drive OWD from Drumagog by downloading either MidiPipe (Mac) or MIDI Yoke (PC).

I'm not a fan of the Kontakt interface, but the drum sounds sold me on OWD. The mic choices, the room, processing options and the excellent recordings make this a one-of-a-kind collection. OWD brings you the sound of a unique and special place—even if you've never set foot on the Sunset Strip.

Sonic Reality, www.sonicreality.com. ■

Robert Brock is an engineer, music producer, composer and pianist.

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With an installed studio cost of over \$1,000,000, the Focusrite Studio console (72+ channels) was probably the most expensive, and sonically impressive console ever built. Its unique sound has contributed to countless gold and platinum recordings over the last two decades.

The Focusrite consoles were based around the ISA110 Microphone Pre-amplifier and EQ module, originally commissioned in 1987 for AIR studios, London, to extend the custom Neve console in Studio One. Sir George Martin, the AIR Studios team and Focusrite tuned the microphone pre-amplifier by ear. It went on to form the cornerstone of all ISA products. The topology has never changed, except for the addition of a variable impedance circuit, providing ISA users with increased control and a broader variety of sounds.

The new Focusrite ISA One shares the same pre-amplifier topology, featuring the original Lundahl LL1538 transformer and bespoke Zobel network. A host of other features, including an independent D.I. and an optional class-leading 192kHz A-D converter, ensure this classic design fits seamlessly into your modern studio environment.

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Minnetonka Audio Workflow Engine (AWE)

Automated Editing, Encoding, Conversion and Processing

Before the boom of digital audio, managing your resources meant keeping your work well-documented and your tape reels in a cool, dry place. Today, knowing where your digital audio resources are (before and after mixing and processing), managing your jobs, keeping repetitive tasks consistent and passing the best possible work to the next person in the audio chain are major concerns. To help organize this sometimes-jumbled world of computerized jobsites comes Minnetonka's Audio Workflow Engine (AWE), a scalable set of Mac-based tools designed for automating and organizing audio files during the editing, signal processing, encoding and conversion processes.

LET'S GET ACQUAINTED

Minimum requirements for AWE are a G4 running at 1 GHz or better or any Intel Mac, 256 RAM and 40 MB of free drive space. I ran AWE on a MacBook Intel Core 2 Duo running at 2.2 GHz with OS Version 10.5.2 with good results. AWE is iLok-compatible or can be authorized using the call/answer method.

When you first open AWE, you are greeted with a GUI sporting four tabs that take you through setting up a job. The Input tab selects files to be processed from a browser; the Processing tab offers a choice of "process"; Output determines where and how files will be stored once the job is done; and Job Queue lets you monitor and prioritize jobs, stacking them up for processing, even across a network.

AWE includes automated audio processing tools so you can append, cut, fade in/out, insert silence, mute, normalize, convert sample rates, apply delay compensation, trim time, change volume and even change the input/output assignments on your computer's I/O device. You could easily perform these tasks individually and be done with it, provided that you're only processing a small, predetermined number of files. But the power of AWE comes into play when you have to do this across a vast range of resources, such as a game audio content provider who must create thousands of short files that must be downsampled for integration into a game engine, or during



AWE can run several plug-in jobs offline at the same time; here, a Normalize plug-in is shown along with the iZotope Multi-band compressor and Mastering EQ.

the creation of repetitive files for phone calls on-hold, Web or broadcast that require fade in/out, normalized volume and/or 5.1 encoding. In these situations, AWE shines.

While the stock set of AWE processors are very good—for instance, you can perform sample rate conversions from 8 kHz up to 192 kHz—AWE also offers two optional companion processor packages: the Master Bundle and the SurCode for Dolby Digital plug-in. The Master Bundle takes the AWE's operational ability to the next level, providing Minnetonka Audio's TimeStretch and PitchShift plug-ins, which are powered by iZotope's Radius plug-in technology, as well as iZotope's Mastering EQ (with high/low shelving and four bell curves), Mastering Limiter/Maximizer, Mastering Reverb plate/room simulator and Multi-Band compressor plug-ins. The Dolby Digital plug-in lets you automate and create fully compliant AC-3 files for playback in any Dolby Digital-capable receiver or decoder.

STOCKED-UP TEST RUN

I started testing AWE by surfing the browser using the Input tab. You can use this method or simply drag-and-drop files into the Input

structure. I loaded my files, clicked the Processing tab and chose Fade In as the first job in my processing chain. This brought up the simple Fade In GUI, which offers a choice of stock linear or logarithmic fades and the fade time. (I'd like to see more fade choices here.) I then double-clicked on Fade Out, adding the next process to my chain. I liked how I could build my chain with any number of plug-ins. Selecting a 5-second Log fade-out. I was ready to run my job, but not before auditioning it using the transport controls in the Preview section. Although it wasn't effective with such a short fade-in/out, you can change parameters on all plugs in real time and hear the results live.

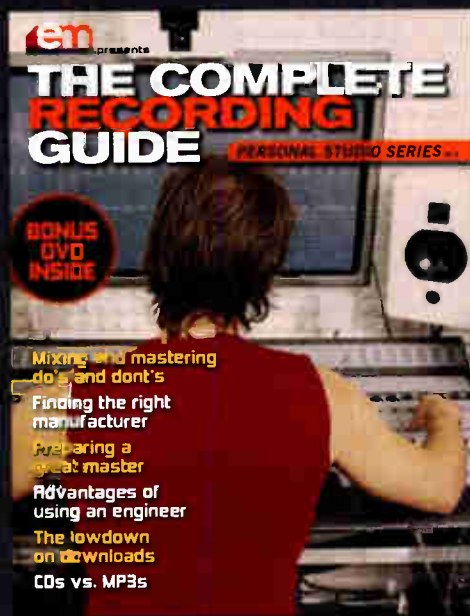
Once satisfied with my fades, I went to the Output window to see where it would store my files. You can direct the system to overwrite the existing files, or generate its own folder or one of your choice in any location. You can also modify the output files by pre-pending or appending the date, time, job name or custom name. I hit the Submit button and watched my job progress in the Job Queue. If you're on a network, you can assign the job a priority to optimize system performance. It took less than a minute to



present

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AM I IN AWE?

AWE is well thought-out, intuitive and good at automating and organizing large amounts of files and processes. Once I was familiar with the interface's hierarchy and flow, it was easy to do any task; it works basically the same no matter what tool(s) you choose.

AWE will become more valuable as audio processes and applications become increasingly complex. This set of tools would be perfect for game audio producers, Web audio pros, music librarians, mastering engineers, post houses or anyone who does a lot of repetitive processing—locally or across a network. As a time-saver that increases output and improves consistency and workflow, AWE is well worth looking into. Prices: AWE, \$395; Master Bundle, \$295; and Dolby Digital for AudioTools, \$495.

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Kevin Becka is Mix's technical editor.

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Avant Electronics Avantone CK-40 Stereo Mic

Flat Response and Independently Switchable Twin Capsules

Topping Avant Electronics' line of C Series condenser mics, the Avantone CK-40 uses two 35mm, center-terminated gold-sputtered capsules mounted in separate cavities—one above the other. While the lower-capsule assembly is fixed, the upper rotates from 90 to 270 degrees. Priced at \$599, the CK-40 ships with a basket shock-mount, 32-foot cable, splitter/fan-out box, foam pop filter and padded aluminum attaché case.

A CLOSER LOOK INSIDE

The CK-40's chassis and electronics are housed in a machined-brass tube and held in place by a large chromed nut at the bottom. The housing is finished in a metallic Cabernet wine-red that contrasts with chrome plating on the mesh screening and other metal parts. Inside, two matched circuit boards contain the discrete Class-A design FET (Field Effect Transistor) head amps and line drivers. There are no transformers in this mic. The mic is rated at just 17dBA (A-weighted) noise level, with a max SPL of 147 dB and a 20 to 20k Hz (± 3 dB) frequency response. A single, 5-pin stereo XLR connector at the bottom of the mic sends audio for both mics down a cable to a small splitter box terminating in standard male 3-pin XLRs. The mic is phantom-powered and draws 3 mA of current for each capsule.

The CK-40 has two sets of rugged, on-board, three-way toggle switches: One provides cardioid, omni and figure-8 pattern selections; the other lets you choose between either a low-frequency roll-off filter (80Hz, 6dB/octave), flat response or -10 dB of attenuation.

INTO THE STUDIO

I first tested the CK-40 on an acoustic guitar for a rock session. I don't usually record acoustics using more than one mic because the time and tedium of setting up two condensers as an accurate stereo pair usually precludes their use. I set the CK-40's capsules as crossed cardioids in a 90-degree angle, X/Y configuration. For all my acoustic guitar recordings, I placed the CK-40 about 18 inches from the soundhole and left both the attenuator and roll-off switched off. I

used my FiveFish Studios SC-1 preamps set to about 50 dB of gain.

Recording in Pro Tools, I panned the two mic tracks left and right for a noticeable stereo image that was fuller sounding than the same guitar recorded with just one mic; it was fully mono-compatible without being super-wide. The result was an up-front recording of the instrument. Without any processing, I easily achieved an accurate documentation of the performance, the instrument's sound and a little of the recording space around it.

Sonically, the CK-40 does not "hype" either the high or the low frequencies—its response seems very flat, with a clear focus on the midrange frequencies. The -10dB pad is necessary for most sources, such as close drums or electric guitar amps, where the mic's output level will overload your preamp.

Next, I tried two crossed figure-8 patterns rotated 90 degrees from one another. This is the classic Blumlein array, and to set the angle difference between the top and bottom capsules accurately, the CK-40 has several "dots" at 15, 30, 45 and 90 degrees on the upper-mic's skirt. This time, the sound image was wider and contained more of the ambience of the recording space. It's a lovely sound aided by the back-facing pattern lobes of the two figure-8 patterns pulling in the room's sound. Although this configuration is less mono-compatible, in a good-sounding room it gives you a great output for a featured acoustic guitar performance or solo.

I then tried an M/S recording. The bottom capsule was set to cardioid to serve as the M, or "mid" component, while the S, or "side" component, came from the top capsule set to figure-8 and facing sideways at right angles to the sound source. I used bx_digital's M/S mastering equalizer plug-in to record and process the separate M and S signals into L/R stereo, although you could easily configure three faders in Pro Tools to de-matrix the M/S signals to conventional stereo. I liked using the mic for this method of stereo recording because it is perfectly safe for mono and I could manipulate the stereo width after the recording.

