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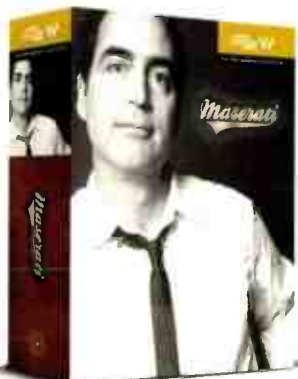
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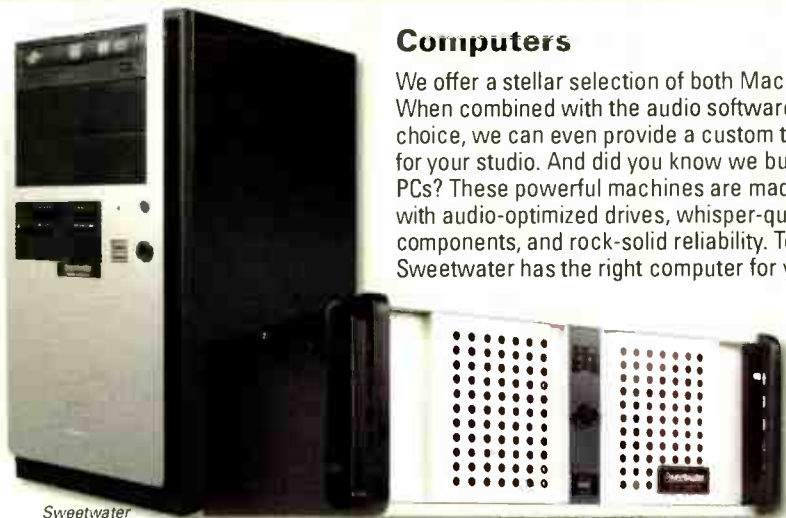
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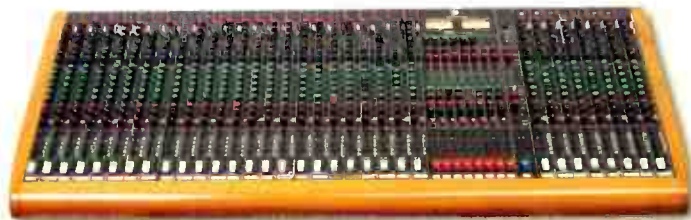
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On the Cover: Seven seasons of high-pressure post work on *American Idol* are just part of the reality-TV game for the staff of Levels Audio in Hollywood. Photo: Juergen Nogai. Inset: Steve Jennings.



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## Time to Step Out and Step Up

It would have been easy to put a shot from *American Idol* on the big screen of this month's cover. It's a certified Number One show every week it airs, and for the past seven years, it has served as something of a calling card for Levels Audio of Hollywood, bringing them *America's Got Talent* and *So You Think You Can Dance?*, among many other weekly shows, including the HBO hit *Flight of the Conchords*. They're great gigs, steady as she goes, practically guaranteed repeat business.

But then Levels founder/owner/mixer Brian Riordan called and said he would like to pop in a still from *Expedition Africa*, a show tracing the Stanley and Livingstone adventures for the History Channel. His logic, as he explained it, was that everybody knew he did *Idol*; people around town already associated him with that high-pressure reality-show environment. He loves the shows, but he felt like he was getting too promotional for a cover. At the same time, he was really jazzed about heading into equatorial Africa and showcasing the range that his tight-knit and hard-working staff enjoy. I applauded the move, and it got me thinking.

It's awfully easy to get pigeonholed in this day and age. You need a heavy-metal track? You need to hire Producer A. You need a blockbuster track for a special effects-driven summer release? You need to hire re-recording team XYZ. You need a score for a multiplayer race game? Well, then you have to hire game audio composer J. Why? Because you need the confidence, and these professionals have a track record.

But that track record can be a double-edged sword for an engineer, producer or composer. Much like a mystery writer can have a hard time launching another character when all their audience wants is another Dave Robicheaux plotline, so too can an audio professional be locked into a particular area of expertise. And it's not always fair. Most every professional I've met across more than 20 years of reporting on professional audio has wide and varied interests, along with talents across multiple genres. Most got into audio because of a love for music—all types of music. To presume that a hard-rock producer would not be right for a singer/songwriter might seem logical, but it wouldn't always be correct. If Rick Rubin can do the Beasties, Slayer, Johnny Cash and Neil Diamond, certainly others can show their range, too.

So while it might seem best in this current economic climate to hunker down and go with what you know, it might also be the absolute right time to branch out and head to Africa, literally or figuratively. Shake things up. Explore your interests. Bid on the romantic comedy. Step out of your comfort zone and see what happens. Certainly, you don't want to neglect a client like *Idol*, but then you never know where the next *Idol* will come from.



Thomas A.D. Kenny  
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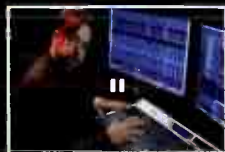
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## Levels Audio—Reality Titans Keep Rolling

**F**ounded in 1998 by producer and recording engineer Brian Riordan, Levels Audio has drawn nearly as many accolades for its eye-catching 3-year-old Hollywood headquarters as it has earned through seven seasons of intensive work on *American Idol*. Skylit and set off by brick walls, exposed beams and myriad modern accents, the 13,000-square foot space has a feel that's both functional and inviting.

"I think Levels turned out really well," says nonzero|architecture's Peter Grueneisen, who created the building in partnership with Riordan. "It was a great collaboration. And because we were doing the whole building, it allowed us to keep the open space and organize it so that it felt good and not cramped. I like it because it's more architectural, but I also just like the vibe of it. It's a nice size, and a very fun group of people."

"Above being a great architect/studio designer, he's a brilliant artist," says Riordan of Grueneisen. "And that's what I needed—a guy with a vision outside of just blueprints and calculations. He was fantastic to work with, and we were able to work with a fresh canvas once we took the building back to its masonry shell. But beyond the appearance, it was very well done acoustically. I have a lot of mixers and producers come through here, and they're all just incredibly happy with the way the rooms sound."

According to Riordan, Levels was the first all-Digidesign ICON post house in town. "That was a no-brainer for me," he says, sitting in Mix 1, the largest and most pimped-out of the five mix rooms, where he does his thing. "It was really a matter of speed and simplicity. I don't like mixing much with a mouse—I'm a fader-and-knob guy—so that was my biggest thing. I wanted to find a way to use Pro Tools and be able to still have all the automation data carried through. It's a lot quicker—I can reach down and grab knobs instead of paging through stuff."

Mix 1's centerpiece is its 32-channel Digidesign D-Control console (the other four rooms are outfitted with D-Commands), with a Stewart film-projection screen taking up most of the front wall, a Sony VPL-VW100 HD projector recessed in the back wall and Tesseract LMH-1 three-way dub-



PHOTO: DAMON McDWELL



PHOTO: ROBERT DAKLIN

**Founder Brian Riordan at the ICON (above), and with the staff of Levels Audio. Standing: Conner Moore (left) and Riordan. Center row, L-R: Jennifer Tran, Rami Hochenbaum, Thessa M'Loe, Mike Franklin, Matt Slivinski, Becca Zagorin and Christine Fernandez. Front row, L-R: Jamie Ledner, Melissa O'Leary and Adrian Ordenez.**

stage speakers designed by Tomlinson Holman serving as the big monitors. "They were designed specifically to fill the void of small to medium dub stages that need to sound like a large theater," Riordan explains. "They're amazing speakers. In fact, we pretty much designed the room around them."

All the rooms boast ADAM S3A near-field monitors and JBL 8340 surround speakers. Hardware choices include BSS Blu-80 signal processors, TC Electronic Gold Channel mic pre's and RTW surround meters.

Along with *Idol*, Levels' slate of reality shows includes ABC's *The Bachelor*, *The Bachelorette*, *Shark Tank* and *America's Got Talent*; Fox's *So You Think You Can Dance?* (they're doing back-to-back seasons, the second starting in September); and History Channel's *Expedition Africa*. Awards shows include MTV's *Movie Awards* and *Video Music Awards*, VH1's *Rock Honors*, Spike TV's *Guys' Choice Awards* and, for the past several years, the *Academy Awards*. On these shows, the company typically mixes the packages, short films and roll-in pieces up-front, and following the taping handles the post audio remixing for broadcast.

While Levels' rep may be predicated on reality TV, Riordan's background is in music, and Levels does more than its share of high-end, music-intensive projects. These include both seasons of HBO's *Flight of the Conchords* and the Peter Bogdanovich-directed *Tom Petty and the*

*Heartbreakers: Runnin' Down a Dream*. The company is doing a similarly ambitious rock doc for Warner Bros., but Riordan is not yet at liberty to reveal the identities of the subject and director.

The jobs keep coming despite the economy, but budgets are tighter than in the past, putting an additional premium on speed and efficiency without compromising quality—the very qualities on which Levels has built its business. "I'm a firm believer in keeping everything as simple as possible," says Riordan, "and as *quick* as possible because we generally charge by the hour, so we need to keep clients happy and work as fast as we can."

"We're slammed pretty much until the end of the year, and then the *Idol* train starts again. So, fortunately, we've been able to stay busy. Part of it is based on our extremely loyal clientele, and part of it is just that people like the vibe that we have here. I definitely couldn't do this without the hard work and talent of my loyal staff. This place has a family feel. I don't have much turnover and I don't use many freelancers, so clients all know who we are—this group of people that's always here. Clients walk through the door and they feel like they're home. Out there in the grind, a lot of them are working in some cubicle, and it's a relief for them to come here. They're like, 'I just wanna stay here for another four hours and then I'll go back.' That's exactly how we want people to feel." ■

*Bud Scoppa is Mix's Los Angeles editor.*



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# SESSIONS

## Night Sky Sound—Tracking Under the Stars

One of the new studios featured in *Mix*'s "Class of 2009," Night Sky Sound ([www.myspace.com/night\\_sky\\_soundinc](http://www.myspace.com/night_sky_soundinc)) is situated in a Mediterranean-style estate in Fallbrook, Calif., midway between L.A. and San Diego. Owner Steve Donato used to operate his studio in New York City, but he says, "After 9/11,

business diminished. A lot of my colleagues—musicians, producers and engineers—moved to other music cities like Miami, Nashville and L.A. And I've always had my heart set on the West Coast."

Donato takes a lot of pride not only in the unique aesthetic of his 380-square-foot control room

(where fiber-optic stars on the ceiling were patterned after actual summer sky constellations), but also in the eco-friendly aspects of the design.

"Besides being conscious of the environment and our impact on it, and wanting to do the right thing, the astronomical cost of energy here in Southern California is a great motivator," Donato says. "So our lighting systems are very low-voltage; we use low-voltage halogen or LED bulbs wherever possible. We

also have a very energy-efficient HVAC system with two separate zones—two thermostats—so if our machine room needs to be cooled but the control room doesn't, we don't waste energy."

Night Sky centers around a custom Allen & Heath Brennell Sigma console and Dynaudio Acoustics AIR 25 5.1 monitoring. Also available are Genelec 1030As, a Studer A827 Gold machine, Digital Performer, Logic and Pro Tools. Donato has amassed racks of vintage Neve, UREI and dbx processing, plus newer models from Tube-Tech, Focusrite, Avalon Design, Eventide, Lexicon, Drawmer, Aphex and TC Electronic.

Designed for music and sound-for-picture projects, Night Sky Sound has hosted recording sessions with producer Damon Elliot

working with newcomer Simone; and songwriters Greg Strickland and Tita Hutchinson (who write for Tim McGraw) working on their own album. Donato has also been doing audio post for the pre-production trailer for a film with the working title *Accelerator*.

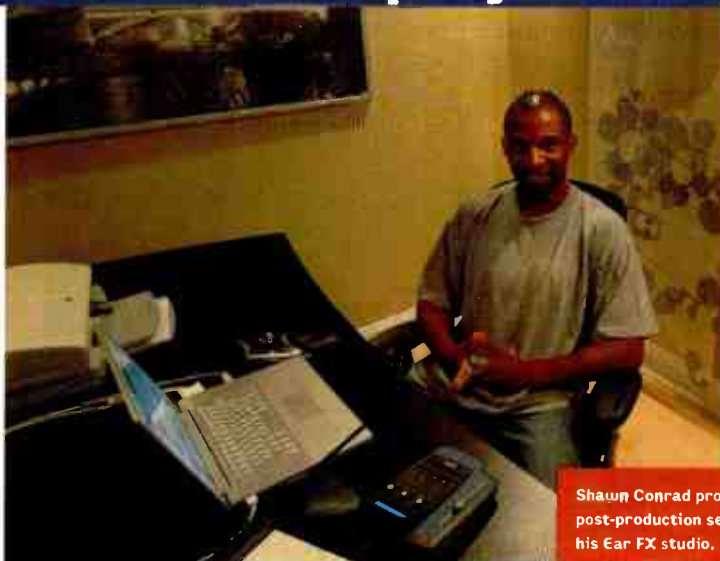
—Barbara Schultz



The control room at Night Sky Sound includes a custom Allen & Heath Brennell Sigma console, Dynaudio Air 25 5.1 monitoring and a full complement of processing, effects and instruments, all under the studio's trademark starry sky.

Night Sky Sound's Grand Live Room

## project studio EarFX



Shawn Conrad provides post-production services in his Ear FX studio.

This space in *Mix* is usually devoted to music recording studios, but Shawn Conrad is proof that even in the sound-for-picture world, some of the most high-profile projects are being completed in personal rooms.

Conrad is a former rapper (Freshco) who became a post-production mixer at Soundtrack (New York City), creating the radio (clean) versions of hit songs such as Jay-Z's "Hard Knock Life" and others for such artists as Method Man, Ja Rule, Dru Hill and other Def Jam artists of the mid/late '90s. Replacing four-letter words with music and effects, Conrad developed an affinity for the work that would become a new focus in his career. He also did post for Fox's *King of the Hill* as well as numerous television and radio commercials while at Soundtrack, before moving on to 4Kids Productions, where he was a post-production engineer for

Japanese-style animation shows such as *Yu-Gi-Oh* and *Teenage Mutant Ninja Turtles*.

In 2005, Conrad took a gig with BT Post in Atlanta, which brought him work on a variety of programming



## Envy on the Coast at Red Bull



At Red Bull Studios, L-R: Brian Byrne (guitar, vocals), producer/co-engineer Sean Beavan, Sal Bussio (guitar, keys), Ryan Hunter (vocals, guitar, drums), Jeremy Velardi (bass)

PHOTO: ERIC STENMAN

Envy on the Coast's second album was recorded at Red Bull Studio (Santa Monica, Calif.) with producer Sean Beavan (Marilyn Manson, System of a Down, NIN) co-engineering with studio manager/engineer Eric Stenman. "The band drove their tour van to the studio to record," Stenman says. "One interesting note is that Ryan Hunter—normally lead vocalist and guitar player—played all of the drums on this record. The band auditioned drummers during their first week in the studio. When none of them clicked, Ryan stepped in."

Beavan confirms: "We tracked everything live as a band with Ryan Hunter playing drums. He's just a fantastic musician with a real feel for groove.

Red Bull has three iso booths, so we had a room for each amp and the band played together in the big room with the drums.

"We were looking for a dirty, sexy Southern sound like Zeppelin meets the Allman Brothers, with a little Hendrix thrown in," Beavan continues. "Like if Rage came from Alabama. Funk-rock, Southern-fried."

Stenman says the band recorded using a combination of Red Bull's Neve 1081 and SSL 9000 K Series mic pre's. Immediately following, they got back in their van to fill their support slot on Taking Back Sunday's U.S. tour.