You can't beat a phase-coherent stereo room mic for drums. I tried many different



distances and stereo methods. If you put the mic right in front of the kit, you'll have a killer, single-mic drum sound; you could perhaps add a close-miked kick drum for punch. When I moved the mic farther away, it seemed to enhance the close drum mics easily to create a larger space around the kit. Again, I preferred the Blumlein method because it is wide and requires no post-processing. Compromising the stereo width by moving the L/R panning inward will adjust the stereo size to fit the production.

AFFORDABLE TWIN TRANSDUCER

The CK-40 opens many stereo possibilities because it provides you with easy access to recording methods and sounds that you cannot obtain with single mics. Experimenting with recording in stereo has never been simpler. However, keep in mind that it also works well using just one of the capsules like any large-diaphragm condenser.

Undeniably, the CK-40's sonically flat performance and flexibility make it an excellent first-time professional stereo mic purchase.

Avant Electronics, 909/931-9061, www.avantelectronics.com. ■

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At Famous Studios in Mumbai (L-R): engineer Farhad Dadyburjor, violinist Kala Ramnath, keyboardist/arranger Louiz Banks, executive producer Yusuf Gandhi and producer Bob Belden

"MILES FROM INDIA"

MUSICAL WORLDS COLLIDE AND COME TOGETHER

By Blair Jackson

In many ways, *Miles From India*—a two-CD set of Indian musicians and a host of Miles Davis alumni interpreting a number of the jazz great's works—is a natural. Many of his pieces—particularly from his early electric period—were rhythmically intriguing and open-ended enough that it is easy to imagine Indian percussion fitting in. Plus, on Davis' *Bitches Brew* ('70) and *On the Corner* ('72) sessions, he actually used some Indian musicians on a few tracks, so he clearly had an affinity for those exotic textures.

Even so, *Miles From India* is full of surprises, as mellifluous Indian vocalists soar above trumpet

and electric guitar; tablas and traps combine to create driving rhythms; and sitar and bass clarinet merge in unlikely ways over the course of a dozen wild, diverse and unpredictable tracks, ranging from classic pieces like "So What" and "All Blues" (from *Kind of Blue*) to "It's About That Time" (*In a Silent Way*), "Spanish Key" and "Miles Runs the Voodoo Down" (*Bitches Brew*) and "Ife" (*On the Corner*). What's perhaps

most remarkable about the project, though, is that the Indian and American musicians were recorded months apart in their native countries; the performances were then stitched together, much as Davis producer Teo Macero assembled some of Davis' late-'60s and early '70s albums.

At the helm of this unusual project was producer

Bob Belden, who has shepherded the release of many of Columbia's "complete recordings" boxes of Davis' music, the most recent of which was last year's epic six-CD *On the Corner Sessions*. Belden conceived the project along with veteran executive producer Yusuf Gandhi (whose specialty has been soundtrack releases), and then was on hand producing as the project moved from Mumbai to New York City between November 2006 and July 2007.

The foundations for each of the tracks were laid in India, with Nepalese jazz keyboardist Louiz Banks working closely with Belden to figure out some basic arrangement notions, tempos (some of which were changed from the original recordings) and ideas for grooves. The Mumbai sessions took place at Famous Studios' Galactica A, which has a Pro Tools HD3 system, Euphonix System 5-MC console, Dynaudio Acoustics monitoring, a large selection of analog and digital outboard gear, and plug-ins galore. Microphones used on the sessions included B&K 4006s and 4007s, Neumann U67s and 87s, Manley Reference, Schoeps MKs and Collettes, AKG C-414s and C-12s, "and some others from my personal collection," comments session engineer Farhad Dadyburjor. "These mostly went through Focusrite, Avalon and Digi pre's and some through the console. Mostly, the instruments were miked in mono; sometimes dual-mono and sometimes stereo. Bob was always admonishing me to keep things simple as we had no idea where the mixes and overdubs might happen at that point."

Dadyburjor says that all the players were "the cream of Indian musicians," and that a typical session might involve listening to the original recorded versions a couple of times, "deciding on a tempo and letting it rip. We had a lot of experimentation with different combinations and setups. I pretty much printed everything, and a lot of the rough or guide parts were used in the final. They sometimes played

—CONTINUED ON PAGE 100





Phantom Planet (L-R): drummer Jeff Conrad, lead vocalist Alex Greenwald, guitarist Darren Robinson and bassist Sam Ferrar

PHANTOM PLANET

POP AND POWER
FROM L.A. FOURSOME

By Blair Jackson

Like a lot of people, I first heard the L.A. band Phantom Planet when their irresistible pop anthem "California" was selected to be the theme song for the excellent Fox teen dramedy *The O.C.* Getting a song on a series that lasts four seasons is a pretty good score, but it can also pigeonhole a band. Though Phantom Planet have long had strong pop leanings, "California" wasn't exactly typical of their sound—they had many harder-edged tunes, a penchant for somewhat unusual sonics (their second album, *The Guest*, was co-produced by Mitchell Froom and Tchad Blake) and the piano bounce of their hit masked the fact that they have always really been a guitar band.

And in this case, "always" is a surprisingly long time: The original group—of which three members remain—got together some 13 years ago when they were in their mid-teens in high school. They played on the indie circuit in Southern California and two of the members also pursued acting: Charismatic leader/singer/songwriter/guitarist Alex Greenwald had a role in the cult film *Donnie Darko* and drummer Jason Schwartzman—nephew of director Francis Coppola—became a bona-fide movie star, appearing in such flicks as *Rushmore*, *Slackers*, *I Heart Huckabees* and *Marie Antoinette*. He left the band in the summer of 2003 and

was replaced by Jeff Conrad. The other two founding members were bassist Sam Ferrar and guitarist Darren Robinson, who remain

Phantom Planet's latest, *Raise the Dead* (on the hip indie label Fueled By Ramen), marks a further evolution of the group's harder, rockin' side. While still filled with strong hooks and superb varied lead vocals from Greenwald that range from pop to deeply passionate, it's the avalanche of guitars played by Greenwald and Robinson that really define this album's highly adventurous sound. After a couple of false starts with other producers, the band eventually tagged Tony Berg, who has helmed cool discs by a slew of great artists through the years, including Edie Brickell, Michael Penn, Public Image, Squeeze, X, The Replacements, Pete Dinklage and fabulous newcomer Jessica Hoop. He's known for working well with strong songwriters, and in Phantom Planet's Greenwald, he certainly has that. But it also turns out he has deep roots with the band.

"I've known them since they were boys," Berg says by phone from Williamsburg, Va., where he and his engineer, Shawn Everett, were tracking the new Bruce Hornsby album at the pianist's home studio. "I was at Geffen when they were signed; they were about 16 then. And they've been coming around my house for 12 years. In fact, Alex, the singer, is my daughter's best friend. She has a band, too—The Like, on Geffen, with Mitch Froom's daughter and Pete Thomas' daughter—and they gigged together for years. I'm very close to Jason, Alex and Sam; they come around the house a lot."



He calls Greenwald "an incredibly talented guy; very dedicated and prolific. For this album, Alex came in with 103 songs fully demoesd. The only person who's ever presented me more songs was Peter Gabriel," Berg says with a laugh. "We weeded that down to 30, we recorded 25 and then we chose the 12 that ended up on the album. Alex makes extremely sophisticated [Apple] GarageBand demos on his laptop; they're very impressive. He really puts a lot into the arrangements of his demos, and since he's a multi-instrumentalist they have a lot of textures. His arrangements don't always stick or determine how a song might ultimately sound, but he really invests himself in the process. And there were times on this album when we actually borrowed pieces from his demos and flew them into the ultimate recording."

Berg says that one key piece of gear that

—CONTINUED ON PAGE 102

THE LOVIN' SPOONFUL'S "DO YOU BELIEVE IN MAGIC"

By Gary Eskow

Fortunately, nice guys don't always finish last. Sometimes they reach the top of the hill and stay there for quite some time. One such nice guy is John Sebastian, the principal writer and lead singer of the Lovin' Spoonful and composer of this month's "Classic Tracks," "Do You Believe in Magic."

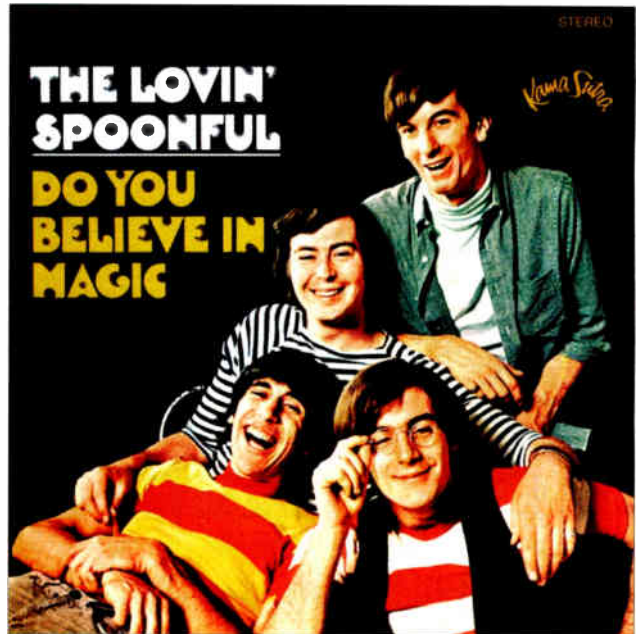
Raised in New York City's Greenwich Village, long-haired Sebastian spent a fair amount of time during his high school years getting hassled by blue bloods at the Blair Academy, a private school in New Jersey. But he also hung out with artists back on the block during the off-season. The Village gave Sebastian first-hand exposure to some of the best musicians in the folk universe of the late '50s and early '60s, including Woody Guthrie and Burl Ives. As a member of the Even Dozen Jug Band, The Mugwumps and eventually the Lovin' Spoonful, Sebastian would take elements of folk, jug band and rock and toss them together to create his own sound.

Sebastian eventually teamed up with guitarist Zal Yanovsky, another luminary in the New York folk scene. Along with drummer Joe Butler and bass player Steve Boone, they formed a group that took its name from a line from a Mississippi John Hurt song: the Lovin' Spoonful. A rapid rise, however, wasn't in the cards. Led by The Beatles, the British Invasion was in full throttle and record execs of the day couldn't imagine that the Spoonful's folk-influenced sound would attract a sizable fan base.

"We were turned down by every record company in New York City," says Sebastian. "But we'd play each night. For a while, we were working at a club that was mainly for beatniks. The crowd would snap their fingers in mild appreciation of what we were doing. Hardly the rock 'n' roll audience of your dreams!"

"There were some odd cabaret regulations back in those days, and one of them outlawed dancing," Sebastian continues. "People in these clubs didn't routinely dance anyway like they did uptown at the Peppermint Lounge. But this one night, while we were playing our set, a girl started dancing by herself. It wasn't the Lindy, but some new, personally expressive set of movements, the kind of dancing you were going to see at Woodstock in a few years. We looked at each other, and without saying a word shared a common thought: Our moment had arrived! Sure enough, the following week the audience had changed. Those 50-year-old beatniks had drifted off, replaced by a horde of 16-year-old girls. I took that memory, and in the next couple of days started to work on an idea that would become 'Do You Believe In Magic.'"

A novice in the recording area, Sebastian had been looking for unusual sound combinations, and that curiosity would inform the songs he wrote, including "Do You Believe in Magic." "I played Autoharp and knew it had never been used on a pop record. I'd been screwing around with the



idea of taping a ukulele contact microphone to the back of the Autoharp, and hearing its amplified sound was a real 'Eureka' moment. I realized instantly that this could be the heart of a new sound.

"When I finished writing 'Do You Believe in Magic,' I was certain that it was going to be a hit, but I wanted it to have something unusual about it. The regular Autoharp tuning doesn't allow for the minor 7th chords that climb in the intro of the song, so I retuned it for that section. However, when we went into Bell Sound, the hot 2-track recording studio in Midtown at the time, we knew that the Autoharp on its own was too thin, so Jerry Yester [who would eventually replace Yanovsky in the group] doubled it on the piano. We buried the piano part and used it to create the effect of a huge Autoharp.

"We recorded 'Magic' back in 1964, and it was the first example of a scheme that developed between Zal, our producer, Erik Jacobsen and myself. We'd start out with familiar sounds, add something else and then mix them together so that the listener couldn't quite tell what the instrumental combination was. That was our personal dawn in the mysterious and magical use of technology. We instantly realized that we could use this 3-track recorder to create something new, so we experimented. For example, we'd double a guitar lick with a set of orchestral chimes, and then bury the chimes far enough under the guitar so that they wouldn't be heard as a separate instrument. The result was the chime-iest guitar I'd ever heard!"

"By the way, the Guild Thunderbird that Zally played was not a very popular guitar at the time. He loved it because it was very twangy—a single-coil instrument, which Zally played through a Fender Super Reverb. He felt that its sound resembled that of a pedal-steel guitar, and one of his goals was to sound like a pedal steel.

"'Do You Believe in Magic' was one of four songs that we recorded during that session, and like the others, the band was tracked in one pass. The idea was to record the things you wanted to project most out of the mix last. We

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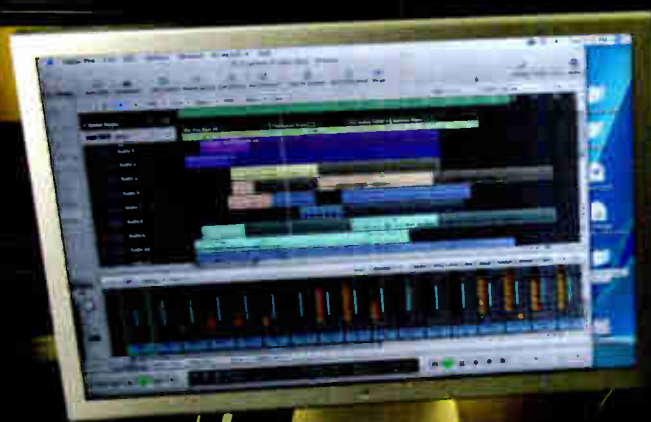
Sam Daniel, Engineer, Producer and Musician

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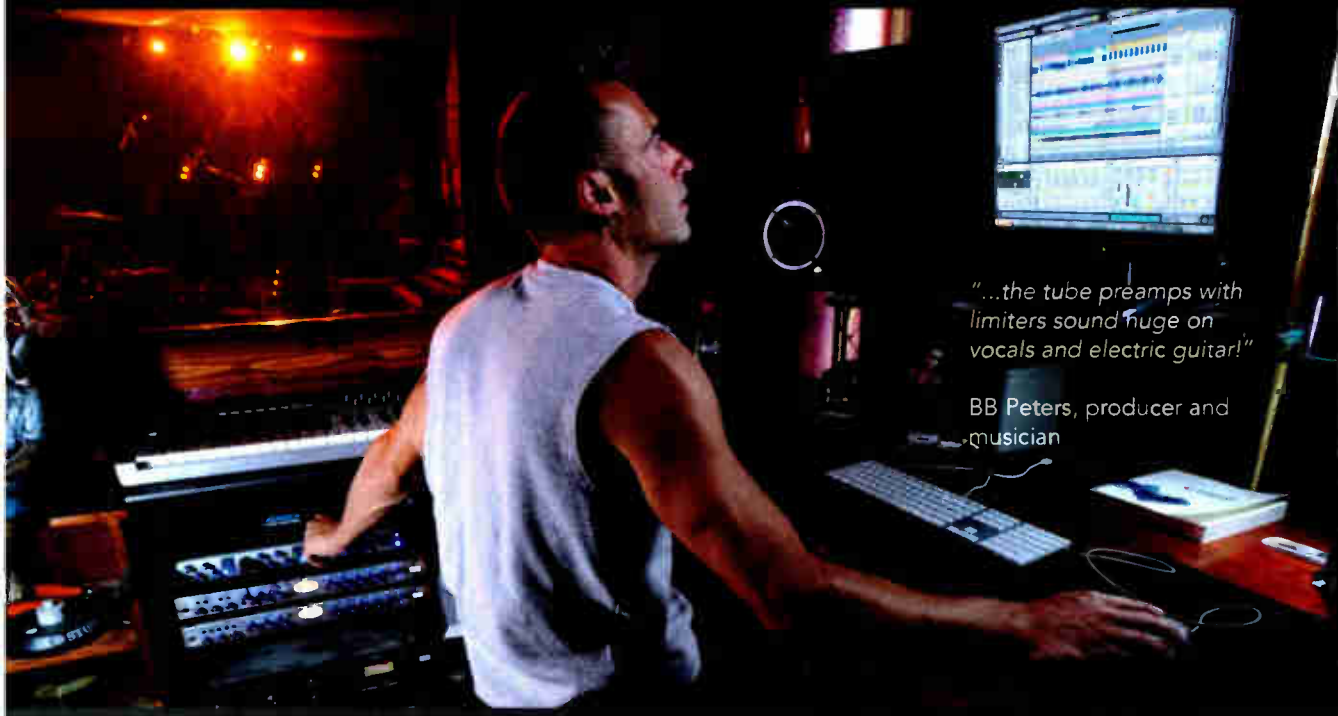


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- 6 balanced TRS line inputs/outputs
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- 8 Analog Mic/Line Inputs, 2 Instrument Inputs
- 8 Analog Line Outputs
- S/PDIF Digital Input and Output, MIDI Input and Output
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were kind of doing a kindergarten version of what Phil Spector became known for. After we tracked the band, we added Jerry's piano part and then an acoustic part of mine. I played this part as loudly as I could, knowing that it would get buried beneath the drum track. But that was okay; we used this guitar part to help create a bigger-sounding drum track.

"The vocals came last. I think my lead was done in five or six passes. Toward the end, someone said, 'Give me a little Dion,' which was our signal for the Italian guy doing doo-wop bit! That's where the gospel tail comes from. Then we began to work on the backing vocals. As would become the norm for the Lovin' Spoonful, backing vocals were executed by me, Zal and Joe Butler. Joe lent a very legit quality to our background parts, which we doubled a few times."

Mixing was really producer Erik Jacobsen's area. A banjo player turned Beatles fan, Jacobsen was intent on creating something new in the studio. "Bell Sound was the hot place," says Jacobsen. "It was a mastering room as well as a recording studio. Big Dom mastered all of the Rolling Stones singles that would be sent over from England. A lot of Latin groups worked at Bell, and there al-

ways seemed to be a group leaving when we came in. Alan Lorber, who was an arranger in town at the time, came by and helped us with the vocal arrangement on the ride-out. Harry Yarmark was the engineer on the session. There was no such thing as a splicing block back then, just a guy with a pair of scissors cutting tape that someone else held at a certain angle.

"Once we finished the four-song demo, we shopped it around, but nobody wanted it! I owned the acetate for about 10 months before Kama Sutra became interested. We kept being told that no one had heard a sound like this and that it was terrible!"

To the surprise of everyone except the group and its producer, "Do You Believe in Magic" raced up the charts when it was released in 1964, topping out at Number 9. In a flash, the nice guy who had been given noogies at school was being given the full star treatment. "Within two weeks," says Sebastian, "we went from playing high schools to being headliners at the Crescendo, the wildest club in L.A., which would become The Trip a few years later.

"Then we got invited to play the Rose Bowl on a bill with Herman's Hermits, the Bobby Fuller Four, the Beau Brummels—

and the Beach Boys! We took a plane from New York to the West Coast, rented a car and headed out to the Rose Bowl. We played through Beatle amps that we were totally unfamiliar with and our sound was terrible, but it didn't matter because the screams of a million girls drowned us out completely! We finished our four-song set, got back in the car and I never imagined just how many teenage girls could fit on the top of car!"

Beatlemania-ish hysteria followed the Lovin' Spoonful for the next several years. How did it feel? "Wildly inappropriate!" Sebastian says with a laugh. "Okay, I wasn't going to complain if our music attracted beautiful young women, but we thought our sound was something that you snuggled up to, the opposite of the edgy attitude that inspired such idol worship."

It turns out that the Lovin' Spoonful were just getting started. Over the next several years, they would etch their brand of sunny, optimistic folk-rock into the popular culture with a string of hits that included "You Didn't Have to Be So Nice," "Daydream," "Nashville Cats" and "Summer in the City." And Sebastian would embark on a long and successful solo career, as well, which continues to this day. ■

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"MILES FROM INDIA"

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to a click, sometimes jammed along with a basic groove and loops, often tracking three or four guys together."

Belden adds, "The guys were so easy to work with because what they do—which is kind of different—is they *build* music there. It's not like they go into the studio and spontaneously do this. Most of the recordings we know of hardcore Indian music is very patterned and structured and focused, and our stuff is pretty loose—'close enough for jazz' applies. So it was interesting to see them loosen up and be more spontaneous. Generally, the Indian mindset is much more serious."