—Barbara Schultz

## Track Sheet

Speaking of Red Bull, in addition to owning a recording studio, the soft-drink company also sponsors the Red Bull Music Academy, a music-industry workshop

designed to teach and encourage aspiring DJs, songwriters, artists, producers and engineers. The program regularly takes this show on the

Doppler include sessions with Usher, produced by KP and engineered by Ian Cross, with assistance from Zach Steele and Michael Hastie...



L-R: Songwriters Larry, Rodney and Alphonso Mizell (co-composers of the Jackson 5's "I Want You Back" and "ABC"); moderator Karl Injex; Grammy-winning producer Bryan-Michael Cox (Usher, Mary J. Blige, Mariah Carey) and producer Maestro (Lil Wayne, Ice Cube, The Game) at Doppler Studios.

Producer Henry Golis recorded musicians Charlie McCoy, D.J. Fontana, Mike Leech and vocalists The Jordanares at Merit Studios (Nashville). Tom Pick engineered... Castle Recording Studio (Franklin, TN) proudly announced that numerous CMT Award-winning artists had recorded their projects at Castle this year. Brad Paisley, Keith Urban, Darius Rucker, Trace Adkins, Alan Jackson and the Carter Twins all recorded at the famed studio known to be a former hideout for Al Capone during the 1930s.

road to different recording studios, each time incorporating aspects of local culture and music life into the program. The Academy recently visited Doppler Studios (Atlanta), where pros convened with student participants. Other happenings at

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by Barbara Schultz

for the Cartoon Network, as well as live-action programs such as TNT/Stephen King's *Nightmares and Dreamscapes*. In '07, BT Post closed its doors and Conrad took his next logical step by starting his own studio, now called EarFX ([www.earfx.com](http://www.earfx.com)). The facility, which comprises a large main room and a two-person vocal booth, is built into Conrad's home, but he took pains to ensure that the tone of his place is anything but "basement."

"Traditional studios usually have the clients sitting behind you," Conrad says. "The clients look at the engineer's back, and the engineer turns around to talk to the clients. I do a lot of work that ends up on TV, so my goal was to have the clients feel like they're sitting in their living room. I put my setup behind them, and they get a grip on what the consumer is going to hear at home while they're watching television."

Conrad works almost exclusively inside the box, using Pro Tools Version 8. "When I do long-format sessions, like a documentary or film," Conrad says, "I use the Frontier Alpha Track, which is a one-fader module [pictured, left]. I'll use that to ride the faders instead of mouse-clicking for a 40-minute show."

He monitors in stereo via Genelec 8020s, but the studio is wired for



The studio is laid out like a living room, with only a coffee table between viewers and the video monitor.

surround and he plans on completing that setup this summer. Some of the recent projects he has completed include spots for TBS show *My Manny*, the hour-long finale to MTV's *Ti's Road to Redemption* and a series of ads for credit-report company Equifax. At press time, Conrad was in talks with Tyler Perry's production company for an ongoing project. Stay tuned. III

# L.A. Grapevine

by Bud Scoppa

**S**itting smack-dab in the middle of Santa Monica's bustling post-house enclave, POP Sound is two audio post-production outfits in one, and each is an industry leader. The home theater division's regular clientele encompasses most of the major film studios, from Sony to Lion's Gate, while the commercial division works with a passel of top-line ad agencies.



head of the commercial division, who's away on business.

POP has so many home theater projects that it runs day and night shifts, the bulk of the work involving DVD mastering, encompassing film restoration and multichannel music mixing, with as many as 50 projects running at any one time. It's in this area that all of the state-of-the-art technology and veteran expertise under this roof take on a vital importance, one that serves art and commerce, as digital technology is used to preserve Hollywood's vital legacy. Last year, POP spent eight intensive months restoring the audio for *The Godfather: The Coppola Restoration DVD Collection*, and recently completed 7.1 and 5.1 mixes of the *Star Trek* movies 1 through 10, as well as a 5.1 remix on the *Friday the 13th* series.

"A lot of what we're doing is archeology or detective work," says Thompson. "We're trying to reconstruct what they did the first time around, taking advantage of the ability to clean it up and raise the fidelity. But we're pretty well known for our approach, which is to stay as faithful to the original as possible. So there's a lot of that kind of scrutiny: listening to the takes for the score and trying to figure out how the whole thing progressed.

It also means reading whatever notes are still available—from track sheets to scribbles on the tape boxes—to figure what belongs and what doesn't."

"We take elements from the original 35mm print, or the original 1/4-inch, 1-inch or 2-inch tape," Bruno explains. "Sometimes we take music from one element and the dialog from a completely separate element, and then we take the mono mix from another element. Fortunately, our clients trust us and give us what we're asking for, which is every music element they can find. Don't send us just one, because that one might be incomplete or it might be shedding or the tape's disintegrating."

"What we're doing is saving these elements," Thompson adds. "In a lot of cases, if somebody doesn't do something now, there will be nothing to play back later—it'll be gone completely."

I mention that the restoration work POP is doing parallels that of the catalog divisions of the record companies. Clark points out that legendary engineer/producer Bruce Botnick, best known for his work with The Doors, was one of the company's founders.

What changes do they anticipate are coming in audio post?

"We're seeing broadcast in general becoming a much wider playing field," Thompson replies. "In the last five years, we've gone from being nearly 100-percent tape-based to a completely tapeless environment. We're still making shiny discs, but movies are transitioning to digital downloads. What does that mean for sound, how we prepare, what our workflow is and everything else? We're a service company that works with lots of different clients; everybody has different needs, and juggling those needs versus how we support that internally is a challenge. But we try to rise to that challenge—to choose systems that are flexible, to have various alternatives for people and in some cases be able to understand what they want more than they *know* what they want."

"We don't want to ever have to say, 'We can't do that for you,'" adds Bruno. "We don't want to say no." ■

POP is housed in a two-story structure built in the 1930s and more recently spiffed up in a hybrid style that's part-Mediterranean and part-industrial. The 17,000-square-foot facility houses 11 mix rooms: six for home theater and five for commercials. The commercial mix rooms are being changed over to Pro Tools/ICON-based mix and editorial systems, with three now in place, while the home theater rooms are moving to a Neve DFC-based platform with a DFC back end. Each of the larger rooms has a perforated screen with theatrical-type, THX-certified drivers, while the small rooms are calibrated using near-field home theater standards and ADAM monitors. There's also an ADR stage boasting a Euphonix console for dubbing and voice-over projects ranging from feature films to videogames. Each of POP's mix engineers is experienced in both platforms.

According to operations manager Doug Clark, there's an ongoing synergy between the two realms. "All these new things that come up in home theater only help the commercial guys from a technical standpoint," he explains. "When you're mixing a commercial, somebody else might be mixing *The Flying Nun* TV series and coming across certain problems, and the solutions they come up with could be applicable to the commercial side: 'Hey, when you do this in Pro Tools, this happens.' It's good to have that expertise working for you across the board."

Clark leads me into the conference room, where I meet director of home theater Moksha Bruno and technical director Steve Thompson. All three have been working here since the '90s. Thompson moving over from Dolby Labs, where he helped develop the consumer side of the company's surround program during the laser-disc era; and Bruno rising all the way from serving coffee to clients to her current executive post. The only person missing from the POP Sound brain trust is executive producer Susie Boyajan,

Foreground, Steve Thompson; standing, Doug Clark, Moksha Bruno and Susie Boyajan

Send L.A. news to Bud Scoppa to bs7777@aol.com.



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World Radio History

**W**ith the help of a cappuccino machine, some ribbon mics and a Chris Huston–designed home studio, Grand Ole Opry member Steve Wariner set about recording an album to honor the memory of his greatest musical influence, Chet Atkins.

“It started with me just sitting around the studio, playing a piece that Chet had recorded called ‘Blue Angel,’” says Wariner, who produces his own albums on his independent SelecTone Records. “I wound up recording it, and then I put some upright-bass down, and started liking the way it was turning out. I pulled out Chet’s record from the 1960s, and it had castanets on it, so I started look-

Wariner sought to replicate certain elements of Atkins’ approach but not to make an album that sounded like a time capsule. He wrote songs for the project, including “Leavin’ Luttrell,” “Leona” and “Chet’s Guitar,” playing the latter tune on, yes, one of Atkins’ guitars.

“I didn’t try to match original recordings of Chet’s,” Wariner says. “I wanted to have the warmth of his old records, but also to have the sound be crisp and bright and somewhat modern. We recorded on my board, which is two Sony DMX-R100s—they call them the ‘Baby Oxford’—put together. They may be a little out-of-date now, but I know them and I really like the sound. [Engineer] Randy Gardner and I cut to RADAR, and then we mixed to a 1973 Ampex ATR half-inch machine. We’ve done the acid test on digital as opposed to mixing to the Ampex, and this way there’s so much more warmth, no question to me.

**Steve Wariner uses two Sony DMX-R100s, joined to form a “Baby Oxford.”**

his early stuff,” he continues. “And we didn’t do a lot of outboard things, except with echo. We used an Echoplex tape loop and a new analog delay pedal from MXR called the Carbon Copy. And also, I used a Lexicon LXP-15 II, because when I traveled with Chet he used that one.”

Wariner’s studio is above the garage at his Franklin, Tenn., home. He uses it mostly for his own projects, but he has also recorded others there (including some of Jerry Reed’s final sessions). Chris Huston—the Liverpool-reared producer and engineer who worked with James Brown, The Who, Led Zeppelin, Van Morrison and others—designed the studio with the idea of making it a comfortable space for writing and casual jamming, as well as for more formal recording. There’s an elevator so heavy gear need not be hustled upstairs, and there’s enough studio floor space to handle a full band and a string section.

“Every nook and cranny of this place is wired for recording,” Wariner says. “The garage is wired in case I want to throw on some B3. And we made the control room extra big. I don’t really need this much depth for regular listening situations, but I wanted a deep wood area in the control room because I wind up recording in here just as much as in the other room. I write in here a lot, and as I’m writing I set up mics and carve out tracks.”

While the new album features some of the tricks Wariner learned from Atkins, the acolyte wouldn’t have been comfortable attempting some of Atkins’ tricks.

“There are some things he did that I’d never have the nerve to do,” Wariner says. “On one of my first sessions with him, something was wrong with the 2-inch master, and Chet said, ‘I’ll fix it.’ He reached over and pulled the tape off the machine, laid it on a block and took a razor blade to it. I stood there with my jaw open.” ■

To reach Peter Cooper, e-mail [peter@petercoopermusic.com](mailto:peter@petercoopermusic.com).



PHOTO: PETER COOPER

ing around the studio for something that could sound like that. I set up a Shure SM57 mic and was tapping anything I could find. Finally, I got the little cappuccino thing out, with the metal top on it, and tapped on it with part of a woodblock—instant castanet. I kept working, and the record really started there.”

In some way, the record—called *Steve Wariner, c.g.p.: My Tribute to Chet Atkins*—began decades ago, when Wariner first met the man whose guitar licks he’d been emulating since childhood. In addition to being among the world’s finest and most influential guitarists, Atkins was producing records and running Nashville’s branch of RCA Records in the 1970s, and Wariner was in the uncomfortable position of having to hector a hero for a record deal.

“Oh, I was scared to death around him,” Wariner says. “Soon after I met him, he called me, and said, ‘I’m going to be at [RCA] Studio B on Wednesday if you want to come down.’ I thought it was just going to be Chet, and when I got there I saw Jerry Reed, who was working on an album with Chet. Chet said, ‘Steve, do that song of yours, ‘I’m Already Taken,’ for Jerry here.’ I played the song, and Jerry goes, ‘Damn, Chet. Sign this boy. What do you want, blood?’ Chet just chewed on his cigar and didn’t respond.”

The men ultimately became close, and Wariner got his record deal. Wariner paid close attention to Atkins’ guitar work and to his production style (“He didn’t manage everything to death—just brought in great players, found great songs and let everybody do what they do,” Wariner says). In putting the tribute album together,

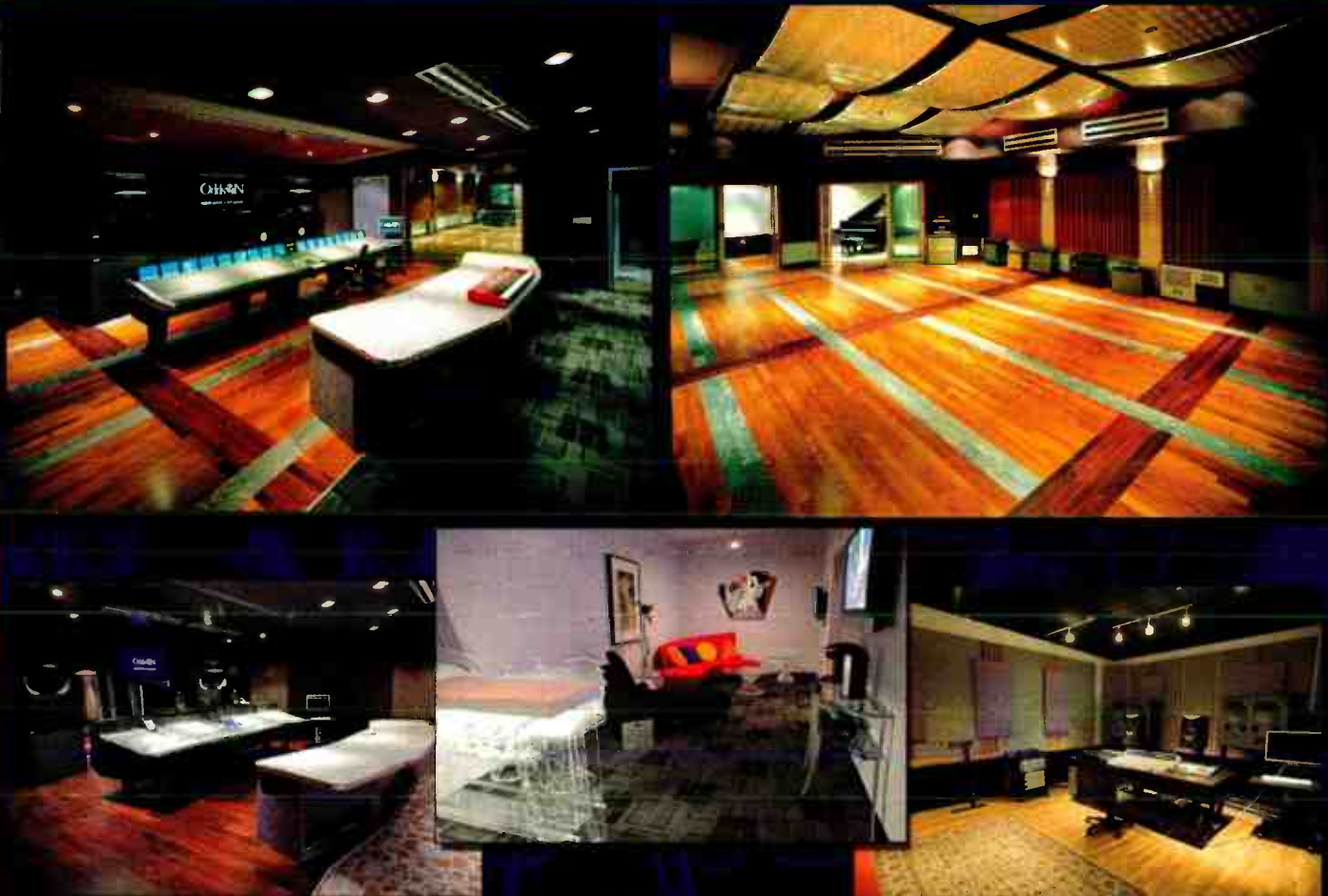


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World Radio History

# Always MIXING

By Mel Lambert

## Predubs in the World of Effects-Heavy Film Re-Recording



FILM STILL COURTESY SONY PICTURES

For *Angels & Demons* Tom Fleischman and Greg Russell worked on simultaneous M&Es for foreign language versions.

Given the complexity of high-action movies, and the fact that technology-savvy directors retain their creative options right up to the final print-mastering stage, re-recording mixers face some difficult choices. "As soon as I had read the script for *Watchmen*, I knew that we could use an extra three to four weeks on the mix," recalls Chris Jenkins, who, with Frank Montano handling sound-effects tracks, mixed dialog and music for director Zack Snyder's film about costumed superheroes in the dystopian world of an alternate America. "But you never get the luxury of working in a linear fashion on a very spe-

cial effects-heavy film that won't be locked [until close to print mastering]. The schedule just didn't allow us that luxury; it's always fluid. We joke now that picture and predubs aren't locked; instead, they are 'latched'—the film is fastened together, but not necessarily glued together!"

Typically, an effects-laden motion picture will be assigned an eight- to 10-week mix schedule, with five to seven days of dialog predubs and 15 to 20 days of effects predubs, followed by a four- to six-week re-recording and print-mastering schedule. During predubbing, the myriad component elements prepared by the film's sound-editorial team will be submixed into either

a left-center-right perspective or a full 5.1-channel surround sound balance.

The Jenkins- and Montano-helmed mixing project for *Watchmen* ranged over a total of three dub stages at the Universal Studios lot in preparation for a 5.1-channel surround sound mix, a 2.5-hour IMAX version, which Jenkins supervised in Toronto, plus a *DVD Director's Cut* and a second 3.5-hour DVD that included a pair of additional features on the movie's comic-book origins and complex back story. "Once we had seen the movie," Jenkins continues, "Frankie [Montano] started to make a map with the supervising sound editor on how he was going to lay out his predubs.





The 2012 crew at William Holden Theatre (Sony Pictures Studios), from left: Adrian Van Velsen, Fernand Bos, Rick Kline/music mixer, Paul Ottosson/supervising sound editor, David Brenner, Jeff Haboush/dialog mixer, Michael Keller/effects mixer, Michael Benavente/dialog and ADR supervisor and Fred Peck

his ideas are there in polished form, even at the start of finals. It saves a lot of time."

### Increasing Crew Count

Seasoned re-recording mixer Tom Fleischman is more used to working New York-style on film projects, riding solo on dialog, music and effects. "But these days," he notes, "with so many effects tracks it is simply too much for one person to oversee, so even in New York some projects have moved to two-man crews. Also, in New York the supervising sound editors or effects editors often prepare sound effects predubs for me. The downside is that these predubs are not usually balanced against the dialog predubs, which means more work for me at the final mix stage.

"On *Angels & Demons*, which I mixed at Sony Pictures Studios on the West Coast with Greg Russell [effects], we had a lot of foreign languages that needed to be kept separate for the international versions. For these [M&Es.] we needed to separate the various languages spoken in the film, so I created predub channels for English, Italian, Latin, Spanish and German. We had around 30 dialog

"I like to start at least three days—maybe a week—ahead of him. If they want Frankie to get started as well, he might start with Foley predubs or something like that while I get started on my dialog. But we try and rebel [against that idea]. I like to prepare one to two production-dialog predubs, a couple of ADR predubs and a group predub for at least three reels so that Frankie can be running those into the monitors as he begins his effects predubs and can design his mixes around the dialog. He'll build between 12 and 14 predubs for separation, but I wait to do my group walla until the end of the predub schedule.

"The idea is that when you're building the architecture of the soundtrack, you are also building the final mix desk. And Frankie is also writing automation data when he's building his predubs. Because our [Harrison] consoles have 512 inputs, Frankie can put up the dialog predubs and then volume-graph my sessions to make any overall dialog-mix refinements as he goes; that information stays with the session. Then he starts adjusting his effects tracks against those levels, all the time writing automation data. It is important that we are able to put up a reel that has maybe 30 predubs and music and play the whole [soundtrack] for the director."

"We had maybe 300 channels of effects on some of the busier reels," Montano recalls. "For some of those reels, my working in parallel with Chris lets me 'shape' the Foley and hard effects around the premixed dialog."

"*Watchmen* was a very extended project; our final mix was five or six weeks," Jenkins offers. "In theory, as soon as I have completed a reel of predubs and Frankie has completed a reel of effects predubs—five days into the premix

stage—we can play a trial mix for the director. We also did three or four temp mixes, I recall."

To handle the two extended DVD mixes needed for *Watchmen*, Jon Taylor and Christian P. Minkler mixed, respectively, dialog/music and effects on Universal's Dub 6 stage. "There was 25 minutes of new footage used on the two DVD projects," Jenkins explains. "We cloned our mixes for Jon and Chris [available over a SAN network], who added several transitions for the *Black Freighter* animated feature [and other bonus material]. The studio wanted everything done simultaneously, with the full complement of M&Es and foreign language mixes on all of the four soundtracks. We were working on the *Watchmen* project for a total of five months."

"The key to successful predubbing," Montano states, "is that all three consoles at Universal—Hitchcock, Dub 6 and Dub 3—match the same technical footprint. We are able to send console automation over Fibre-Channel networks along with access to the source elements and stems [available as Pro Tools sessions]. We can also edit each other's automation data across all MPC Series consoles used for predubbing and final mixing. Actually, when I'm premixing on one side of the desk, I'm also making final passes on the effects section as I go."

"In terms of passes under automation," Jenkins adds, "five years ago we might be making 200 passes through finals; these days, we are doing 2,000 passes, maybe more on some larger films. So when I sit down with Frankie on day one of final mixing, he already has between 300 and 400 passes of console automation on his effects section, as he is balancing hard effects against backgrounds, and then Foley against that. Consequently, a lot of



tracks, where normally I might have around 16. I prefer to create my own dialog predubs so that I know where everything is and how all of the original production tracks were processed."

Because the results need to be shaped so specifically for the film he will be mixing, Russell prefers to handle effects predubbing himself. "If you give 10 different people the same elements, you'll get 10 different predub mixes!" he says. "It is hard to take something that somebody else has done for you; if it's not what you need it to be, you end

# The Well-Accessorized DAW

## 50 Cool Add-Ons That Take Your Workstation To the Next Step

By George Petersen

Once upon a time, every studio had a distinct character—with different recorders, consoles and outboard toys that set each facility apart from the rest. But with the rise of the DAW-based studio, nearly every rig has access to the same DSP plug-ins and unlimited track capability, making for a lot of “me, too”-equipped rooms. So far, you’ve upgraded your CPU, maxed out your RAM, added a RAID array and/or network, installed the latest OS and are running that new rev of your DAW software. With your high-performance converters/front end, tons of effects plug-ins and virtual instruments and a console/controller, you’re close to creating that no-compromise system that’s capable of nearly anything. However, a bit of accessorizing—some final, relatively inexpensive touches—can take your DAW to the next step.

### Taking Control

Using the same symbols and color-coding system built into Digidesign control surfaces while retaining all the conventional alphanumeric labels of standard computer keyboards, Digidesign’s ([www.digidesign.com](http://www.digidesign.com)) Pro Tools Custom Keyboard (\$119 in Mac or PC versions) has simple USB connectivity and is an ideal replacement for that old, coffee-stained keyboard you’re using.

Novation’s ([www.novationmusic.com](http://www.novationmusic.com)) Nocturn (\$199) is a 9.4x5.4-inch unit offering fast fingertip control of your plug-ins. Compatible with any DAW, it features eight touch-sensitive rotary encoders, eight assignable buttons, Novation Speed Dial and Automap Universal 3.1 mapping technology.

TranzPort (\$249) from Frontier Design ([www.frontierdesign.com](http://www.frontierdesign.com)) offers wireless control of any DAW software for arming tracks, transport control, setting markers, control pans, punch-in/out, start loops, etc. As a bidirectional controller, TranzPort also provides feedback on signal levels, timecode position, track names and more.

Pok (\$599) from X-Tempo ([www.xtempozone.com](http://www.xtempozone.com)) is

a wireless surface with eight footswitches that are easily customizable to control any Mac/PC DAW/plugin/virtual instrument function. It includes simple switch-editor software and a receiver that links to your DAW via USB.

Version 2 of the Lemur (\$1,769) multitouch controller from Jazzmutant ([www.jazzmutant.com](http://www.jazzmutant.com)) introduces new controller objects to the graphic interface, including Gesture, an emulated trackpad with gesture recognition, and Breakpoint, a multi-segment envelope editor. You can also use Lemur as your mouse and QWERTY keyboard for your computer.

JLCooper’s ([www.jlcooper.com](http://www.jlcooper.com)) MCS-Panner (\$1,299) is a three-axis joystick mechanism with five rotary encoders and 10 switches for controlling surround panning for digital consoles and DAWs such as Pro Tools, Digital Performer and Nuendo. It can be joined to other MCS Series products or used stand-alone with an optional MIDI adapter.

There are bigger USB DAW controllers, but PreSonus’ ([www.presonus.com](http://www.presonus.com)) FaderPort (\$229) packs a wallop. Compatible with Mac and PC DAWs, this mini-power-



PreSonus' FaderPort is compatible with Mac and PC DAWs.





**M-Audio's AxiomPro 25  
USB/MIDI controller**

house can write single-channel and group fader automation, and features full transport control; a long-throw motorized fader; footswitch punch-in/out jack; pan control knob; and buttons for mute, solo, record-enable and selecting edit, mix and transport windows.

### The Listening Post

ARC (Advanced Room Correction) software from **IK Multimedia** ([www.ikmultimedia.com](http://www.ikmultimedia.com)) measures and calculates the acoustics in your room and applies correction via an advanced EQ plug-in. Retail is \$599, including a calibrated measurement mic.

**KRK's** ([www.krksys.com](http://www.krksys.com)) Ergo combines A/B control room speaker-switching, headphone output, monitor volume control and room-correction DSP—all within a desktop box (\$799 retail, with measurement mic; includes Mac or PC setup software).

**Level Pilot** (\$119) from **TC Electronic** ([www.tc-electronic.com](http://www.tc-electronic.com)) offers passive volume control direct to your active speakers (or power amp) from your DAW outputs with stereo XLR I/Os. It's a simple, elegant solution providing smooth control with full-fidelity, straight-wire performance.



**TC Electronic Level Pilot**

Taking the passive approach to monitor control even further, the **M3ph Mk II** (\$1,025) from **Coleman Audio** ([www.colemanaudio.com](http://www.colemanaudio.com)) mates four switchable inputs and three outputs (all balanced XLR) with mute and phase-reverse controls, and a four-gang stepped attenuator. It has  $\pm 0.05$ dB precision, and one output can be switched to a fixed level for feeding an outboard meter.

The **Grace** ([www.gracedesign.com](http://www.gracedesign.com)) m902 reference headphone amplifier (\$1,695) combines high-res D/A converters and audiophile analog components in the high-current transimpedance output amplifier. Stereo inputs include balanced XLRs, RCA jacks, AES-3 and S/PDIF co-ax/optical sources with sample rates from 44.1 to 192 kHz supported for direct-from-DAW listening.

The **Aphex** ([www.aphex.com](http://www.aphex.com)) HeadPod (\$249) puts four independent stereo headphone amps with individual volume controls into a compact chassis. Convenient, yes, but its ultralow-distortion performance and high headroom are impressive.

**Machine Room** (\$699) from **Primacoustic** ([www.primacoustic.com](http://www.primacoustic.com)) cuts down annoying drive and computer fan noise by enclosing your CPU inside a 30x16x24-inch (HxWxD) foam-lined isolation housing that's kept cool by a slick, low-noise, air-exhaust manifold driven by a three-speed fan.

Getting your computer out of the control room is a great idea, and **Gefen Extenders** ([www.gefen.com](http://www.gefen.com)) make it easy. The \$899 CAT5-1500HD



**Apogee Electronics' ONE USB interface/mic**

system uses Cat-5 cable to put up to 200 feet between your PC/Mac and DVI display and USB peripherals. The CAT5-5500HD does the same with two DVI displays for \$1,399. Or if you really hate your computer, the fiber-optic DVI 3500HD (\$2,679) pushes that degree of separation out to 6,660 feet.

### DAW in a Pocket

About the size of a USB Flash drive, **Digidesign's** Mbox 2 Micro (\$279) lets Pro Tools users edit/sequence/mix sessions created on Pro Tools HD, Pro Tools LE and Pro Tools M-Powered, or compose loop-based or virtual instrument music on (included) Pro Tools LE software. No audio inputs, but a 1/8-inch stereo out can drive headphones or powered speakers for total mobility.

The truly portable **energyXT 2.5** from **XT Software** ([www.energy-xt.com](http://www.energy-xt.com)) is a full-featured DAW application that lives on a USB thumb drive. Plug into any Mac/Linux/PC computer, and you'll be recording in minutes.

# Deep Dimensional Sound

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with onboard effects, synths and drum sounds. Tracks can be easily exported to any other DAW. It comes in \$99 standard and \$149 Plus versions, the latter adding unlimited tracks and ReWire Energizer support.

PortaGig from Glyph ([www.glyphtech.com](http://www.glyphtech.com)) is a line of pocket-sized, 5,400- or 7,200 rpm hard drives with 160/250/320/500GB capacity. These lightweight, fanless aluminum-enclosure drives support sessions with high track counts and are powered by the FireWire 800 or USB 2 bus, or the included AC adapter.

Just shipping, Apogee Electronics' ([www.apogeedigital.com](http://www.apogeedigital.com)) ONE is a pocket-sized, 44.1/48kHz USB interface/microphone that's designed to work with Apple's GarageBand, Logic, Final Cut Pro or any Core Audio-compliant app. Features include an internal condenser mic, XLR preamp input with phantom power, three-segment LED I/O metering and 1/8-inch output for headphones or line. Retail is \$249.

### Universal Translators

Now in Mac and PC versions, SSL's ([www.solid-state-logic.com](http://www.solid-state-logic.com)) Pro-Convert (\$699 list) lets DAW users convert session project files from one format to another, including Pro Tools 7x, Cubase, Nuendo, Logic, Final Cut Pro and Soundscape. Its new interface (coming to PC users later this year) streamlines the process.

Translator (\$149) from Chicken Systems ([www.chickensys.com](http://www.chickensys.com)) takes any pro sampler CD-ROM/disk (Giga3/GigaStudio, EXS24, Kontakt, Reason NN-XT, SFZ, SòundFont, SampleCell, Kurzweil, Ensoniq, Akai, E-mu, Roland and more) and converts one or any of its programs, instruments or samples—or the entire disk—into a format you can use with EXS24, Kontakt, Structure, Independence, HAL-ion, Reason NN-XT, SampleTank, SFZ, Roland MV8000/Fantom, Alesis Fusion, Korg Triton and Battery 1.

A must for Logic users—or with any sampler that can import EXS-format instruments—the Compendium Bundle (\$549) from Redmatica ([www.redmatica.com](http://www.redmatica.com)) combines three tools—ExsManager Pro, Auto-Sampler and Keymap—for creating and managing multi-

sampled instruments, removing the drudgery of resampling your hardware and software virtual instruments.