From India, the project moved to New York City's Midtown Sound, where engineer/co-owner Scott Noll presided over a series of sessions featuring various combinations of some of Davis' bandmates from different periods ("cast" by Belden), including bassists Ron Carter and Michael Henderson; drummers Jimmy Cobb, Ndugu Chancler



Miles Davis alumnus Pete Cosey during the Midtown Sound sessions

and Lenny White; alto saxophonist Gary Bartz; tabla player Badal Roy; guitarists Pete Cosey, Mike Stern and John McLaughlin; bass clarinetist Marcus Miller; and keyboardists Chick Corea, Robert Irving III and Adam Holzman, plus the great trumpeter Wallace Roney in the "Davis" slot—improvising over the musical beds that were created in India. Belden and Noll have worked together on various projects for nearly two decades, so it's a comfortable, symbiotic relationship.

Belden is quick to note that he made a point of not asking any of the distinguished alumni to re-create past triumphs. "But if

you say, 'Jimmy Cobb, here's an Indian classical vocalist, now what are you going to play? One take—react! Bye!' you're going to get something interesting. I think rehearsing kills jazz. We were letting them all be musicians, not re-enacting some historical moment. We weren't trying to recapture the vibe of the original records in any way. No one wanted to do that. What would be the point of that?"

Adds engineer Noll, "Bob wanted them to respond to something they'd never heard before. These guys knew the tunes, of course, but they were hearing it in a new light. I mean, 'All Blues' on sitar? It was a blast."

Midtown Sound has three live rooms (the largest is 18x22 feet), a giant iso booth and an office that doubles as a recording space. "It's all sliding-glass doors and huge windows, so when the curtains are open it's like they're all in the same room together," Noll describes. "I do a lot of jazz, so I need to be able to do drums, acoustic grand piano and acoustic bass live."

"The stuff from India was very close-



"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
Engineer/producer - Barbara Streisand, Steely Dan, Ray Charles, Quincy Jones



"The Recoils are remarkable! They seem to clear up the low mids, bring out the ultra lows and the transients come alive with greater detail. Very impressive!"

~ Joe Chiccarelli
Engineer/producer - Bon Jovi, Frank Zappa, Toni Amos, Chicago, Poco, Annie Lennox



"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
Engineer/producer - Steely Dan, Fleetwood Mac, Sting, The Eagles, Queen, REM, Faith Hill



"They are amazing. Now, wherever I setup my rig, I place my Recoils under the speakers and they always sound as they should. I get consistency. I think they're a fantastic product and I am genuinely impressed with the difference they make, so much so I'd like to buy another pair."

~ Donal Hodgson
Engineer/Producer - Sting, Tina Turner, Jeff Beck, Counting Crows, Primal Scream



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~ Mick Glossop
Engineer/Producer - Van Morrison, Sinead O'Connor, The Waterboys, Frank Zappa, Tangerine Dream, Mike Oldfield, Revolver



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~ Dave Bottrill
Engineer/producer - King Crimson, Silverchair, Tool, Godsmack, Staind, I Mother Earth, Dream Theatre

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miked," Noll continues. "I had assumed that everyone played on a giant Bollywood soundstage with everyone playing together, but when I saw the photos, I saw that was not the case—it wasn't a big room and a lot of it was overdubs. We did a lot of that, as well. Other than the two rhythm section days, there was a day with Mike Stern and a couple with Wallace. And we did some by ISDN from other cities." John McLaughlin's title song arrived as a finished master.

Belden comments, "Wallace Roney was stunned I got the horn to sound the way it does. I said, 'I've worked on all these Miles records with great engineers at Sony—they told me *everything*! it was like graduate school.'" Noll adds, "Bob really wanted that classic, dark Miles tone—a lot was in his playing, but EQ is a tool, too. Trumpet is a very bright instrument, and a lot of that high end—especially if you don't want it [to sound] piercing—isn't terribly necessary, so we rolled off a bit of that and then added



Sitar player Ravi Chary during the Mumbai session dates

delay and reverb to put him in the mix. There's very little compression anywhere on the record. I tried not to disturb their dynamics." All the reverbs Noll used were plug-ins, including Altiverb (his favorite) and Waves Renaissance Reverb and TrueVerb. (For Roney's basic horn sound, Noll used an 87 through an Avalon 737 preamp.)

According to Belden, "Reverb is orchestration, compression is orchestration, stereo

imaging is orchestration to some degree. I also looked at this as a chance to go into human orchestration. I could put in people who played a certain way that I thought could get a certain reaction. Then I could put another player on top of that and get a reaction. And I could then manipulate it all in the digital realm to take Teo Macero's idea one step further. I talked to Teo a lot about what I was doing. I had a linear conception in mind and from that it was building everything horizontally to create this labyrinth of sound."

The amount of editing and manipulation varied from song to song, even section to section. The mix was done entirely "in the box." Belden says, "The tunnel [Jean Pierre] is ridiculous because I had a drummer play to a click-track in Mumbai, with a flute player and some percussionists, and then I took it to the States and I had [drummer] Vince Wilburn play to the click-track



"The Recoil Stabilizers improve the low end and tightness of my monitors, increase the punch and bring the mids into better focus. They've really facilitated more accurate panning and better depth of field in my mixes."

~ Peter Wade

Engineer/Producer - Jennifer Lopez, Santana, Rihanna, Taylor Dayne, Lindsay Lohan, Yoko Ono



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~ Bil VornDICK

Engineer/producer - Alison Krauss, Jerry Douglas, Bela Fleck, Marty Robbins, Mark O'Connor



"The Recoils really seemed to focus up the low mids on everything...the thud of the kick, roundness of the bass, and the low strings on the guitar seemed more solid and defined, thus clearing up the mix and making the stereo image more detailed."

~ Joe Barresi

Engineer/producer - Tool, Queens Of The Stone Age, Bad Religion



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~ Butch Walker

Engineer/producer - Avril Lavigne, Fall Out Boy, Pink, Sevendust, Hot Hot Heat, Simple Plan, The Donnas



"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

Engineer/producer - U2, Bob Dylan, Peter Gabriel, Emmylou Harris, Ron Sexsmith, Robbie Robertson



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Engineer/producer - Dire Straits, Vince Gill, Lyle Lovett, Sheryl Crow, Dixie Chicks

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without hearing the other drummer. Robert Irving heard the Indian drummer, Adam Holzman heard Vince, and then I put it all together and it matched. We had to take out some of the flams of the bass drums, but once you're in that digital realm you can do slight-of-hand. I would take a flute solo from one spot and put it in another spot if I wanted to create a bridge. You can also edit people out, so I would have them *overlay* and you create a counterpoint where someone would react to somebody, but then you don't necessarily keep both parts of the interplay. I thought in the tradition of Miles and Teo, you don't tell anybody anything. And in the end, nobody remembered what they played on, which is good because then they don't know what's missing. But also I know these cats as people and they trust me.

"The goal is to make the end result sound like a record, which again was in the spirit of Teo's work. What he was really saying in his post-1970 work was that we're in another realm of composing now and the studio is just another instrument. The engineer is just like a bassoon player, the tape machine is part of the band. Now, so is Pro Tools."

PHANTOM PLANET

FROM PAGE 95

has helped Greenwald's demos sound so good is Apogee's Duet, "which is a very portable stereo converter and pair of mic pre's and phantom power. You can sit on a mountain-top with a laptop, bring an 87 [mic] with you, plug it in and do *beautiful* recording. Alex got really great at it." Another of Greenwald's favored pieces was PSP's VintageWarmer 2 plug-in compressor/limiter, which he used to crush and distort various sounds.

An arranger and guitarist himself, Berg and the band next convened in the producer's home studio, "and the five of us would bash around arrangement ideas, sometimes staying fairly close to Alex's, but also trying different tempos, working out new parts—the types of things that a good band can do with songs. To Alex's credit, he knows there are three guys who bring something that he doesn't. That's what makes it *a band*." The group spent a few days laying down some basics at the Malibu Performing Arts Center's huge, API-equipped tracking room (Berg is creative director there), "but 95 percent of it was done at my house," he says. "I have an API that was in the Record Plant in New York in 1970,

about 400 instruments and just about every mic and amp and keyboard and piece of outboard gear there ever was. [Laughs]

"My space is small," he continues, "but that worked to our advantage on this album. It's part of that weird, pressurized sound. If you go back and listen to The Beatles' 'Yer Blues' on *The White Album*, they're actually in a tiny room and it gives it that crazy super-charged sound. My room achieves a similar thing when all four guys are playing at the same time."

Berg's primary studio partner for the past two years has been 25-year-old Canadian engineer Everett, who came out of the highly respected (and progressive) Banff Centre arts scene in Alberta. Together, they've crafted albums by Simon Dawes, Yorn, Hoop, Phantom Planet and now Hornsby. "He's got incredible talent," Berg says of Everett. "He sets out on every record wanting it to be new and fresh and original, and the artists really respond to that. He knows plug-ins like nobody I've ever met—he's actually invented techniques with plug-ins that no one knows. And he may be the fastest Pro Tools engineer who ever lived. I'm not kidding—he's like a blur!"

Berg gives Everett major credit for help-



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ing create and facilitate the album's intriguing tapestry of effects and textures that sound almost orchestral in their implementation. But the engineer is quick to note, "Sonically, I'd say Alex brought the most to it; he's ridiculous about that kind of stuff and has a lot of great ideas. I was trying to make it not sound like a typical four-piece rock band, and the way we made the album lent itself to having a bit of a quirky sound."

Indeed, The M.O. changed radically from song to song: Some were built instrument by instrument, while others had the foundation of the band playing together. There were also hybrid tracks in which certain instruments were replaced, and then layer upon layer of other guitars and effects were added over the course of weeks or months. "On the song 'Dropped,'" Everett says, "there's probably 15 different performances over the course of two years from three different rooms, at different tempos, maybe even different keys, all kind of playing on top of each at the same time; it's completely insane."

"We always left room for creativity and for chance," Berg notes. "Broken pieces of equipment, toys, mistakes—I'm always attracted to those unusual moments."

Everett says he likes to commit to effects while he's recording rather than laying them in exclusively during the mix stage, in part "because people get used to hearing the roughs, and I wanted them to get comfortable with the sounds rather than being surprised by them later."

Still, the mix—on Berg's API—took many interesting turns before all was said and done. "We were adding and subtracting all the time," Berg says. "Halfway through the mix, Sean would say, 'I've turned this upside down; listen to it, what do you think?' Sometimes Alex and I would look at each other, and go, 'Stop it!' And sometimes we were like, 'Holy smokes! That's amazing!' He'd repan, make something so wet as to be almost unrecognizable, print a backward reverb and then put that through an effect. There was never a dull moment!"