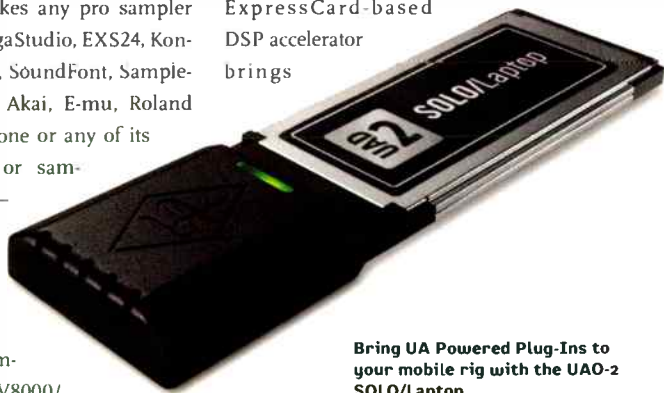
Snapper from Audio Ease ([www.audioease.com](http://www.audioease.com)) is a simple \$79 Mac app that automatically appears whenever an audio file is selected in the finder and displays the waveform. From there, you can opt to play the file (more than 50 formats are supported, including 192kHz and 5.1 surround files) and upload it to your Pro Tools cursor or export it to MP4, AIFF, WAV, BWF, etc., or split stereo files into L/R mono (or vice-versa).

### DSP Horsepower

The \$3,495 TC Electronic PowerCore 6000 offers System 6000 algorithms for a fraction of the original's price. The unit's eight DSP engines are the same DSPs used in System 6000, and its SRAM memory design lets users run the 6000's many included reverb and effects programs with popular DAWs, as well as with any other VST- or Audio Units-compatible host.

Ideal for small studios or laptop-based DAWs, Duende Mini from SSL provides more DSP punch for driving up to 16 mono channels—upgradeable to 32—of plug-ins at up to 96 kHz within your DAW. The compact \$699 unit interfaces via FireWire, and includes SSL EQ and dynamics.

Now shipping, Universal Audio's ([www.uaudio.com](http://www.uaudio.com)) UAD-2 SOLO/Laptop (\$499 MAP) ExpressCard-based DSP accelerator brings



Bring UA Powered Plug-Ins to your mobile rig with the UAO-2 SOLO/Laptop

the power of UA's Powered Plug-Ins to your mobile rig, freeing your laptop's brain for mixing duties. It comes with the 1176SE compressor, Pultec EQP-1A EQ, Realverb Pro, CS-1 channel strip and a \$50 voucher for other UA goodies. This Mac/Windows system has VST, Audio Units and RTAS support, and it includes Mellomouse ATA Auto-Delay Compensation for Pro Tools LE.

Have suggestions for other DAW studio essentials? E-mail your ideas to [mixeditorial@mixonline.com](mailto:mixeditorial@mixonline.com) and let us know!

### Studio Essentials

Perhaps a bit more than an "accessory-



ry." Korg's ([www.korg.com](http://www.korg.com)) MR-2000S (\$2,499) is a 1-bit, ultrahigh-res recorder that records/plays in superlative 1-bit formats (1-bit/2.8MHz or 5.6MHz), as well as various PCM resolutions (16-bit/44.1 up to 24-bit/192kHz).

If you're tracking guitars or vintage synths, staying in tune is a must. Peterson's StrobeSoft Deluxe Suite ([www.strobesoft.com](http://www.strobesoft.com), \$149) tuning software offers 0.1-cent accuracy and works in stand-alone mode or as an insert or bus in your VST- or Audio Units-capable DAW.

The CLASP (Closed Loop Analog Signal Processor) from Endless Analog ([www.endlessanalog.com](http://www.endlessanalog.com)) turns your 2-inch analog deck into a tape-flavored "plug-in" for your DAW. The system comprises a hardware interface, VST plug-in (one for every channel) and a sync cable. Just run the session from your DAW as usual and CLASP performs real-time, synched transfers from the repro head of your deck.

FlexiBooth (\$399) from Primacoustic is a collapsible, 24x48-inch wall-mount vocal booth that opens up when needed, folds out of the way when unused and doubles as a wall acoustic treatment.

A short USB extension cable can keep your iLok from sticking straight out of your PC or laptop, where it's susceptible to damage or being snapped off. Available nearly everywhere for about \$2, this is cheap insurance for all those pricey plug-in authorizations.

Another low-cost add-on is a USB gooseneck light like the Middle Atlantic Products ([www.middleatlantic.com](http://www.middleatlantic.com)) LT-GN (about \$15), which can put a bit of much-needed illumination over your QWERTY or music keyboard or DAW controller, especially in those dim control rooms.

Admittedly, there are some slow periods during studio sessions, so you might check out the Hauppauge ([www.hauppauge.com](http://www.hauppauge.com)) WinTV-11VR-950Q (\$129) digital TV tuner on a USB stick, which lets Mac or PC users watch/record high-def TV on their desktop or laptop.

### Music Fun

If you do drum parts, this is the best investment you'll ever make. Korg's nanoPAD (\$72) combines 12 responsive pads with an X/Y controller—with roll and flam modes—and the ease of USB powering. A function for entering chords from a single pad puts this way over the top—cool!

The Novation 25 SL MkII (\$499) is a 25-key desktop USB/MIDI controller with Automap 3 PRO for DAW interfacing. Features include eight faders and 16 knobs (all touch-sensitive), eight rotary encoders with LED rings, a 144-

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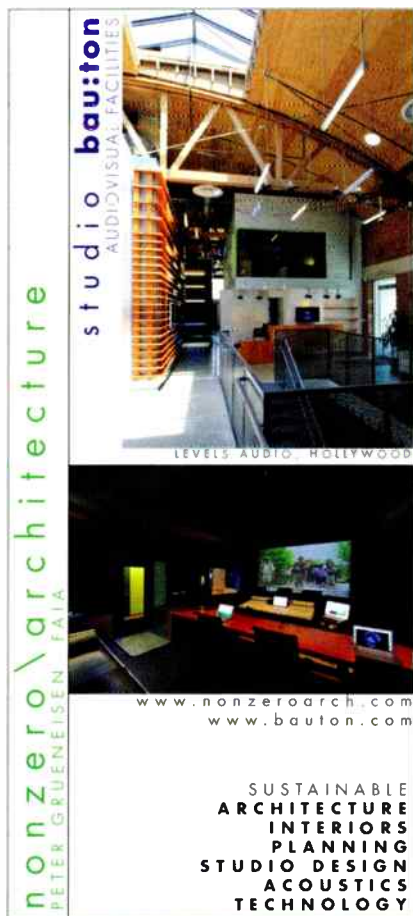
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character status display, 32 backlit buttons (including transport keys), speed dial, Xpression pad and eight soft-feel drum pads.

M-Audio's ([www.m-audio.com](http://www.m-audio.com)) Axiom Pro 25 (\$499) USB/MIDI controller features a 25-note keyboard, HyperControl MIDI/host mapping, eight velocity-sensitive trigger pads, eight rotary encoders, six reassignable DAW transport buttons, 50 memory locations and toggle switching between instrument and mixer control modes.

Akai Professional ([www.akaipro.com](http://www.akaipro.com)) teamed up with Ableton to create the APC40 (\$599) stage or studio hardware control surface. Designed specifically for Ableton Live, the unit communicates bi-directionally with Live, displaying data from the software on its clip matrix of 40 triggers and LED rings surrounding each knob.

MOTU ([www.motu.com](http://www.motu.com)) Volta (\$249) Mac Audio Units plug-in lets users with a TRS-output MOTU audio interface play vintage (or modern) synths/gear with Control Voltage interfacing using MIDI notes and controller data—including automating effects parameters. Sweet!

Realistic conga and percussion parts require a hands-on approach. Roland's ([www.rolandus.com](http://www.rolandus.com)) HandSonic 10 (\$799) features 10 individual pressure-sensitive pads, 400 on-board sounds, multi-effects and a D-Beam controller for real-time sound and pitch control. Best of all, it's fun!

Tanager Audio Works' ([www.tanageraudioworks.com](http://www.tanageraudioworks.com)) Chirp is a \$29 Mac/PC app that turns your computer or laptop keyboard into a virtual MIDI keyboard controller with 18 piano keys and 10 drum triggers to drive any music software or soft synth. This low-latency controller accommodates playing up to seven simultaneous notes in real time, allowing for even complex 9/11/13 chord-entry over two octaves.

### Interfacing

Whether for digital DJ'ing or archive transfers, the USBPhonoPlus V. 2 (\$129) from ART ([www.artproaudio.com](http://www.artproaudio.com)) packs an RIAA preamp, line-level inputs, TosLink optical I/O, S/PDIF input, USB output and headphone monitoring into a versatile do-all box. It can be powered from the USB bus or an external supply.

Soundflower (freeware) from Cycling '74

([www.cycling74.com](http://www.cycling74.com)) is an interapplication audio routing utility for Mac OS X that prevents itself as a simple audio device, allowing any audio application to send and receive audio with no other support needed. It's available as 2- and 16-channel devices.

MXL's ([www.mxlincs.com](http://www.mxlincs.com)) Mic Mate (\$99) turns any dynamic or condenser microphone into a USB mic for grabbing a quick sound effect or those record-it-now laptop sketchpad sessions. No drivers required, and it can supply 48VDC phantom, as well.

Creating custom studio cabling has never been easier, thanks to the Modular Snake (\$17 to \$120) system from Planet Waves ([www.planetwaves.com](http://www.planetwaves.com)). Users select from 5/10/25/50-foot "core" oxygen-free copper cables with DB-25 connectors and mix/match various breakouts to suit any application. Available terminations include digital (AES, with four male/four female XLRs) and analog (with eight channels of XLR male, XLR female, TT, TRS or raw ends for custom connectors).

### Metering, Metering, Metering

The Waves ([www.waves.com](http://www.waves.com)) Dorrough Meter Collection brings precision models of these industry-standard meters to your DAW screen,



Blue Cat Audio's Analysis Pack includes Digital Peak Meter Pro 3.

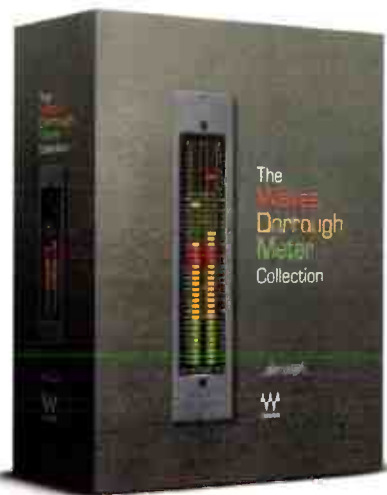
with average and peak levels, "overs" count and phase correlation at a glance with a choice of horizontal, vertical and arc shapes—in three sizes. It's native Mac/Win, and lists for \$500 (stereo) or \$800 (5.1).

Still a classic, Metric Halo's ([www.mhlab.com](http://www.mhlab.com)) Spectrafo Standard (\$400) is a stand-alone Mac app offering versatile signal metering, high-speed/high-res spectral analysis, the unique Phase Torch, correlation metering, triggerable waveform display and more. A de-



luxe Complete edition adds even more features and flexibility.

The LM5 Loudness Radar Meter plug-in for Pro Tools HD from TC Electronic derives statistical information from the ITU-R BS.1770 standard to visualize instant loudness and loudness history. The \$1,245 software helps



Waves Dorrrough Meter Collection

engineers monitor the dynamic range at their disposal during production and the dynamic range restrictions needed for distribution to various platforms.

### And There's Still More

The Analysis Pack (\$299) from Blue Cat Audio ([www.bluecataudio.com](http://www.bluecataudio.com)) has six new audio analysis plug-ins for Mac and PC, offering an audio level meter, spectrum and stereo-field analyzers, multitrack oscilloscope and more, including some slick sidechaining tricks. The DirectX and Mac/PC VST versions are also updated with numerous improvements.

The Sonalksis ([www.sonalksis.com](http://www.sonalksis.com)) FreeG (free) provides mono or stereo master channel control in the insert chain of the Mac/PC VST/RTAS/Audio Units host program, offering high-res metering, master fader, pan, trim, phase reverse, mute, bypass and more. You can't beat the price of freeware.

Last, but far from least, your hearing is priceless and the \$44.99 Radio Shack ([www.radioshack.com](http://www.radioshack.com)) analog SPL meter is a cheap, simple way of monitoring listening levels. Or go the deluxe route and kick in the extra \$5 for the newer version with digital display. Someday, your ears will thank you. III

George Petersen is the executive editor of Mix and runs a small record label at [www.jenpet.com](http://www.jenpet.com).



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# Harry Potter

## And the Half-Blood Prince



Harry Potter and Dumbledore search for answers about Lord Voldemort.

### Creative Sound Team Keeps the Series Fresh

By Blair Jackson

Good heavens, will we ever be rid of Lord Voldemort? Here we are, six installments into the *Harry Potter* film series—the latest, *Harry Potter and the Half-Blood Prince* was released in mid-July—and the Supremely Evil One is still wreaking havoc around the globe; indeed, in his quest for ultimate power, he is no longer just threatening Harry Potter and the wizards-in-training at Hogwarts School, but also increasingly sending his dark minions into the regular (Muggle) world. Yikes! It's been quite a ride these past eight years as J.K. Rowling's magical books have unfolded on the screen. We've watched the young actors pass through adolescence before our eyes, seen the special effects become increasingly realistic and frightening, and marveled at how each film has built on the previous one, even with four different directors at the helm, each eager to carve

out his own identity in the series. *The Half-Blood Prince* (and the final book, *Harry Potter and the Deathly Hallows*, which will come out as two films, one in the fall of 2010 and one in 2011) brings back the director of the acclaimed fifth installment, *Harry Potter and the Order of the Phoenix*, David Yates, and many others who came onboard with Yates, such as supervising sound editor James Mather. (Others are veterans of *Potter* films dating back to the first one, *Harry Potter and the Sorcerer's Stone*.) It's partly this blend of experience and new blood that has helped keep the series fresh all these years.

When Yates was tapped to direct *Order of the Phoenix*, it was somewhat of a surprise as the director had never made a film remotely like it before. The same could be said for Mather; his best-known work as a sound supervisor was for several productions that came out of England's Aardman

Animations—various *Creature Comforts* shorts and Nick Park's two stop-motion masterpieces, *Chicken Run* and *Wallace & Gromit in The Curse of the Were-Rabbit*. However, it was another film that led to his being hired by Yates for *Order of the Phoenix* (and the subsequent three *Potter* films).

"I did a very, very different film called *Notes on a Scandal*, which was an extraordinary actor's film [earning Oscar nominations for Judy Dench and Cate Blanchett]," Mather says from his Soho Studios, where he's working on the highly anticipated new version of *Sherlock Holmes*. "It caught director David Yates' eye because he's a very good director of people; a real actor's director. The producers wanted me to come in and interview [for *Order of the Phoenix*] because this was going to be David's first big feature and he was very keen to incorporate new people into the world of *Potter* who had experience—maybe not on that scale,





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**Above: Supervising sound editor James Mather at one of his favorite studios, London's Goldcrest Post. Left: Ron Weasley, Hermione Granger and Harry Potter in one of their calmer moments.**

but there would be a team of people he could come in and run with. There was nobody who was going to pull rank with anybody else; it was all a case of, 'Let's all do this together.' He liked *Notes on a Scandal* and was also a big fan of *Wallace & Gromit* with all the detailed work that went into that." Mather also had experience running his own London-based post-production company, SoundByte Studios, which is partly what prompted Aardman to let him try his hand at supervising in the first place after years as a dialog, Foley and FX editor.