As a support act of this spring's sold-out Honda Civic Tour headlined by Panic! at the Disco, Phantom Planet was playing mostly to enthusiastic teenage girls, and the good news is that the material from *Raise the Dead*—some of it fairly dark and raucous—went over as well as their better-known songs. "Their audience will grow with them," Berg offers. "The band doesn't pander to them, but they also don't look down on them. They just really love to play and they've got a lot to offer." And with *Raise the Dead*, they've given their growing following a lot of food for thought.

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L.A. GRAPEVINE

by Bud Scoppa

In 1978, Larrabee Studios owner Kevin Mills asked mix engineer Dave Way, his friend and colleague, to check out Andora Studios in the Cahuenga Pass, which was up for sale. The facility—originally built in the '70s for singer Tom Jones, who'd christened it Britannia—had everything you could ask for in a rock studio, and Way gave it top marks.

that you have here—with runners available to go get guitar strings and that kind of stuff. Clients are cutting their budgets where they can, but you can't replace all of that with a home studio. I think that as we get past this crunch period, people are gonna realize the value of these studios, especially as some of them fall by the wayside."

Way and his partners bought the place with all the goodies thrown in, including a pair of Neve 8078s, one in each room. While the board in the mix room came from Smoke Tree, the one in the tracking room was bought new in '76 and stored for 10 years before being installed, so Studio T's control room has been its only home. They also picked up tons of complementary outboard gear: 1176s, LA-3As and LA-2As; Pultecs; Tube-Tech compressors; a Fairchild 670; an Alan Smart compressor; two EMT stereo tube plates; Motown and GML equalizers; a pair of Gates Sta-Levels; two

Lang EQs; some Neve 2254s; and API 550As, along with a nice mic collection.

I hadn't been inside the building since 1978, when I dropped by with my songwriter pal Geoffrey Cushing-Murray to visit a session for the Beach Boys' *L.A. (Light Album)*, on which Cushing-Murray had three co-writes. As I recall, the décor was chrome and glass with dark surfaces, so I hardly recognize it as Way shows me around. The big studio is practically iconic in its '70s rock vibe; the second-floor lounge has big windows overlooking the studio, giving it the feel of a VIP balcony, and the new owners have opted for earth tones throughout, giving the facility a laid-back air. There's a gigantic flat-screen TV on the far wall, and cushy couches are arranged to form a seating area. This strikes me as the sort of place you could spend some time in.

The funny thing is, despite all the obvi-

—CONTINUED ON PAGE 110

NASHVILLE SKYLINE

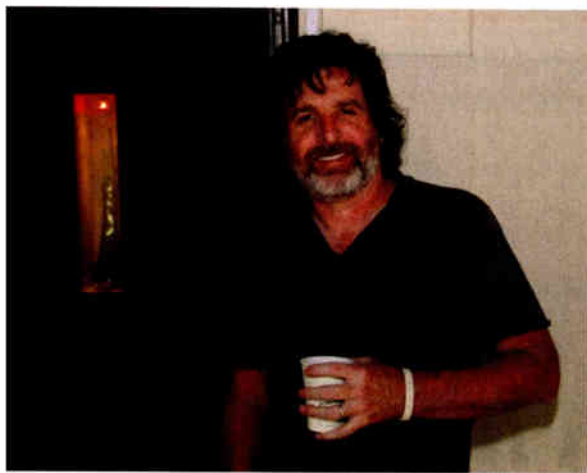
by Peter Cooper

In Nashville, celebrities are often treated just like other human beings. Lyle Lovett can eat among the Pancake Pantry proletariat without being hassled for photos. Emmylou Harris can take in a Nashville Sounds ballgame and sign nary an autograph. Star sightings are frequent enough to inspire little in the way of fuss or freak-out.

This year, one of the celebs around Nashville was not only unmolested, he was completely unnoticed. Marc Marshall, whose huge baritone voice is normally heard within a German singing duo called Marshall & Alexander, is a regular presence on television and on major stages across Europe. Six albums of pop, semi-classical and other material have made Marshall & Alexander one of Germany's most popular acts (insert David Hasselhoff crack here, if you must), and the uproar can be distracting when it comes time to make music.

"This is refreshing for me," says Marshall sitting in the control room of Ocean Way Nashville's Studio B, readying himself to sing the album's only cover song, a duet with Nanci Griffith on her "Gulf Coast Highway." Thomm Jutz, the German-born guitarist in Griffith's Blue Moon Orchestra, co-produced the album with Marshall and musical director Frank Lauber, and Bill VornDick engineered. Laughing, Marshall surveys the room, and cracks, "My first country record."

Marshall is joking about the country part. Waylon Jennings liked to quip that his pronounced twang meant he couldn't go pop with a mouth full of firecrackers. Marshall's operatic voice means he couldn't go country with a mouth full of farm dirt. Jutz and his other collaborators didn't try to force any kind of genre collisions, though the musicians in the room were certainly capable of playing in a style closer to their Tennessee homes. The record, which is likely to be released in the fall, is lush, yet decidedly organic. Most of the tracking was done in Studio B, through a Neve VRP 96-input console and recorded onto Pro Tools HD. Strings and horns were tracked in the 38x50-foot Studio A,



Dave Way has been co-owner of The Pass since 2005.

Based on that recommendation and without setting foot in the studio himself, Mills bought Andora, renaming it Larrabee West.

At the time, Way had no idea that he'd become a co-owner of the facility in 2005, buying the building, doing the necessary renovations and renaming it The Pass. Before he made the leap of faith, Way's wife, Jamie, who'd been the studio manager at all three Larrabee locations, had run the numbers and encouraged him to jump on it.

"At the time," Way recalls, "my friends were saying, 'Why would you buy a studio now when so many people are recording and mixing in their homes?' I'll admit that I'm guilty of that myself. I'm in a position where I can be with my two kids and set up a mix room to my liking; I'm fortunate that way. But you can't have a tracking room like this one at your house. You can't accommodate 20 string players and the A&R people, and have the services

NEW YORK METRO

by David Weiss

with an enormous 80-input Neve 8078.

"The A room is a 100-year-old church," said director of studio operations Pat McMakin. "And Studio B is a great, medium-sized tracking room with a wonderful Yamaha grand piano and a VR that's heavily modified. It's one of the best-sounding Neve VRs I've ever heard."

Though Ocean Way Nashville was purchased by Belmont University in 2001 and students often work in a downstairs studio that is well separated from the A or B rooms, the environment at Marshall's sessions was anything but academic.

"Ocean Way was built [by co-owners Gary Belz and Allen Sides, with significant contributions from acoustical contractor Michael Cronin and technician Sal Greco] to be a world-class studio, and the intention has not changed at all," McMakin says. "I'm proud of the association with Belmont, and proud that students get a sense of what a professional environment is like. And in a declining studio environment, we're able to keep this place right and keep the equipment well-maintained, in part because of our marriage with Belmont."

Lately, Ocean Way has also been the site for sessions involving Faith Hill, Toby Keith,

—CONTINUED ON PAGE 110

A new world-class recording/mixing studio has just touched down in New York City. But exactly what could make Troy Germano want to launch Germano Studios in 2008 in the land of excessive commercial rents, savvy personal studios and dozens of dashed big-facility dreams?

"You're not the first person to ask if I'm crazy," says Germano, owner/president of Germano Studios. "My response is that I'm not insane at all because there needs to be a place like this, a place that was truly inside and outside of the box, in a way that other people in this country aren't going to do it."

Now five years removed from the massive responsibility of running the legendary Hit Factory franchise in New York City, London and Miami, Germano is returning to Manhattan to head up what he feels represents the state-of-the-art in audio facilities. With just two rooms on one floor to oversee, he is free to focus on maintaining an elite balance of equipment, acoustics and atmosphere in the intimate downtown space.

The vibe at Germano Studios kicks in before visitors even set foot in the studio, as the lobby of this stylish NoHo neighborhood building envelops them in one of the city's artistic treasures: an original Keith Haring-painted lobby. Upstairs, conditions are upscale but relaxed, with huge old windows spilling light into a long hallway that connects Studio 1, Studio 2 and the in-house mastering facility helmed by A.L.L. Digital veteran Drew Lavyne.

"I looked at about 55 different spaces that I might lease or purchase," Germano recounts. "I was reluctant to see this space initially because it was a former studio [Platinum Island] and I was really looking at raw space. But inside of five minutes, I saw it was the skeleton of



Mastering engineer Drew Lavyne plays for Germano Studios owner/president Troy Germano

what I wanted to do: I envisioned a boutique-like, very musician-friendly studio downtown, and I got a vibe off of this neighborhood. I also had a very set idea of what the setup would be for equipment, which is a really intense hybrid between the producer's desk and the analog console."

The highly accurate acoustic environments were designed by Germano and David Bell to ensure that form follows function. "It's the typical design that Dave and I have done over the years—we really tried to keep it true to the original footprint, but improve upon it with more diffusion and absorption," Germano explains. "I wanted the large speakers to be true and accurate, and I wanted people to be able to listen on the near-fields and know where the mixes were."

"With me, it's always more about feel. Of course, the rooms have to sound great, and these are two of the best control rooms I've ever been involved with. I'm as proud of them as anything I've done in the past with my dad, Ed Germano, or on my own."

At the center of each room is an SSL Duality 48-input analog console with Total Recall, supplemented by an SSL 32-input X-Rack monitor mixer with Total Recall for a total of 80 inputs. According to Germano, the Duality's powerful combination of analog signal path and digital functionality made it the clear choice for his rooms.

"The way it seamlessly interfaces with Pro Tools is what made me confident

—CONTINUED ON PAGE 112



In Ocean Way Nashville: **Bil VornDICK** (seated, left) and **Marc Marshall**. Standing, L-R: **Nanci Griffith**, **Frank Lauber** (co-producer), **Peter Cronin** (co-writer), **Jacob Murray** (assistant engineer), **Thomm Jutz** (co-producer, guitar), **Pat McInenery** (drums), **Tim Lauer** (keys), **Mark Fain** (bass), **Morgan Hobbs** (assistant engineer).