Coming into a well-established, big-budget film series was challenging, to say the least, Mather admits. "I had big shoes to fill—[previous supervisors] Eddy Joseph, Randy Thom and Dennis Leonard all did fantastic work. It was quite a daunting prospect, and my first point was to look at the English technicians they had used on the

previous films—designers, dialog editors and assistants, as well—and incorporate as many of them as I could, while also introducing some of the people that I normally work with. For that film, we had probably a 60/40 split of people who were previous *Potter* editors, so A) they knew the material, B) they knew the process, and C) they all had generic elements in their systems from previous films. It meant that from my and the other new editors' point of view, there was a lot of security in knowing that there was a shorthand already established. I think what happened as a result was that it gave the other 40 percent a lot more confidence—it certainly gave *me* more confidence—a little more room for creativity and a little more room for me to then sit back and watch and understand the process without trying to lead it blindly, as it were. And by understanding the process, I could then adapt it and change

it to the systems I was more familiar with."

Like all the previous *Potter* films, *The Half-Blood Prince* was shot mostly at Leavesden Film Studios, but posted at Pinewood Studios. Daniel Laurie was ADR supervisor, Derek Trigg the principal Foley editor, Bjorn Ole Schroeder the supervising dialog editor, and the main re-recording mixers—who worked on a Euphonix System 5 desk fed by innumerable Pro Tools systems—were Mike Dowson (backgrounds, Foley and dialog) and Stuart Hilliker (music and FX). Nicholas Hooper—another carry-over from *Order of the Phoenix*—wrote the moody, dramatic score.

Asked to list a couple of the sound editors who were particularly helpful working on *Half-Blood Prince*, Mather notes that there were many, but mentions Michael Fentum, who previously worked with him on *The Chronicles of Narnia: Prince Caspian*, and is also part of the *Sherlock Holmes* team; Emmy- and BAF-TA Award-winner Andy Kennedy, who has contributed sound work to the last five *Potter* films, and "is a trusted favorite, always good to have onboard"; and James Boyle, "who came in on *Order of the Phoenix* to take care of the fight between [good wizard] Dumbledore and Voldemort." Mather says that in general he prefers to have his editors work on a multiplicity of

ally feels like what the band was meant to be. When we did the residency shows a year or so ago [five nights at Chicago's Riviera Theatre in February 2008], this band became conversant with all those other records and able to claim some ownership. Whatever different styles we'd tried on those other records, this band is adept at them, and maybe this [new] record grew out of that experience. I think this record is the least self-conscious and most confident of all the Wilco records."

As usual, it's difficult to characterize the songs on *Wilco (The Album)* because they cross

Sansone and Tweedy; and keys by Mikael Jorgensen and Sansone. There are various electronic effects tossed in here and there in small doses, and also a few nice guest spots: Dave Max Crawford on trumpet on a tune, Jason Tobias on slide cimbalom (!) and, most prominently of all, Leslie Feist as duet vocalist on the lovely, affecting folk tune "You and I." With the notable exception of the edgy and insistent "Bull Black Nova," *Wilco (The Album)* is a pleasing and sonorous ride through varying musical and emotional terrain.

This time out, Wilco shared the production



Wilco's Chicago headquarters and studio, The Loft, is separated into areas that the bandmembers call "neighborhoods."

so many stylistic boundaries and draw from many different influences. A lot of Tweedy's songs have folkish underpinnings, regardless of what style they eventually emerge as, and there are certainly several nods to The Beatles here—"I'll Fight" has a ringing *Beatles* '65 vibe in places; "Everlasting Everything" contains faint echoes of "A Day in the Life"; and the propulsive "You Never Know" sounds like the best song George Harrison never wrote.

But with Wilco, the flashes of familiarity always bubble up from within the greater, unmistakable "Wilco Sound." That starts with Tweedy's expressive vocals—always up front, usually (but not always) fairly dry—and then wraps the band around that lead vocal. On this album, there's plenty of cool lap-steel and slide guitar, fuzzed drones, all sorts of tasteful keys—including piano, organ, harpsichord and an occasional synth—lean, solid bass lines, and drums and percussion that ranges from prominent pounding to subtle splashes, depending on the requirements of the song. The liner notes don't say who plays what on which song, but it's a good bet that bass and drums will be John Stirratt and Glenn Kotche, respectively; guitars by Nels Cline, Pat

responsibilities with Jim Scott, who has mixed Wilco albums dating back to *Being There* (1996) and certainly is part of the extended Wilco family. Scott, who has worked with so many big names through the years in production, engineering and/or mixing capacities—Petty, Sting, the Chili Peppers, Weezer, Dixie Chicks; the list goes on—and was profiled in *Mix's* February 2009 issue, says the invitation to get involved with Wilco at the tracking stage happened unexpectedly. In October 2008, the band invited Scott to The Loft—the Northside Chicago warehouse space that serves as their headquarters and studio—and asked him to watch them do some tracking and overdubbing on new material.

"They had recorded versions of almost all the songs that are on the new album," Scott says. "It was fun watching that. I said, 'Sounds good, looks like it'll be a great record,' and then I left. I got a call from Jeff a couple of days later, and he said, 'Well, what do you think?' I said, 'I think the songs are pretty great, but it's not very exciting. I don't think it's as good as you can do. I know it can be better. I think everyone needs to work a little harder.' I told him in the nicest possible way I didn't think he was ready to start

mixing what I'd heard. And I don't think he was thinking it was ready to mix, either; I think he was asking, 'Where do you think we're at?' 'Some good songs, but you need better recordings; let's shine this up. Let's do this right!' So at that point, he asked, 'Do you want to make a record with Wilco?'

"As our lives progressed, we found ourselves down in Auckland, New Zealand, in December, working with Neil Finn and a bunch of other really spectacular musicians on the 7 Worlds Collide project [an all-star benefit album and DVD, titled *The Sun Came Out*, to raise money for Oxfam, set for an early August release]. The plan was to do the Wilco record after this wintertime experiment in New Zealand." In addition to enlisting four of the six members of Wilco (Cline and Jorgensen were not involved), this 7 Worlds Collide album also brought together Phil Selway and Ed O'Brien from Radiohead, Johnny Marr (of Smiths and Modest Mouse fame), Scottish singer/songwriter K.T. Tunstall, Soul Coughing's Sebastian Steinberg, multi-instrumentalist Lisa Germano and others. Finn's first 7 Worlds Collide album, which came out in 2001, featured much of the same cast of musicians, plus Eddie



Vedder, but not Wilco or Tunstall. And whereas that album was a live recording, for the 2008-'09 version the musicians convened at Finn's Roundhead Studios complex, writing songs and recording together in all sorts of different configurations. "We had three studios going at once there," says Scott, who cut 20 of the 30 songs

with a great band."

Everything was recorded on tape and then transferred to Pro Tools, "and after we'd gotten all our tracks done, we went back to Chicago to work on it some more. So we went from New Zealand summertime to an ice-cold, freezing Chicago winter working at The Loft," Scott says with a laugh. "The guy upstairs there has a machine shop and there are these presses going all day long—you hear this deep *ka-chonka, ka-chonka*. So there's this machine noise and there are also sirens. It's not built like a recording studio; it's not all soundproofed and isolated. So you grit your teeth. and say, 'Okay, if there's a little siren in the background, that's the way it goes. If there's a big machine shop crunch in the middle of Leslie Feist's vocal, hopefully it will be in time. That's how it goes.' They're used to it, and they're not the type of people that would be derailed by that anyway."

On the song "Deeper Down," for instance, "you can hear some of the sound of the workspace in there. We were saying, 'Can you believe how *loud* it is and we're trying to make a record here?' Well, you can't hide it, so we might as well put it on the record and put it where we want it. So we would wait

for particularly loud [noises] and record them and sample them and move them into the music to help make the atmosphere."

The Loft takes up an entire floor of a four-story building and is loosely separated into what Scott calls "little neighborhoods" rather than dedicated rooms. "There's a control room area, a performance area, plus you can make a 'drum room' with baffles," he says. "There's storage down on one end [of the floor] and guitar racks and amps through the middle, and everybody who needs a desk has a desk. There are even bunk beds and some guys crash out there. The console is a late-'80s or early '90s Sony console, which was only used for monitoring." For *Wilco (The Album)*, Scott brought in his own Neve BCM-10 sidecars, which contain coveted 1073 and 1079 EQs.

As Cline and Jorgenson hadn't been in New Zealand for the basic tracks sessions, their parts were added back at The Loft. "Nels and I spent a couple of weeks together—he had two or three parts on each song," Scott says. "I don't look at it like it was a real created, overdub-y record, but Nels had parts in his mind, parts they had

worked out together during the pre-production period before I even got there, and then there were some experiments along the way. One thing always leads to another, and so Mikael would hear something and he's got some great [keyboard] sounds and really good ideas. All of those guys have a great sense of how to put parts together in interesting ways."

When it comes to miking guitars, Scott says, "I'll usually use a Shure 57 and a Neumann 87. It's the good mic/bad mic thing—the 57 takes a beating and gets all the brightness and crispness, and the 87 rounds it out on the edges and gives it some character. The combination of those will give you a good electric guitar sound every time." Scott also called on Royer 121 ribbons on occasion during the Chicago sessions. "I actually prefer older ribbon mics—my [RCA] 44s and 77s—but I didn't bring them with me and the Royers were great. If it's the right sound coming out of the amp, the Royer will faithfully record it for you." Scott also notes that "all the reverb and tremolos on those parts came out of the amps from Nels and Patrick," rather than being added later during mixing. The song "Everlasting Everything" also benefitted from the addition of a retro-cool Mellotron string part.

For Tweedy's vocals, Scott used a Shure SM7: "We tried more expensive mics but they weren't right. Jeff knows that mic, he's real comfortable with it, and I am, too. I've used it on Anthony Keidis' vocals on Chili Peppers records. There are better mics for different people at different times, but that seems to work best on Jeff."

Scott mixed the album at his Southern California facility, Plyerz Studios, which is centered around his own Neve 8048 console and is filled to the brim with vintage (and modern) outboard gear. Unlike many bands that quickly max out inputs with layer upon layer of tracks, Wilco generally likes to keep things fairly spare. As Scott notes, "I only have 56 inputs and we never got close to that; maybe 40 or so was the most, on 'Deeper Down' or 'Everlasting.'" All the mixes go through Tweedy, of course, and Scott says, "He has great ears. He's very decisive and bold. If something's not quite right, you go give it another shot. He's not one of those, 'Well, let's do a hi-hat up and a bass down, and a guitar on the left louder [mix] kind of guy. It's more like, 'That sounds great; that's done. Thank you.' I love that!"

"I bet there aren't that many alternate mixes of our favorite records—when they were mixed by hand or early computers. When it was done it was *done*. They might have done a *better* mix, but not an insecurity mix. That's the way it is working with Wilco, too." III



PHOTO: MR. BONZA

**Co-producer/engineer/mixer Jim Scott has worked with Wilco for many years.**

produced during the month of sessions.

"Everything was going great, and the Wilco songs we recorded for the project were amazing. In fact, everyone agreed it was *happening*. The studio was great—it has a beautiful old Neve 8048 that came out of The Who's studio and then was at Bearsville [in upstate N.Y.]. It was summertime down there; just a great vibe all around.

"Like I said, the plan was when that working holiday ended, we were going to go to Chicago to make the Wilco record. But then Jeff said, 'Hey, do you want to stay a few extra days and start cutting our tracks down here?' 'Absolutely!' So we did; we stayed an extra week and cut them as a four-piece. We cut all the bed tracks for the songs. The vocals are live—Jeff sings and plays live, and when he's got it, he's *got it*. When he serves up the vocal and the groove, everybody plays great. It's not like, 'Oh, we need a little piece of this vocal and little piece of that vocal, and here's a good chorus and here's a good bridge from that take.' They're *real* musicians and they play well consistently. It's so refreshing and fantastic to be



at Sigma in their SSL room, Studio 5; then we also did a couple of songs at Soundworks, which was under Studio 54—Roger Nichols and Steely Dan had done a lot of their work there; then we went to Right Track and then back to Sigma. After that, they approached me about working on their next record, which was *Little Creatures*.

“At the time,” Thorngren says, “Sigma was their favorite place, so we went into Studio 4 to record *Little Creatures*. Sigma [Sound] Studios 1, 2 and 3 were in Philly, where [founder Joe Tarsia] started before they opened the New York studio [in the late '70s]. The New York studio had two SSL rooms, but Studio 4 had an MCI console, which was fine; I was really familiar with the MCI because we had two of them at Sugar Hill, a 500 and a 600 [Series]. I believe the one at Sigma was a 500, but it had Allison Research automation.”

Thorngren describes Studio 4 as “like a lot of '70s rooms—not totally dead, but dry and with a lot of iso booths because everyone wanted that separation back then.” The recorders were Studer A800 24-tracks. For Talking Heads tracking sessions, where all four musicians would be playing at once, “I’d track with one [Studer],

probably 16 or 18 tracks, and then I’d do a sub-mix of that, maybe down to eight tracks on another machine, and then I’d use that machine for overdubs and put away the [master] drum track.” Though previous tours and albums had featured bigger bands, the *Little Creatures* and *True Stories* sessions, which happened consecutively, marked a return to the four-piece as the dominant sound, and the songs were, by and large, more conventional—if that term can be applied to anything that group did; definitely less groove-oriented.

“It was a real return to Americana after *Remain in Light* and *Speaking in Tongues*,” Harrison says. “I think David came up with this body of work because he was thinking about this movie, *True Stories*, he was about to do. The songs for both albums came out of the same creative cycle, and in a way *Little Creatures* was sort of like the outtakes for David when he was writing the songs for *True Stories*—I think he realized certain ones didn’t make sense within the framework of the movie. Yet I would venture that *Little Creatures* are the better songs.”

Harrison notes that the albums were also a change for the group “because it was us reacting

to a body of work that David had written and we were more in the position of just helping with the arrangements than actually writing the songs as a group, as we had been doing for a while.”

The band would rehearse the songs in Frantz and Weymouth’s Long Island City, N.Y., loft (where the Heads’ *Fear of Music* had been recorded), so when they got to Sigma, they had a good sense of the arrangement they were after. However, there was also considerable experimentation in the studio. “The whole thing with the Talking Heads was about *feeling*,” Thorngren says. “They were always open to changing things, and songs would sometimes morph over time as new ideas would come up. That’s always better than playing ‘demo-itis,’ where you have a demo with a vibe and then you’re trying to capture that exact same vibe later.

“My philosophy was to have everything set up, miked up and ready to go so they could play whatever they wanted on a song. Jerry had a Hammond; I had the Leslie all miked up in a separate place. I’d have his Emulator and DX7 DI’d. It was all set up for whatever they had in mind. I’d usually have Tina’s bass amp miked and have a direct out.

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"Back then, I had [Shure] 57s on every drum and [AKG] 414s on the overheads and a 57 in the bass drum. When I look back on [using a 57 on the kick] today, I think, 'Really?'" he says with a laugh. "A 57 has its own curve, but it has all the frequencies you need, so I would end up doing some serious EQ on the bass drum mic and it would work great."

Thorngren would have Byrne in his own booth, and he would usually play guitar and go for keeper vocals at the same time: "He was such an amazing singer and player, and you'd always end up with a lot of his guitar on the vocal, so whenever we had to punch in a line, he would have to also play guitar because the pick sound of the guitar was on the vocal mic."

This month's "Classic Track," "Road to Nowhere" (which closes *Little Creatures*), is an example of a song that evolved considerably after the band had laid down the basic as a four-piece. Talking Heads' "Brick" box has all their studio albums in both stereo and 5.1, plus videos and bonus tracks including an early version of "Road to Nowhere" that has the song's familiar marching snare cadence and overall structure, but not the soaring, choral a cappella beginning/end, nor the lively accordion that snakes through the tune like a bayou river.