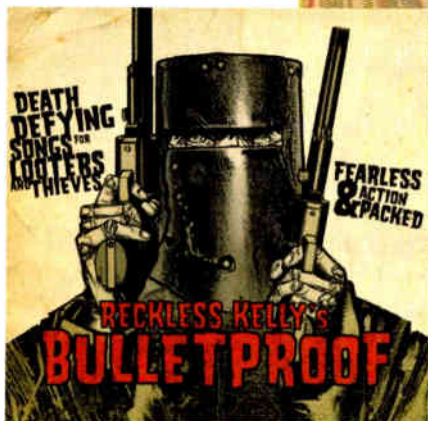
RECORDING RECKLESS KELLY'S *BULLETPROOF* AUSTIN BAND SPREADS OUT AT PEDERNALES

By Barbara Schultz

Rocking Americana band Reckless Kelly tracked their latest release, *Bulletproof*, in Pedernales Studio (Lake Travis, Texas), and they have to be happy about this first project for their new label, Yeproc. Most of the band's past albums were made in smaller studios, but this time around they were given the opportunity to spread out and self-produce their project in Willie Nelson's legendary rooms. "We've

always worked in studios with killer gear and killer people," says guitarist David Abeyta, "but this was the traditional big-studio layout where we could all have sight lines to everybody, have big rooms for guitars. I really feel like the studio is a big part of the sound of this record. Being able to hone in on some roomier guitar sounds helped the overall sound. I hadn't worked there before, but when I heard that they had all these rooms that sort of orbit off the main room sounded like something we could really use to our advantage."

Engineer John Smerek recorded the analog-minded band to a Studer A800 2-inch machine, using Pedernales' 80 Series Neve console. "That Neve was on the front end of just about everything," Smerek says. Smerek also appreciated the space at Pedernales: "That big control room is very comfortable for play-



Engineer John Smerek in the Pedernales control room

back—to have everyone come in and give things a listen," he says. "I also liked the fact that the 2-inch machine has its own little booth with doors. You could close it off and get rid of added noise. And the fact that we were able to stay analog as long as possible was great."

Abeyta says the band generally plays live in the studio, "with the idea of getting keeper bass and drum tracks, but we also ended up getting a lot of guitar tracks. I even played guitar solos live this time. I usually think about coming back and hitting those again, but everything was working really well. We all liked the fact that we got some of that stuff on the fly."

Abeyta, who is the band's self-described "techno-geek," produces and records other Texas bands in his spare time, and is usually very hands-on throughout Reckless Kelly's mixing process, but he respected Smerek's desire to get some mixes built on Pedernales' SSL G Series before bringing the band in for input. "It worked out great because we did have fresh ears when we came in," Abeyta says.

Most of the songs were mixed in Texas, but Smerek, who lives in Detroit, drove to Nashville and mixed a few songs at House of David when the project ran out of time at Pedernales. Another couple were mixed by engineer Adam Odor in his personal studio, Stone Cringe. These included vocalist/songwriter Willy Braun's song about New Orleans "Godforsaken Town," a beautifully produced track that includes a quiet, mournful trumpet as a dreamy backdrop. Mastering was done by Jim Demain at Yes Master (Nashville).

"I have to say, too, that since I've been with this band, which is about eight years, we've always been promised we'd get to do a vinyl pressing," Abeyta points out. "And now that we're with Yeproc, we finally get to do one. I was telling Willy, because of the timing of when I came up, I've never worked on anything before that came out on vinyl."

Whatever format you enjoy, *Bulletproof* is a fine album of well-crafted songs, big sounds and inspired playing. Find audio clips and more studio pics at www.mixonline.com.



L-R: Vocalist/guitarist Willy Braun, vocalist/multi-instrumentalist Cody Braun, bassist Jimmy McFeeley, lead guitarist David Abeyta and drummer Jay Nazz

ROCK SESSIONS

311 AT OCEAN ROCK PRODUCES NEW ALBUM



L-R: Chad Sexton of 311 with producer Bob Rock, bandmate Tim Mahoney, engineer Eric Helmkamp and assistant engineer Albert Mata

The band 311 began recording a new album at Ocean Studios (Burbank, Calif.) with producer Bob Rock, engineer Eric Helmkamp and assistant engineer Albert Mata. Studio manager Greg Ruoff reports that the band set aside the project to go on the road, but they tentatively plan to return for more tracking after completing their summer tour.

NIGHT RANGER RETURNS NEW STUDIO ALBUM AT CAMP



L-R: Guitarists Jeff Watson and Brad Gillis, lead vocalist/bassist Jack Blades, engineer/keyboardist Michael Lardie, engineer/producer Joey P. and vocalist/drummer Kelly Keagy

Night Ranger recorded some of the tracks for their first studio album in 10 years, *Hole in the Sun*, at Camp Studios (Mill Valley, Calif.) this summer. The album, which features a dozen new songs, was co-produced by band co-founder/guitarist/songwriter Jeff Watson, along with Michael Lardie, engineer/producer Joey P. and Matt Cohen. The album was mixed by Juan Urteaga at Trident Studios (Pacheco, Calif.).

SOUTHEAST

Montgomery Gentry recorded their new album, *Back When I Knew It All*, at Ardent Studios (Memphis) with producer Blake Chancey, engineer Tony Castle, and assistants Brandon Perdue and Adam Hill. Also at Ardent, Mikey Jukebox mixed Hello Dreamer with engineer John Hampton and assistant Hill...Audio Matters (Kodak, TN) owner Trevor Reddick has upgraded Studio A with several new pieces of gear (True Systems Precision 8 pre, ADL 1500 stereo limiter, Waves SSL 4000 collection, etc.). Recent sessions at Audio Matters have included the Triumphant Quartet tracking with producer Jeff Stice and engineer Greg Huffman and John Thomas Oaks self-producing tracks with engineers Reddick and Huffman.

NORTHEAST

At Electric Lady (NYC), David Bowie self-produced tracks for an upcoming EMI compilation; Mario McNulty engineered. Bob Dylan was also in, mixing basement tapes and bootlegs for an upcoming release with engineer Chris Shaw...John Mayer self-produced tracks in Avatar Studio's (NYC) A, where he worked with engineer Chad Francoviak and assistant Justin Gerish. Also at Avatar, The Academy Is tracked in Studio C with producers Sam Hollander and Dave Katz, engineer Claudius Mittendorfer and assistant Gerrish; and Allen Toussaint mixed in Studio B with producer Joe Henry, engineer Kevin Killen and assistant Rick Kwan...Mick Guzauski mixed several II Divo tracks in his Barking Doctor Recording (Mt. Kisco, NY)...Jay Newland produced three Lucky Peterson albums at Sear Sound (NYC) and mixed them at River Music (Norwalk, CT)...Brandon Mason recorded the score for the film *Public Enemies* at Log Cabin (NYC)...Rock trio The Subways released a new album that was mastered by Emily Lazar at The Lodge (NYC)...Singer/songwriter Christian Cuff mixed a new release



Studio Wizardry: Writing/production team the Wizardz of Oz worked with Tim Palmer on projects for up-and-comers Freddy and Chester French in Emerald City Studios. Pictured (L-R) are Palmer, Wizardz' Andrew Bojanic and Liz Hooper, Freddy, D.A. and Max (Chester French), and a friend.



Wyclef Jean at Setai Recording's SSL C-200

WYCLEF IN SOUTH BEACH PRODUCER COLLABORATES IN SETAI RECORDING STUDIO

Producers Wyclef Jean and Jerry Wonda visited the recently opened Setai Recording (profiled in June Mix, "The Class of 2008") to record Abishek Bachchan's vocals for a track called "Hollywood Meets Bollywood." Dave Clauss engineered. Setai Recording is situated in the penthouse of The Setai Hotel (South Beach, Fla.). Since the facility opened for business this past spring, high-profile artists such as Timbaland, Chris Cornell, Mary J. Blige, Jay Z and Cat Power have also recorded there.

called *Silo* at Rocking Horse Studio (Pittsfield, NH). Cuff co-produced his release with producer/engineer Brian Combes...Jeff Glixman, Zak Rizvi and John Andreas mixed 11 unreleased Kansas tracks as part of their work on the remastered reissue of the band's live *Two for the Show* LP...Doo-wop group Kenny Vance & The Planotones worked on their new CD, *Countdown to Love*, in The Music Lab (Elmont, NY) with engineer Lou Gimenez and producer Johnny Gale.

SOUTHERN CALIFORNIA

At Red Bull Studio (Santa Monica), Lovedrug tracked and mixed an album for The Militia Group with producer Michael Beinhorn and engineer Eric Stenman; and Valencia mixed their album for Columbia with engineer Dave Schiffman...Producer/guitarist Jerry Stucker was in Capitol Mastering (Hollywood) with mastering engineer Ron McMaster to finish up a new release for Professor R J Ross & The University of Soul...Christine Wu of L.A. Strings recorded and engineered violin parts for the soundtrack to *Columbus Day* (starring Val Kilmer) at Final Mix Studios (L.A.)...Hans DeKline mastered online releases for Tim Finn and an iTunes exclusive for Morcheeba at Sound Bites Dog Recording (L.A.).

Send "Track Sheet" news to bschultz@mixonline.com.

SWEETWATER PRODUCTIONS SETTING AN EXAMPLE WITH GREEN DESIGN

By Barbara Schultz

Before Sweetwater became an audio household name, Chuck Surack's mega-successful retail business began as an offshoot of the studio business he started in his Volkswagon bus in '79. His early use of the Kurzweil K250 in the mid-'80s led to relationships with musicians and recordists, and he quickly found himself providing gear, sounds and advice to a new age of music-makers. Since then, his studio business and retail operation have grown exponentially, each lifting the other.

Surack took both sides of his business to a new level this year, with the construction of Sweetwater's new studios, performance theater and retail headquarters in the company/owner's home town of Fort Wayne, Ind. Three new recording facilities and the theater are situated in an impressive structure that also includes the warehouses and company offices. "As the company has grown from the days in my VW bus to today, when we have 343 employees," Surack says, "one of the things we try to do to separate ourselves is to really take care of our employees. So when we built this building, we wanted to take things to the next level for our employees, as well as our customers."

On the recording studio side, that meant creating acoustically isolated spaces that fulfill a variety of functions but are all interconnected.

and we can record from any of those places."

Another mandate that Surack gave to the studio designers, building architects and contractors was to keep this project as "green" as possible. "I recycled at home before it was in vogue, and we've done it at work for decades," he says. "And when we started looking at furniture and materials

for the new building, it became clear that we could be a leader for northern Indiana—and maybe for the whole audio industry—by setting an example that made good business sense."

The team of architects, designers and builders did such an excellent job that the project is set to be awarded the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) Gold status. "Many elements that helped this project achieve LEED certification include windows and skylights throughout the building, which help reduce or eliminate the need for electric lighting. Sweetwater's previous studio was cut off from all direct outside light, so staff and clients really appreciate the positive difference that natural light can have on the vibe of a session," Berger explains.