That accordion part was suggested later by Harrison, who laid down a DX7 "accordion" line that was then reproduced (and embellished) by a real accordion player: Louisiana native Jimmy Macdonnell of the Cajun band Loup Garrou. The lush vocal sound at the top and at the end was created by Thorngren by doubling harmonies sung by Frantz, Weymouth and Harrison, augmented with a few New York jingle singers he knew. Lenny Pickett put on subtle sax parts, and occasional Heads percussionist Steve Scales and washboard player Andrew Cader added to the fascinating blend of rhythms and textures. Thorngren liked to use a Neumann U87 through an LA-2A on vocals—"just a little compression and then probably a Lexicon 224 or an EMT 250" for reverb. He says the MCI console's mic pre-amps have been hugely underrated: "Maybe technically the MCI didn't have the specs or something [of Neves or APIs], but I'm telling you, they were powerful and they *slammed*."

Thorngren says that he shifted over to the SSL-equipped Sigma Studio 5 to mix the album, but meanwhile, "the band would set up again in Studio 4 for tracking, they would learn a song or two, I'd get a mix a couple of songs, and then I'd flip the board over and record the tracks for *True Stories*."

The success of the *Stop Making Sense* film

(released in the fall of 1984) added tremendously to the Talking Heads' popularity, so when the melodic and hook-filled *Little Creatures* came out the following June, the record-buying public was primed. It quickly became the best-selling album of the Heads' career (reaching Number 20), and it spawned several radio and club smashes, including "Road to Nowhere." (The song hit the Top 10 in Britain.) It helped, too, that there were several strange, funny and highly creative videos made for different songs—the trippy, Dadaistic "Road to Nowhere" video was directed by Byrne and Stephen Johnson.

"I thought *Little Creatures* was so accessible it should have been Talking Heads' *Rumours*," Thorngren says today, referring to the mega-selling Fleetwood Mac album. "I really blame the record company for not being able to make it into a bigger hit."

More damaging, perhaps, was the fact that the band never toured to support it; indeed, they never toured as a group again. "It's too bad," Harrison says. "We talked about doing some shows, and they *almost* happened," but instead Byrne became consumed with making the *True Stories* movie and a tour just never materialized. III

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# Live

PHOTOS BY STEVE JENNINGS

Steve Winwood (left) and Eric Clapton (center) perform alongside a stellar band, including drummer Abe Laboriel Jr. (right).



By David John Farinella

## Eric Clapton and Steve Winwood

BLENDING THE SOUNDS OF TWO MUSICAL HEAVYWEIGHTS

At first glance, it appears as if Robert Collins is sitting down on the job. After all, he's been on the road with Eric Clapton for the past couple of decades and, well, the odds are that he's heard it all by now. Yet the figure tucked into the leather office chair behind the DiGiCo D5 front-of-

house board during this stop at Oracle Arena in Oakland, Calif., is doing just about everything but relaxing. His fingers are flying around the D5 adjusting levels, his toes are tapping and head bobbing, and, if you catch him at the right moment, he's swearing at an EQ while trying to find a

troublesome frequency.

The truth of the matter is that this tour is decidedly different for Collins, monitor mixer Kerry Lewis and the rest of the crew for a handful of reasons. The addition of Steve Winwood to this run of shows, as well as the inclusion of songs from





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Perhaps the biggest difference, Collins is quick to say, is that this "tour" is only 14 shows in arenas across the States. That tends to quicken the pulse a bit. "A lot of big tours take a few shows to settle down, band included," he says. "We haven't got that many, so we've got to hit it off the bat."

It's not as if Collins and the crew had much time to worry about this tour; they were coming off 12 shows at the Royal Albert Hall in London with essentially a different band: drummer Abe Laboriel Jr., bassist Willie Weeks, Chris Stainton on keyboards, and background vocalists Michelle John and Sharon White. Laboriel Jr. has replaced drummer Steve Gadd; and Winwood, who played piano, organ and guitar, took over for guitarist Andy Fairweather Low and keyboardist Tim Carmon.

"We finished our last night in the Albert Hall, and the next morning we were straight on a plane to come to New York to set up for this band and do a week's [worth of] rehearsing," Collins says. "But there's no more pressure than normal."

Collins and Lewis are carrying their own consoles and are renting racks and stacks from Sound Image (Escondido, Calif.). The rig for all 14 shows is a JBL VerTec line array with 68 pieces of 4889 (14 in the main, 12 on the sides and eight for the back) and 16 4880 subs. An additional 10 QSC WideLine speakers were brought in. Crown I-T8000s power the boxes, and a HiQ System controls the amps. Collins relies on a simple set of outboard gear, including six Dolby Lake Contours, three dbx 162SLs for Clapton and Winwood's vocals and a TC Electronic 6000 for reverb. A Midas XL88 and XL42 are used to get signal to the Smaart analyzers. Each show is archived through Steinberg Nuendo onto an AMD 96-track recording

hard drive.

Tucked into stage-right behind Winwood's organ, Lewis is busy managing the set of Clair 12AM wedges the band uses to monitor its sound, and the one personal monitor that Winwood uses to hear his vocals. "It's not loud onstage," he insists. "It's a little more difficult because Steve has two Leslies onstage and I've got to compensate for those. If I put them at normal volume, it's very loud and Eric can hear them. But I just stand in the middle of the stage when we check things in the afternoon and get a level."

As far as the mixes that each bandmember calls for, Lewis points out those are straight-ahead. Clapton listens to most everything from other members' amps—except the keyboardist and his acoustic guitar—and the drums. Winwood listens to vocals in one ear and gets a band mix in his wedges. Stainton gets a full band mix, while Laboriel likes to hear guitars, vocals and keyboards with no drums in his wedges. Weeks generally stands close to the drum kit to hear that naturally and gets a bit of bass drum for weight, as well as keyboards. Finally, the background singers hear keyboards, vocals and Clapton's guitar.

### Jumping to Digital

Lewis says that using the D5 was a bit of an adjustment for him, considering he was a Midas XL4 man for many years. "It took them a long time to get me to go digital," he says with a laugh. "I was dragged kicking and screaming. I just loved my XL4, but since I've been on digital it takes up a much smaller footprint and everything is built in."

Collins, who also jumped into the digital domain reluctantly, laughs when he explains how he uses the D5. "I use a digital desk just like an analog desk—no cues, nothing. If it doesn't come on, it's because I haven't switched it on."

In fact, Collins says that he picked the D5 because of its similarities to an analog board. "I can control more things at once. On a D5, I can [put four people up] and they won't get in each other's way, where on nearly every other digital desk, if you press one button, you're in that page and that's it. I'm not into the store, overstore, keep. I have no snapshots; I have never used a snapshot."



Front-of-house engineer Robert Collins at the DiGiCo D5

Because of the spill that's caught from mic to mic, Collins needs to put up four musicians on the board at the same time. The engineer is using Audio-Technica 4055s on both Clapton and Winwood's vocals for the spill factor and because the two sing off the mic quite a bit. "Eric is really into playing guitar, especially on blues songs," Collins says. "He's a great singer, but sometimes he's maybe two feet from the mic. He likes that; it's art to him. Eric's vocal mic is in my overheads, as well."

Contributing to Collins' mixing blend is the amount of gear onstage, including Winwood's two Leslie cabinets (there's one off-stage that's miked with a PZM on the bottom of the cabinet and two 4050s in the top), a Leslie for Clapton and another for Stainton. In between his two Leslie cabinets, Winwood calls for a bass cabinet and his piano is miked. "So you can imagine," he says with a smile, "the spill in the piano is fantastic. It's not as cut-and-dry as, say, 'Okay, there's the vocal mic. There's the overheads. There's the case of getting the blends all together—hence the reverbs are not really needed.'"

As far as Winwood and Clapton's guitars, Collins continues to use an Audix I5 on one cabinet and an Audio-Technica 4047 on another. "I will use one mic for one song maybe and another mic for another, but you wouldn't really be able to tell the difference," he explains. "One has a little bit of bite on it. But I don't really like EQ'ing guitars and things because it's their sound. [The audience] is not coming to hear me—they only know I'm here if they can't hear him." III

David John Farinella is a San Francisco-based writer.



Monitor engineer Kerry Lewis also made the jump to digital boards and is mixing on a DiGiCo D5.



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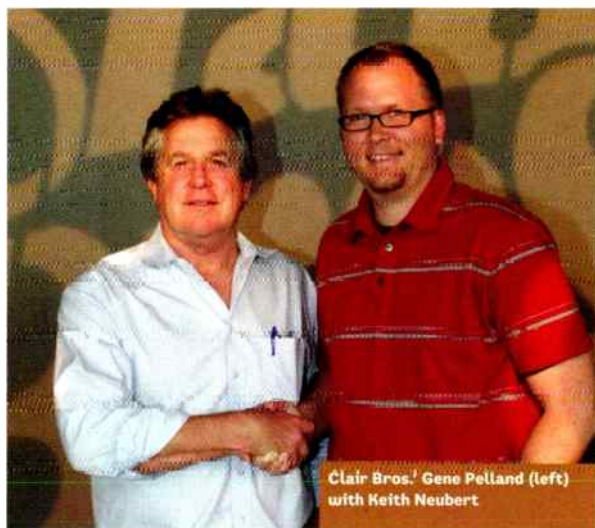
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# SOUNDCHECK

## Clair Opens New Branch



Clair Bros.' Gene Pelland (left) with Keith Neubert

Clair Bros.' new Chicago location sees Keith Neubert heading up sales and management in the territory and Jim Johnson handling systems design and project management.

"The venture began with a need for a more technical staff in the Chicago area to better service existing installations," says the company's Larry Howard. "One of the installations that required quicker service was the Harvest Bible Chapel. Our introduction to Keith Neubert was made

through Harvest Church where he held the position of director of production. We very much appreciated Keith's style of fair and honest business practices, so it seemed to be a perfect match to explore a new venture. Since Keith was not interested in relocating, we decided to open a branch office and go after more work in his area.

"The sky is the limit for this location, as with all Clair employees in all our locations, so we are open to do as much as pos-

sible in the AVI world," Howard continues. "In order to maintain a low overhead, which the economy demands, the Chicago office functions mainly as a communication base. Clair Brothers will continue to purchase and assemble all equipment in the Manheim, Pennsylvania, office and the Chicago office will be in charge of everything thereafter."

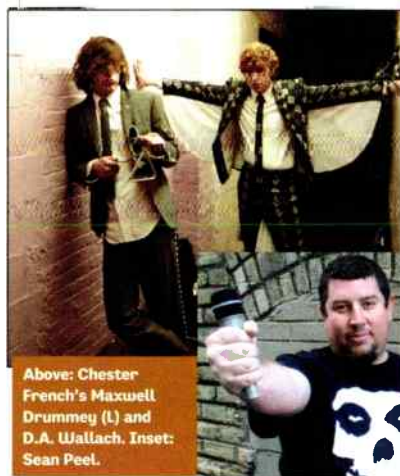
"As business builds for Clair Brothers, opening branch offices allows us to support different key areas with specialized sales engineers," adds executive VP of sales Gene Pelland. "With the addition of designers and project managers to that mix, we are able to design, install and support new projects, as well as existing installations."

Neubert says of his new position, "I am very excited to join the Clair Brothers team and expand the business in the Midwestern region. I have been an admirer of Clair Brothers' approach to business for many years, and look forward to building upon their success locally through integration projects in the house of worship, performing arts center, stadium, arena and corporate conference facility markets."

## tour log

### Chester French

Indie rock/hip-hop duo Chester French (Maxwell Drummey and D.A. Wallach) recently embarked on a European tour before heading back to the States as opener for Blink-182's summer tour. *Mix* caught up with tour manager/front of house engineer Sean Peel.



Above: Chester French's Maxwell Drummey (L) and D.A. Wallach. Inset: Sean Peel.

#### How did you get involved with this tour?

I was contacted by the band's management and was asked to be the tour manager and front-of-house engineer.

#### How much gear are you carrying?

I was just carrying Electro-Voice mics and using what was provided at the venue or whatever the [headliner's] tour we were on.

#### What is your go-to piece of gear for this act?

My Electro-Voice mics: the PL80 vocal mic, the 468 drum mic, RE200 on cymbals, ND478 on keys/bass/guitar amps, 868 on kick drum, and DI 100 on keys and drum pad.

#### What is your mixing style for this act?

The style you mix always depends on the band. I hate when sound guys mix the same way with every band. I feel like I needed to do a prog-rock feel, but kind of had to add a hip-hop flare on the bottom end. It was like mixing funk style for Tom Waits!

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

I live in Houston, and work at the House of Blues there and for some of the local sound companies.

## fix it

### Billy Elliot sound designer Paul Arditti

Paul Arditti, who received the 2009 Tony Award for Best Sound Design for this show, designed a "Tap Floor" that comprises 96 piezo-electric pickups distributed across the majority of the stage area, which are set into the subfloor under the parquet.



The intention is to pick up and amplify tap dancing from anywhere on the stage, without risk of feedback or interaction with other live sources. The usual solution to this problem is to run wireless mics down the legs of each actor to the dancing feet. Unfortunately, because of the nature of the costumes, this is mostly not an option. The "Tap Floor" allows the choreography to take the actors anywhere around the stage and still be effectively

miked. With some experimentation, we discovered what spacing of the pickups worked best and how to mount them in the floor most effectively. The audio from the pickups goes individually into a 96-channel console. The mixer then splits the floor into zones, and applies compression and gating. The stereo output of this mixer feeds a stereo analog input on the D5T, where the audio is finally EQ'd and routed to the sound system.



# Martin Audio Spec'd for Chicago-Area Club

The new 20,000-square-foot, two-story John Barleycorn club in Schaumburg, Ill. (a suburb of Chicago), features high-end audio, video, stage and club lighting systems thanks to the work of

the sound system just blew everybody away. Once the owners heard the speakers, they told me, "This is what we want. Buy it."

The upstairs 25x12-foot stage is used for live performances by national and local bands, and DJs. Also on the second level are three main bars with seating and booths surrounding the stage with facilities to host up to 1,000 people. "We have three Martin Audio W8LM arrays, four each left and right, and three center above the stage, with the right and left stacks tilted out at 30-degree angles and the center array straight at the crowd," Pickett says. "We chose W8LMs because they have such a wide horizontal throw and the room is a rectangle with the stage at the short end, so we needed something with real wide coverage. There are six WLX subs under the stage, side-by-side coupled together, so there's a stack for every array."

The rest of the system comprises Crown amplification; an Allen & Heath GL2800 mixer; Klark Teknik, dbx and BSS processing; DWR-21 and ER-35 racks from Middle Atlantic Products; and Shure and Sennheiser mics.

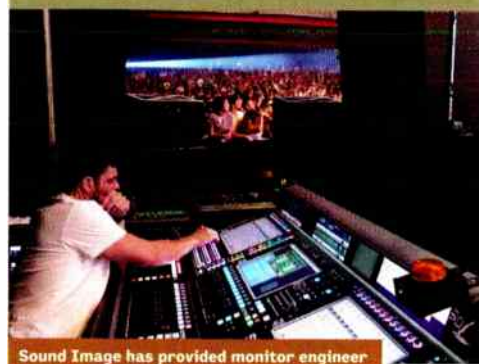


The Barleycorn upstairs space features Martin Audio arrays, Crown amps, Allen & Heath GL2800 mixer and select pieces of outboard.

local installer Sound & Lighting Designs. The venue combines a restaurant space and satellite bars on the first floor, while the second floor includes a club and live sound venue.