Surack also cites the choice of renewable bamboo hardwoods, water-saving bathroom fixtures, and nonpetroleum-based glues, carpets and paints as parts of the sensible, green studio design.

The studios are managed by Surack's longtime friend and colleague Chet Chambers, who also had a good deal of input into the design of the facilities' workflow. Chambers explains that the three rooms are all equipped with Pro Tools HD3 systems, and an enviable collection of plug-ins, outboard and mics, but each room was designed to perform different functions. Studio A, with its ADAM 2.5 surround monitoring and Digidesign ICON with D-Control, is the largest and includes a tracking room and two iso booths. Studio B is equipped with an ICON with D-Command and JBL 4000 Series monitors;



Sweetwater Productions' Studio A includes a C7 grand piano with MIDI in addition to Pro Tools HD3 and a Digidesign ICON with D-Control.

this mid-sized room was designed for mixing and overdubs. The C room (stereo pair of ADAM 2.5s) is set up for mastering and audio restoration.

But Chambers emphasizes, above all, "You're not buying the room or rooms, you're buying our staff and our expertise. At a typical studio, you rent a room and the time," he says, "but this is a full production facility. On almost all of our projects, people ask us to produce, sometimes co-write, definitely arrange. We're involved all the way through the creative process.

"We have to offer more than just studio time because, let's face it, my biggest competitors are on the other side of the aisle from me," Chambers continues. "Sweetwater's sales engineers are selling Pro Tools systems all day long, saying, 'You can do this yourself in your bedroom.' And in theory they can. But maybe their skill level or their budget isn't such that they can do it all—all the way through to mastering and duplication. Our studios are designed so that people will do what they can and let us help with the rest."

Recent clients at Sweetwater Productions have included Mercy Me, Kevin Cronin of RED Speedwagon, Ed Roland of Collective Soul, and numerous local and regional artists.

"Chuck and I are both Fort Wayne hometown boys," says Chambers, "and for us to be able to pursue our music dreams in our home town in the middle of Indiana is an amazing ride and a blessing." ■

Visit mixonline.com for more details about green studio design and more information about Sweetwater Productions.



From left: studio manager Chet Chambers with staff engineers Chris Liepe, Justin Zellers and Jeff Steeg

Surack retained the Russ Berger Design Group to help realize the ambitious project. "We wanted a studio that was a mix of traditional functions but was very contemporary in terms of equipment and interconnectivity," Surack says. "Our studios can connect to each other, they can connect to our theater, which can connect to our conference hall and to an outdoor amphitheater that we have,

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PHOTO PHILLIP ANGERT

ous pluses—not the least of which is its location, a stone's throw from Hollywood and the Valley, right off the Barham Boulevard exit of the 101—The Pass doesn't yet have the profile of many of L.A.'s high-end studios.

Nonetheless, the studio has quietly attracted its share of A-list clients, including Rick Rubin, who put Andora on his short list in 1994, when he mixed Tom Petty's landmark *Wildflowers* there with Richard Dodd. He returned to mix a chunk of the Red Hot Chili Peppers' *Stadium Arcadium* with Ryan Hewitt soon after Way took over.

Since then, Rich Costey has mixed the Foo Fighters at The Pass, Bill Bottrell has done projects with Sheryl Crow and Rosanne Cash, the Smashing Pumpkins locked out the tracking room for months to cut an album with Roy Thomas Baker and Terry Date, Dave Sardy was in for mix dates with Wolfmother and the Rolling Stones, Neal Avron mixed the last two Fall Out Boy albums, George Drakoulias cut Liverpool's Zutons and T Bone Burnett did some sessions with Robert Randolph.

The Pass' rock clientele remains its bread and butter, but with fewer major-label rock projects and tighter budgets all around, the

need to diversify is a no-brainer. "We also get movie soundtracks and scoring sessions, even things like photo shoots and video shoots," Way says. "New Kids on the Block were in here recently for that purpose. It seems that some people want to use the place just for the way it looks as opposed to all the great gear and everything. We also have these live in-studio performances that are mainly showcased through the Internet. Bands come in and set up a full-on live performance in the big room, we videotape it and it goes out on the Web a couple weeks later.

"But we have rock clients in here hunkered down for five or six months at a time, particularly in the tracking room," Way continues. "There are always gonna be people who want these consoles and tape machines—you don't see those outside of studios like this one anymore.

"The Pass is quietly becoming a favorite room for a lot of top producers and engineers, and that's without any advertising. Now that we've had a few years to gather up some great clients and great records, we'd like to get to those people who haven't been here since it was Andora." ■

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Kelly Clarkson, Marc Broussard and others.

Marshall sat with Jutz, Peter Cronin and Charlie Steff and wrote the songs. Jutz and Marshall knew each other in Germany before Marshall's career ascended to its current level. During tracking, Lauber often conferred with the singer in German about vocal technicalities, while Jutz worked with musicians (including banjo virtuoso Richard Bailey and Blue Moon Orchestra percussionist Pat McInerney) and VomDick manned the Neve.

"It was the right thing to have Frank here," Jutz says. "He knows Marc's voice well, and knows how far he can push him and when to hold back. VomDick worked his magic, and we just put a microphone in front of Marc and recorded what we got. We hardly did any overdubs on his vocals. And when we needed to work with the orchestra in A, we just took the hard drive and carried it down the hall. Both boards sound incredible."

Most tracks came straight into the Neve consoles, though Marshall's voice did go through a Martech preamp and a Universal Audio LA-3A audio leveler. In control room B, Marshall listened to a playback through the Ocean Way custom four-way L/C/R monitors. "That's the way my voice sounds," he says.

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Marshall & Alexander often perform with large ensembles in a live setting, but the Ocean Way experience was a rare chance for the singer to work in real time with the players while in a studio setting. "In Germany, a singer is not a musician in the mind of a lot of the musicians," Marshall says. "Here, it's a different approach, and I am included in everything. I knew it would be right because I knew Thomm. He's a great producer and a great guitar player, and after this record more people will realize that." ■

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that this is the right decision," he says. "I played with the console in London, and the fact that Alicia Keys has this console really opened my eyes. She's definitely ahead of the curve here. I realized that this was a lot more than an AWS 900. People believe that the Duality is simply a bigger version of the AWS; it's not."

Germano's gear selection for the outboard racks goes hand-in-hand with the Duality. Reasoning that effects should come purely from the vast array of plug-ins that the Dual-

ity and Pro Tools HD3 Accel system could accommodate, Germano allocated almost no real estate for hardware effects boxes. Instead, all outboard racks are packed almost exclusively with row upon row of EQ, limiting and dynamics.

Modern-day essentials include Empirical Labs Distressors, Millennia STT1 channel strips, Rupert Neve Portico 5032II channel strips, Thermionic Culture Phoenix stereo tube compressors and Lavry Engineering AD 122 A/D conversion. Those boxes are joined by new reissues of classics that include Chandler channel strips, Neve 1081 channel strips, Tube-Tech EQs, Universal Audio LA-2A limiters and 1176 compressors, and much more.

While much of the gear may sound vintage, the plethora of reissues were specified to support Germano's philosophy of maximum reliability and minimal downtime; this is a man who spent way too much of his past life hunting down obscure parts and in-demand technicians. "A studio may have an 80-input console, but if six or seven are not working, why would you want to pay for that?" he asks. "Reissues, you know they're going to work: They won't buzz, they'll be balanced from left to right. So the idea was to pick the hardware pieces that I thought people would want to use as tools to shape their sound, and I don't believe in charging people for plug-ins when you're a mixing studio. Clients should have the ability to sit at the console, and if they want to work inside the box, fine. If they want to merge the two, fine. If they want to listen on the big monitors, great, and if not, they have lots of near-fields to choose from."

More than likely, visitors *will* want to listen on the big monitors at some point. The mains are Exigy S412G four-ways packed with four 12-inch cones, making for a thrilling listen at high volumes—no subwoofer needed for full-body bass response. "I think they're extremely accurate and loud. Having four 12s as opposed to two 15s is more focused, and I wanted these monitors to be able to come through whether we were making hip-hop, rock or jazz records."

After a five-year absence from the studio scene, it's safe to say that Germano is glad to be back in the saddle again. "I've done other things in the record industry the last few years," Germano says, "but I missed having this platform. I think I know how to make artists comfortable and make them want to come back. This is a rock 'n' roll hotel. That's something my dad always said, and I feel the same way." ■

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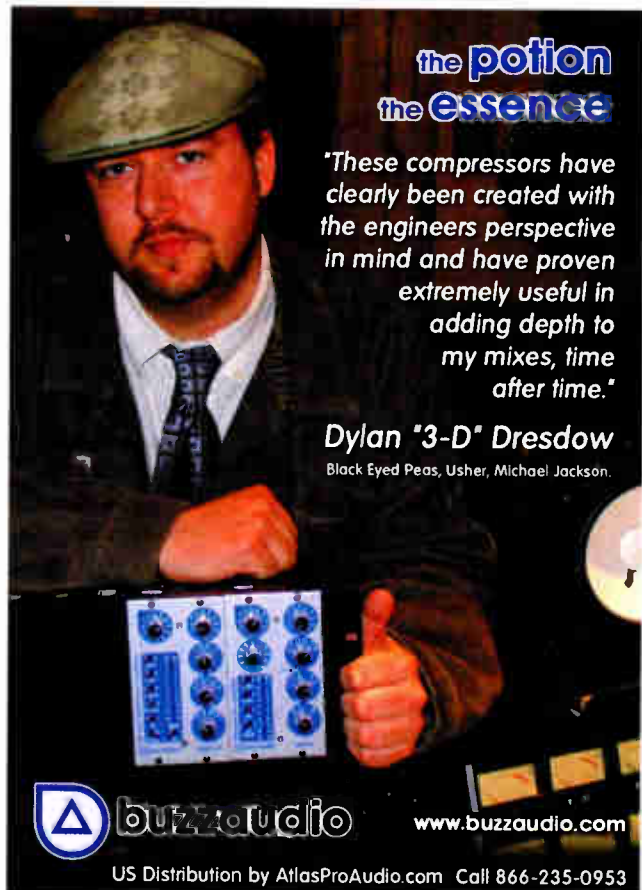


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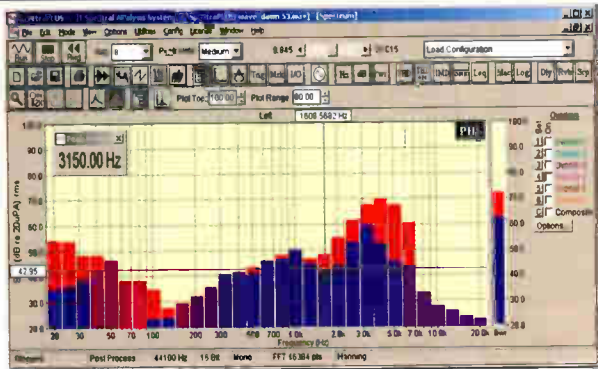


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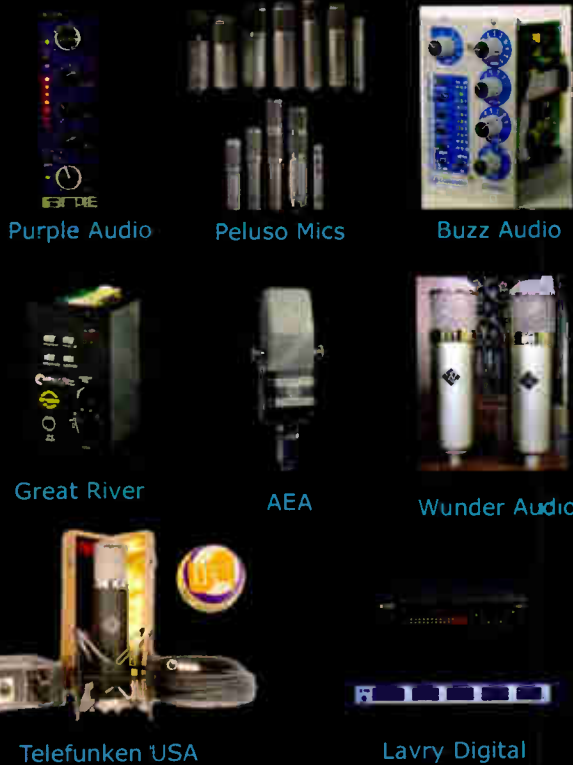
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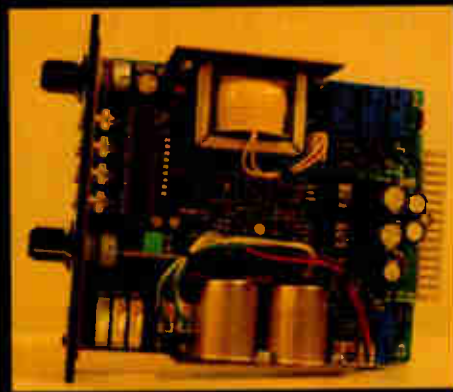
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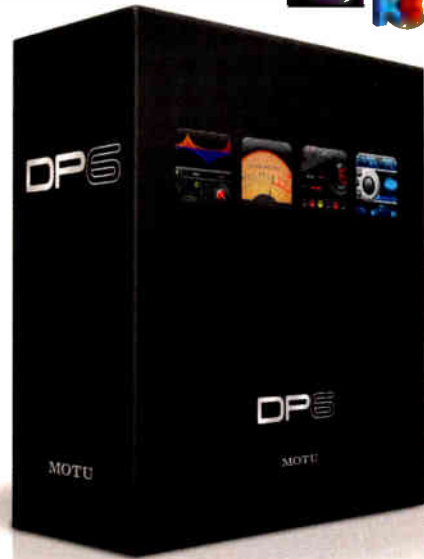
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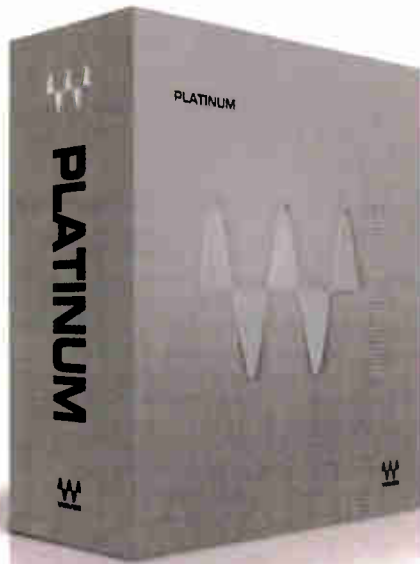


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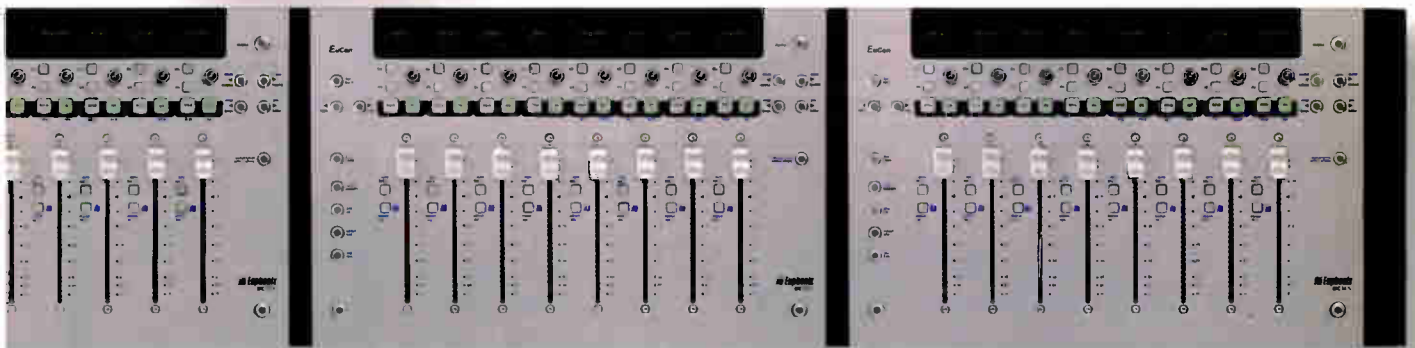
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Mackie Control Universal Pro Automated control surface for Digital Performer

The ultimate hands-on control for Digital Performer. Nine motorized, touch-sensitive Penny + Giles faders, eight V-Pots and more than 50 master buttons let you tweak to your heart's content. Apply the included custom overlay for Digital Performer for dedicated labeling of DP-specific functions.

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The Monster Power Pro 900 provides high-performance, optimized Monster Clean Power and surge protection for AC power lines. For even more complete protection, the Power Pro 5100 features Monster's Clean Power filtering, color-coded outlets, and audible and visual indicators for ground and protection status monitoring.

Steinberg Cubase 4

Customizing the UI and Using Studio Manager

I've been using Cubase for many years—not because it's necessarily superior to any other program, but because I'm fast on it. Even so, the software has hundreds of features I've never tapped, so your list of favorites will be different from mine. Here are some suggestions for taking your Cubase experience to the next level.

TEMPLATES

If you have several setups that you use often, create an empty project for each of them and use the Save As Template command in the File menu. Many aspects of Cubase's appearance can be customized, and your templates can reflect the various options. Right-click on the Transport and choose the controls you want to see: For example, I never use the jog/scrub wheel or the Arranger section, so I hide those. You can do the same thing with the toolbar above the main Track window. Also, the Setup item in the pop-up menu opens a window where you can change the order of the items in the Transport and toolbar.

Above the track list area is a row of buttons (including Global Mute and Solo). At the right end of this row is the incredibly useful Divide Track List button. Clicking this creates a horizontal separator between two independent track views. I always put my Marker track in the upper-view by itself so that the Marker track is always visible, no matter how I scroll the rest of the track area. If you have a lot of tracks, then you may also find it useful to add an extra Ruler track lower down in the track list.

MARKERS

Cubase inserts numbered markers starting with 1, but after creating a few markers I generally use Ctrl-M to open the Markers window and renumber them starting with 3. The keys on the numeric keypad locate the Transport to marker locations, but keys 1 and 2 are reserved for the left and right locator points. (You can get to markers 1 and 2 by shift-typing the number keys above the QWERTY row.)

When using looped playback or record, add a Cycle marker using the button

on the marker track. This will store the current left and right Locator points as a Cycle marker pair. You can then move the Locators instantly to any Cycle marker from the drop-down Cycle menu in the marker track. Markers can be named in the Marker window or (more conveniently) in the info line above the track area.

KEY COMMANDS

The keys I most often use are F3 (open/closes the mixer window), F11 (open/closes the VST Instruments window), the numeric keypad asterisk (starts recording) and F, which switches Follow mode on/off for the current Edit window, causing the window to scroll with the playback cursor or stay at the current location. In the piano roll editor, Q quantizes the selected notes. If nothing is selected, it quantizes all notes. Shift-I performs an "iterative" (partial) quantize, based on the setting in the Quantize Setup box.

If you need key commands that aren't in the factory set, then open the Key Commands window (from the File menu). Just about every command in the program is available here. If you do a lot of audio editing, for instance, you can assign key equivalents to the items in the Audio > Process menu. You can also create key-command presets, which could be handy for different types of projects or for different users.

The J key switches the snap grid on and off. I find J especially useful when editing MIDI parts in the piano roll because I don't like to snap the ends of notes to the grid. After dragging the start of a note to a precise rhythmic location, I hit J and then move the end of the note slightly to control the phrasing. Complete screen layouts can be stored using Ctrl-NumPad-0, and then recalled using Alt-NumPad plus a number. Any changes you make in the currently active layout, called a Workspace, will be stored unless you lock the Workspace with Alt-NumPad-0.



The Yamaha Motif XS Studio Manager window running in Cubase, with the voice-editing panel opened. At the bottom is the Cubase Transport, with a pop-up menu containing options for altering its appearance.

YAMAHA STUDIO MANAGER

As plug-ins demand more and more CPU power, my 3-year-old PC is starting to bog down. For meat-and-potatoes MIDI tracks, I've turned to my Yamaha Motif XS, which links to Cubase using an mLAN FireWire cable.

Once you've installed the Motif driver and editor, select Studio Manager from Cubase's Devices menu to open an empty Studio Manager window. In its File menu, select Setup. You'll see the Motif XS in the Device Editor column. Click the Add button and then OK to add a Motif Editor (shown above) to the Studio Manager window. Double-click this editor's icon to see a big mixer window with slots for the Motif's 16 multitimbral parts.

To link with the Motif, click the green Offline button. This opens the Auto-Sync window. Click the Start button near the bottom of this window: when the progress bar finishes moving, the Motif mixer window will return, where a green button will glow and indicate Online. Now any changes you make will be mirrored in the Motif and the entire setup will be saved with your Cubase project, just as if the Motif were a VSTi. ■

Jim Aikin (www.musicwords.net) is a frequent contributor to Mix and other music magazines. When he began using Cubase, it was a MIDI-only sequencer running on the Atari ST computer.



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

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