When it came to choosing the system, owners Sam Sanchez and Michael Gonzalez were heavily involved. As install company owner Timothy Pickett recalls, "We shopped several brands and went to a Martin Audio demo, and

## load in



Sound Image has provided monitor engineer Kevin Glendinning a DiGiCo SD7 for Lenny Kravitz's European tour; another SD7 is at FOH with Laurie Quigley.

Dean Mitchell, guitar tech for Buckcherry's Stevie D. spec'd Lectrosonics IS400 receivers mounted into a single 19-inch rackspace, two LMA beltpack transmitters and several M139ARA cables equipped with Neutrik right-angle NP2RX-AU-Silent plugs...A dual Midas PRO6 system provided by Britannia Row has been used for Paolo Nutini's two-week UK tour. The PRO6s were used by FOH engineer Graham "Hutch" Hutchinson and monitor engineer Tom Howat, who was also mixing support band The Panics, plus additional supports appearing on the tour...Riders on the Storm musical (Jezdziec Burzy) venue Rampa Theatre (Warsaw) recently installed a Meyer Sound M'elodie courtesy of Lomianki-based Polsound... The John Cooper School (The Woodlands, Texas) upgraded its 515-seat performing arts center with a Soundcraft Vi6 digital mixing console.

## road-worthy gear

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The CBT Series passive line array columns feature Constant Beamwidth Technology™ circuitry, with switchable Broad/Narrow mode for mid/long-throw coverage. The 20-inch CBT 50LA uses a straight line of eight 2-inch drivers; the 40-inch CBT 100 LA has 16 2-inch drivers and handles 325-watt continuous. Both accept 70/100-volt or lo-Z inputs. The J-shaped CBT 70J is a 28-inch, two-way coaxial line array with 16 soft-dome tweeters and four high-power 5-inch woofers. A CBT 70JE extension cab doubles its height, adds low-frequency response and extends power handling to 1,000 watts. [www.jblpro.com](http://www.jblpro.com)



### K-Array

Components in the K-Array range from a half-inch to 4 inches deep; models include the Vyper 3-D line arrays, Tornado point-source speakers and the Kobra ultra-slim 3-D line arrays. The KR two-way speakers measure a few inches across, and the KL subs weigh less than 25 pounds. The long-throw KH4 two-way flat-panel line array and medium-throw KH15 two-way ultra-compact line array are self-powered, yet only 6 inches deep. The flyable/stackable KS Series and 85-pound KS4 sub can create a top-quality touring P.A. Class-D amps with onboard DSP, Overbass powered subs and the KM8 stage monitor complete the line. Dist. by [www.sennheiserusa.com](http://www.sennheiserusa.com)



### Outline Mantas

The Mantas vertical line array from Outline shares the same basic components and characteristics of the company's Butterfly, but in a compact cabinet capable of 137 dB (or 147 dB from four modules). Mantas features a DPRWG (Double Parabolic Reflective Waveguide) with two 8-inch neodymium mid/woofers and a 3-inch compression driver. The 53-pound enclosure measures just 9.4x30.5x20.5 inches (HxWxD). Mantas was designed as an individual vertical line array, but as it has the same flying points it can also be used along with the Butterfly system to provide wider horizontal coverage (120 degrees) for front-fill and down-fill applications. [www.outlinearray.com](http://www.outlinearray.com)

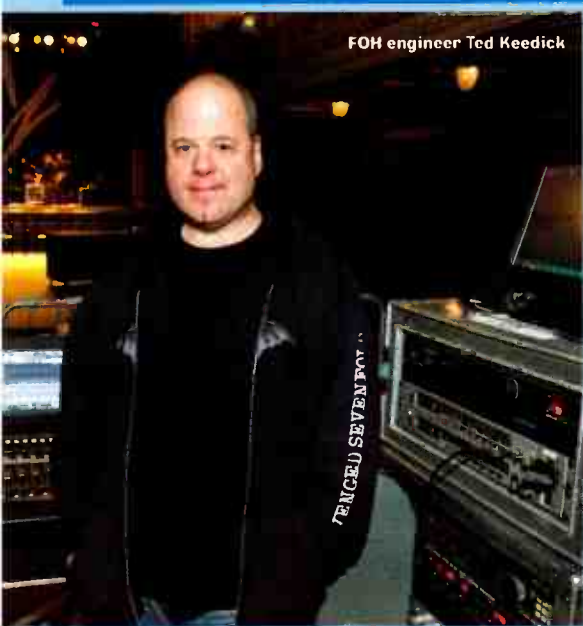


# ALL ACCESS

Photos & Text by Steve Jennings



Former Soundgarden frontman Chris Cornell is taking his solo gig on the road, backed by an A-list band comprising drummer Jason Sutter, bassist Corey McCormick, and guitarists Yogi Lonich and Peter Thorn—all of whom create a massive wall of sound. Touring in support of his latest, *Scream*—the cover of which shows Cornell about to smash his six-string guitar, an interesting message considering that the album's executive producer is hip-hop heavyweight Timbaland—Cornell and crew gave a stellar rock 'n' roll performance, with just a subtle rock-dance undertone. *Mix* caught up with the act at San Francisco's Grand Ballroom at Regency Center.



FOH engineer Ted Keedick

For the past five years, front-of-house engineer/tour manager Ted Keedick has relied on a Yamaha PM5D. He says the PM5D has "just enough analog character with the benefits of the digital world to suit my needs. For all but three of my 37 inputs, I am using the on-board gates, comps and effects engines."

Keedick runs Chris Cornell's vocals first through an Avalon 737 and then adds an Empirical Labs EL8 Distressor as an insert, giving him two stages of compression. He also uses a Summit Audio DCL-200 on Jason Sutter's cymbal mics.

"We were using the house P.A.—a JBL system that responded pretty well in a not so-forgiving room," Keedick says. He uses a Clair IO for system tuning. "I actually was using only one channel as an EQ for my main vocal. Chris plays for a long time each night, but I rarely tire of the set. The guy switches up night after night, choosing from a vast selection of his works from previous bands, solo work and a few very well-done covers. The band delivers consistently, and my crew rocks!"



Cornell and band were heard through the venue's JBL P.A.





Guitarist Vogli Lonich



Guitar tech Bodie



Chris Cornell



Peter Thorn



Vogli Lonich uses Divided By 13 LDW 17/33 head and Divided By 13 cab for his main guitar sound; Fender Tone Master and Blonde Fender cab for lead; and Vox AC30 for clean. Both the AC30 and Divided By 13 cab are miked with Shure KSM 32s; the Fender gets an SM57. "The two Standard [guitars] have single-coil pickups wired in the neck position; one has a piezo pickup for acoustic sounds," says guitar tech Bodie. "He also has a white Gene Baker B3 Tele for twangy sounds, tobacco-burst Duesenberg Starplayer TV for hollow sounds, a Jerry Jones [Guitars] Sitar and a Gibson J-200 acoustic."



Chris Cornell is using a Washburn D78SW with an L.R. Baggs Duet 11 stereo mixing system installed. According to Bodie (guitar tech for Cornell and Vogli Lonich), the Duet uses both a mic and a bridge pickup for a more ambient guitar tone. "We use a Shure UR4D wireless into the P.A.," he says. "Chris will use a Gibson Hummingbird acoustic for the solo portion of his show. He'll also use a Gibson Classic into a Vox AC30 when he chooses to play electric."



Guitar/bass tech Stephen Ferrera-Grand

Peter Thorn uses Suhr and Gibson guitars, and a Suhr-built Custom Audio Amplifiers PT100 amp (the Peter Thorn model). The amp is a 100-watt head with a Fender-style clean channel and a Marshall-style overdrive channel. "We also use an Egnater Magnatone 4-channel preamp that runs into the power section of the PT100 head [via an RJM switcher] for alternate sounds," says guitar and bass tech Stephen Ferrera-Grand. "The output of the head runs into a Faustine Phantom attenuator to control stage volume and then feeds a Port City 4x12-inch cabinet with Scumback M75 speakers."

"A tap is taken off the output of the PT100 amp to run to a Fractal Audio Axe-FX unit for some post-amp effects: delays, rotary speaker sounds, reverbs, et cetera," Ferrera-Grand continues. "The output of the Axe-FX feeds a Mesa 2:90 power amp and two Port City 1x12-inch cabinets with Scumback M75 speakers. These get hard-panned in the house, and the 4x12-inch dry cab is panned center."

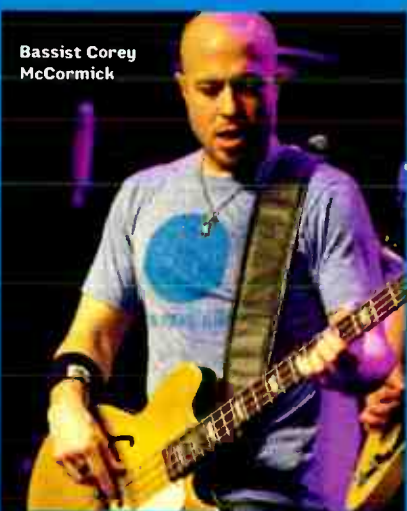
Dave Friedman of Rack Systems designed and built Thorn's rack, which houses the RJM switcher, Axe-FX and Mesa power amp, and a full stock of pedals that Thorn switches using the RJM, a Line 6 X2 XDS-Plus wireless receiver and a Rocktron Power Station.

"We've been using the Heil PR 30 [dynamic mic] on the center drum cab and two Shure KSM 32s on the 1x12-inches, but we are talking about switching to 57s on it to cut down on bleed from the bass rig and drums," says Ferrera-Grand.



Drummer Jason Sutter

According to drum tech Kevin Chatham (right), all mics on Jason Sutter's Ludwig drum kit with Paiste cymbals are Shure models; SM52 and Beta 91 (kick drum), SM57s (snare top and bottom, and side snare), SM98s (toms), KSM 32s (hi-hat, overheads) and SM81s (ride cymbal).



Bassist Corey McCormick

Bassist Corey McCormick plays "a Music Man StingRay 5, a Gibson Les Paul Money Bass 4, a Gibson SG 4 and an Epiphone Jack Casady 4. Amps include two Ampeg SVT-VR Classic heads through two Ampeg SVI-610HLI cabs. Effects include a Dunlop [Cry Baby] Bass wah pedal, a MXR M100 Amp, an Electro-Harmonix Big Muff, a Boss Bass OverDrive [ODB-3] and an MXR Blow Torch," lists bass tech Stephen Ferrera-Grand. "There are no microphones in use on the rig. There is a SansAmp Bass Driver DI and we use either the 111 Air of the Ampeg SVT-VR or a Radial ProD2 passive DI."



Monitor engineer James Bump

Monitor engineer James Bump mixes on a Digidesign Profile, using very few onboard plug-ins including Smack!, Echo Farm and ReVibe. "The band is on in-ears—Ultimate Ears model UE7; no wedges. We are using a Shure UR4D wireless with a Shure SM58 capsule for Chris' vocal mic."



SOUND FOR PICTURE



Mark Johnson listens to a recording for the Playing for Change project.



Grandpa Elliott of New Orleans, La., seated, and Clarence Bekker of The Netherlands

By Matt Gallagher

# Playing for Change

## LOCATION RECORDINGS UNITE PEOPLE AROUND THE WORLD

Playing for Change is the name of an ongoing multimedia movement designed to unite people through music. You may have encountered it online in the video "Stand By Me," which, as of this writing, has been viewed on YouTube more than 12 million times. It begins with street musician Roger Ridley performing the 1961 Ben E. King classic on guitar and vocals outdoors at the Third Street Promenade in Santa Monica, Calif. Ridley is subsequently "joined" by 37 other musicians singing and playing along with him in New Orleans, The Netherlands, New Mexico, France, Brazil, Russia, Venezuela, The Congo, South Africa, Spain and Italy.

The man wearing headphones and documenting all of those performances in the video is Grammy Award-winning producer/engineer/director Mark Johnson, who envisioned, created and cultivated Playing for Change during a period of 10 years. For Johnson, the collaboration, extensive travel and effort behind "Stand By Me" established the template for Playing for Change ([playingforchange.com](http://playingforchange.com)), which now encompasses the 2009 CD and DVD release

*Playing for Change: Songs Around the World*, featuring 10 songs and seven videos from the Hear Music label; the nonprofit Playing for Change Foundation, which offers facilities, technology, musical instruments and education to communities worldwide; and the feature-length documentary *Playing for Change: Peace Through Music*, which is slated to debut this month on PBS.

In the documentary, musicians offer heartfelt performances in the moment from the streets of their hometowns. Johnson shared the ways in which he and his fellow engineers captured and mixed these passionate, once-in-a-lifetime performances.

**How did you know where to go and which musicians to record?**

When you're making a documentary, you basically raise enough money for airline tickets and go. So a lot of it was just showing up; a lot of it was also researching different parts of the world and what kind of music they have. I knew I wanted to add choral music from South Africa and sitars from Asia. So I would start off with a road

map and show up in countries with a guide I would find in that area.

The whole idea of the project was to get back to the roots of the music, and to do that I felt like we had to go to the streets. It definitely was not [just] a project about street musicians; it's about *all* musicians. Street musicians alter people's opinions of success because they don't change their art: they go out and play every day, and somebody can walk by and have a life-changing experience. *It reminds me of friends' stories about visiting Cuba and Brazil and hearing the incredible music on the streets.*

Exactly. When you go to the people, you'll always find the most amazing music because it all comes from the soul. Music is one heart to another without any filter, and that's what we were trying to explore. So we wanted to go back to the roots of it all and start with *that*, so no matter what we had, at least it was pure and it was real. Musicians would tell other musicians, and that word of mouth helped us.

We recorded people in Native American reservations and subways and street corners and the Himalayan



Mountains. We went all over the Middle East. Ninety-five percent of the music was recorded live outside. Musicians would hear whoever had played before them, and I would use an iPod video to show where [the performance] was at, at that time, so they could get a feel for it.

**What inspired you to pursue this project for all these years?**

I was a recording engineer at the Hit Factory in New York City in 1998. I was on my way to the studio one day, and there were two monks in the subway station; they were painted all in white from head to toe and they were playing music—one guy was playing a nylon guitar and the other was singing. I looked around and I saw all these groups of people come together through the music. Then I watched this performance, and some people were crying and dropping their jaws, and [I saw] a lot of smiling. I got on the train and it occurred to me that some of the best music I ever heard in my life was on the way to the studio.

**How did you choose your recording equipment for this project?**

[In the field,] I wanted to use the exact same equipment that I was using at the Hit Factory. So the idea was to bring that kind of equipment to the streets so that people have an opportunity to be heard in a much better context than microphones [mounted] on cameras, which was the most common way of documenting people outside.

**Can you talk about how your field equipment has evolved during the course of this project?**

When I started out, I would bring a lot of equipment. Most of the ideas for how to record outside came from a guy named Mickey Houlihan. He has a company called Wind Over the Earth ([www.windovertheearth.com](http://www.windovertheearth.com)) in Boulder, Colo. He was my consultant for the whole project, and we started out working with golf cart batteries, the Exceltech [AC power inverter], Grace 801 [mic pre's] and a [Tascam] DA-78. It was very heavy and costly to ship, but it did work.

So I could record musicians outside, it would sound really good and I could overdub other musicians to the tracks. Then we switched to car batteries and a smaller Exceltech XP125. I then switched to a Digi 002 [interface] with the smaller battery-powered Grace Lunatec V3 [mic pre], and those are powered by Power Runner Model 2 battery packs. Then I was much more mobile and that's how I did a bunch of recording. As a backup, I would use a Metric Halo Mobile I/O 2882. But the problem is when you go to foreign countries where you can't fly with car batteries. For example, in the Himalayan Mountains, I would buy a car battery and then take it up to

the mountains and find out it wasn't charged. That left me wanting to be completely in control of my own power, so that's when I went to using an MBox 2 Pro with the Grace mic pre's, which would get me six tracks. If I needed more than eight tracks, I would use the Metric Halo Mobile I/O. A lot of the stuff that I was doing was multitracking on top of other tracks, such as [with] "Stand By Me." So six tracks was plenty.

The majority of the recording came down to using a lot of hypercardioid mics and dynamic mics, and then more recently back to the Neumann KMS 105, which is a really great hypercardioid mic. I would usually [use] windscreens on

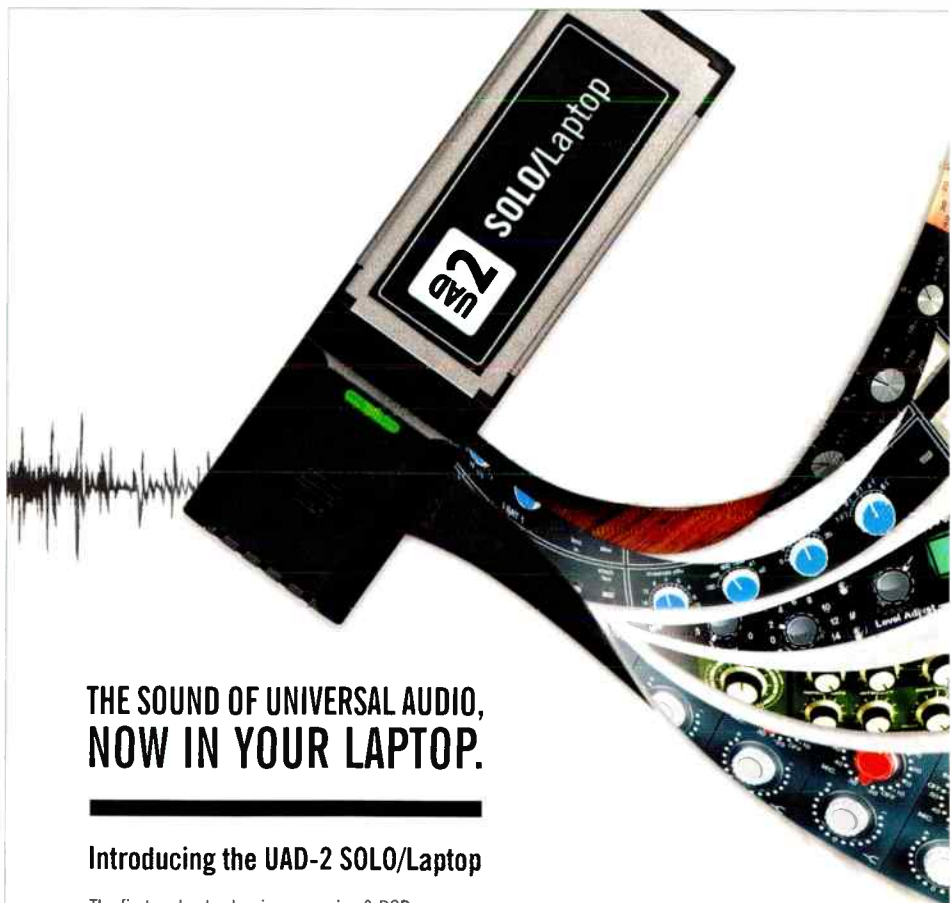
the mics. So now I could go anywhere, anytime, power myself and record up to six tracks.

**What recording device and software did you use?**

I recorded everything with a Mac laptop to Pro Tools LE, except when I used the Mobile I/O; then, I used the Metric Halo software. I mixed it on an HD system.

**Did you figure out mic setups on the go?**

[Laughs] It was definitely challenging. A lot of times it was just pick the right mics and turn them against the wind and hit Record. Half the time we would record these musicians, they would already be performing when we'd show up, so we had to adjust to what they were doing. Some-



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times I would ask them to move or turn around because of the wind. But for the most part, it was really spontaneous. I got good [at] knowing when to use which kinds of mics. I would have 57s, a Beta 58, a Schoeps [CMC 6], the B&K [4011], the Neumann 105s and the Shure Beta 52 for bass or low-end instruments. I had passive DIs, and then [would] try to figure out which mic pre's to use. Over time, the combinations got better.

The challenges were constant—battery life, wind, rain, too much sun, and also the car horns and extraneous sounds around you. Obviously, you're going to have some of that. But

when you put together 40 tracks around the world, you don't want to have too much extra noise in each of them where it gets overwhelming. The other important thing was a tuner. I had feared that problem because you're outside, and tuning shifts so much due to temperature.

**And you had to set up cameras at the same time.**

Yeah. We shot on HD, Mini-DV and 16mm film. But the whole thing was very basic: start off with a good track, inspire the people and then point and shoot.

**It's interesting that the overdubs worked out so well: You played mixes live and people played**



Recording in Kathmandu, Nepal, L-R: Kevin Krupitzer, Jeremy Goulder, Mark Johnson, William Aura, Enzo Buono and Jon Walls

**along to it.**

Yeah! For the most part, it was one take, very little editing—just people finding the place where they could fit in and play in that spot.

**So you mixed as you went along.**

Right. "Stand By Me" starts with [street musician] Roger Ridley on guitar and vocals, and then we add musicians. But with "War/No More Trouble," we wanted to challenge ourselves a bit more. We did that in the same key and tempo of *Bob Marley and the Wailers Live at The Rainbow*, a [1977] concert of his in England. So I tapped the tempo of the "No More Trouble" part of the song because there's a drift in tempo from "War" to "No More Trouble." So I had the musicians play "War/No More Trouble" to that click, and then got permission from the Marley family to use Bob's vocal and video. So Bob Marley is singing with Bono, Israelis, Palestinians, Catholic-Protestant kids, and musicians from Congo and Zimbabwe. It's the most amazing feeling because his whole spirit and energy are actually in the track, and that was one way to take it one step further from what we had done in the past.

**How did you mix the final tracks?**

Most of it I just mixed in the box in my apartment. For some of them, I went to Chalice Studios in Los Angeles.

**What is the monitoring setup in your home?**

I use Genelec 1030s. I'm in love with them. Paul Simon, Jackson Browne and Keb' Mo' used them, so my ears were accustomed to them for many years. Everything I used was real simple—no compression on anything. When I mixed, I [used compression], but when I was recording everything was just clean.

**This is a remarkable undertaking.**

The power of music—when it is being used in the right way—enabled us to go into places we otherwise would have never been able to survive. And we tried to show all the different ways with which people use music to persevere through struggles; then people start to realize that we're all the same. III

*Matt Gallagher is Mix's assistant editor.*

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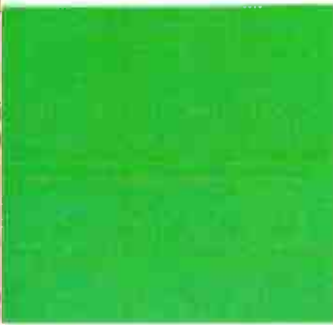
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# Tech

## NEW PRODUCTS

### High-End Gain Control

#### **Airfield Audio** Compressor

The new Liminator from Airfield Audio ([www.airfieldaudio.com](http://www.airfieldaudio.com)) is a vintage-style analog audio compressor available in mono (\$1,995), stereo (\$3,495) or mastering editions. The hand-assembled unit features switchable transformers (Jensen/Sowter); five-position step rotary switches for attack, release and ratio; a switchable VU meter; and continuously variable adjustment on threshold and output gain. The no-compromise unit also offers silver solder on all connections, a relay bypass, a link switch and a circuit board made with 3-ounce copper.



### Sonic Boom!

#### **Brainworx** bx\_dynEQ

This unit bundle of plug-ins (VST, RTAS, Audio Units) from Brainworx ([www.brainworx-music.de](http://www.brainworx-music.de)) comprises bx\_dynEQ mono, bx\_dynEQ stereo, bx\_dynEQ M/S and bx\_boom! Promising a new and unique ap-

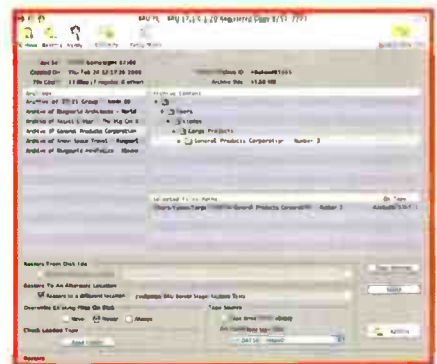


proach to dynamic EQ, bx\_dynEQ includes a "cross-feed" M/S feature, allowing M and S signals to trigger each other, and an array of filter types (including a new bandpass) and Brainworx's Bass-Shift and Presence Shift filters. bx\_boom! is a preset stripped down to only two parameters and an intuitive graphic design tool, enabling the user to attenuate or boost the impact of the bass drum sound in the final mix or in a stereo drum loop. Purchase (349 Euros) is Web-only from Brainworx's Website.

### Watching Your Back(ups)

#### **Tolis Group** BRU PE Archiving Solution

Designed with input from the AFS P&E Wing and NARAS members, BRU PE (\$499) from the Tolis Group ([www.tolisgroup.com](http://www.tolisgroup.com)) is a multiprocessor and multicore-aware backup solution specifically designed to create session archives. Features allow drag-and-drop of volumes, folders or session files; creation of two tape copies of the same data simultaneously; and tape library support (up to two drives and 24 slots). BRU PE supports all tape technology with no special drivers required. It allows creation of a single archive element containing all assigned components on one set of backup tapes, multiple archives containing one or multiple components on a single set of backup tapes, or multiple tapes with one or multiple components per tape.



### You've Been Digitized

#### **Sennheiser** MZD 8000 Digital Module

The slick, new MZD 8000 (\$999) module for Sennheiser's ([www.sennheiserusa.com](http://www.sennheiserusa.com)) 8000 Series microphones allows users to digitize their signals directly after the capsules of their MKH 8020 (omni-directional), MKH 8040 (cardioid) and MKH 8050 (supercardioid) microphones. The screw-on unit replaces the current XLR module, and outputs AES-42-standard signal up to 24 bit/192kHz. In addition, the module contains a DSP unit allowing remote control of a low-cut filter, attenuation and limiter via PC control software and Neumann's DMI interface (not included). The DMI provides phantom power and word clock to sync the microphone, or they may be synced using an external word clock.

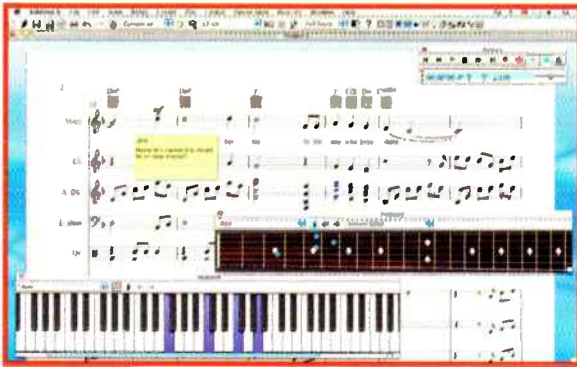




## Knowing the Score

### Sibelius 6 Pro

Pro studios, composers, musicians and engineers understand the importance of being able to work with written music. Sibelius 6 Pro (\$599) from Sibelius ([www.sibelius.com](http://www.sibelius.com)) has made it easier than ever by taking automated scoring up a notch. Sibelius 6 can now interface with most DAWs and sequencers via ReWire support, allowing the

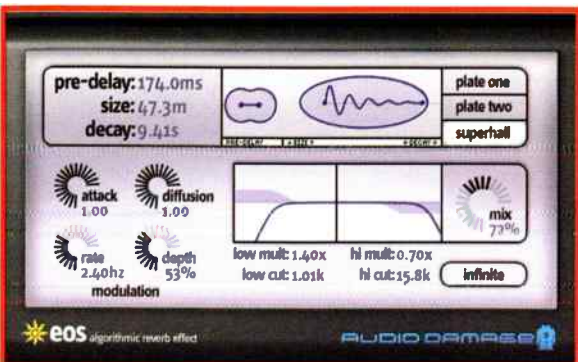


user to add a live performance to an audio recording or sync a recording with a score's playback. Other features include version tracking, synchronization with video and film, and Magnetic Layout, which gives everything just the right amount of space and avoids collisions to produce beautiful and printable results.

## Ambience on a Budget

### Audio Damage Eos Reverb

This simple and affordable plug-in from Audio Damage ([www.audiodamage.com](http://www.audiodamage.com)) features three custom-designed reverb algorithms powered from a simple GUI (VST/Audio Units; Mac/PC). Eos Reverb's (\$49) effects include a mono-in/stereo out plate, true stereo plate and a stereo Superhall. Controls include modulation rate and depth, attack, diffusion and full control over the EQ and multipliers of the reverb tail. Low CPU usage is promised, as compared to other plug-ins, including far-lower CPU use than the average convolution reverb.



## Marvelously Mobile MIDI

### Automap 3 for iPhone, iPod touch

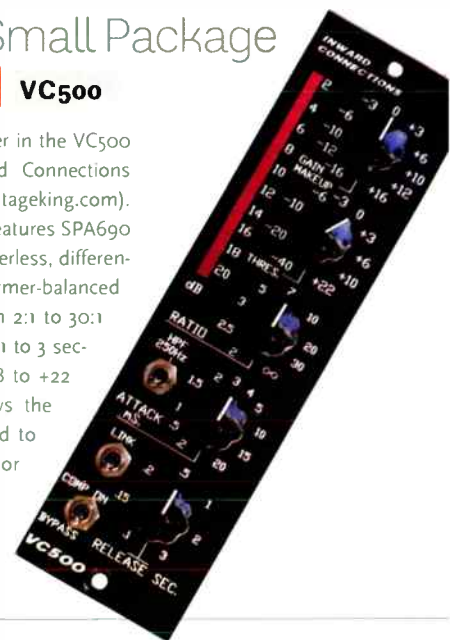
The news from Apple's WWDC brought some exciting options for audio pros who own Apple ([www.apple.com](http://www.apple.com)) mobile devices and Novation ([www.novationmusic.com](http://www.novationmusic.com)) products. Automap for iPhone and iPod touch (available from Apple's App Store), combined with Novation's free Automap 3 Standard software or Automap 3 PRO (\$29.99), provides two horizontal faders and eight buttons per page (pages unlimited) displayed on a single iPhone/iPod touch screen. Automap lets you see, at a glance, how every control on your iPhone/iPod touch is assigned, both on the iPhone and iPod touch itself, and across your computer screen. Control maps are automatically placed into categories depending on type, and controls can be re-assigned via the Learn mode.



## Big Features, Small Package

### Inward Connections VC500

The 500 Series has a new member in the VC500 (\$925) compressor from Inward Connections (dist. by Vintage King, [www.vintageking.com](http://www.vintageking.com)). The Steve Firlotte-designed unit features SPA690 all-discrete amp blocks; transformerless, differentially balanced input; and transformer-balanced output. Ratio control ranges from 2:1 to 30:1 to infinity, release control from 0.1 to 3 seconds, and threshold from -40 dB to +22 dB. The stereo-link switch allows the module detector circuit to be tied to adjacent 500 Series compressor modules. III



## Royer SF-24V Stereo Tube Ribbon Mic

### Hybrid Design Takes Solid-State Version Up a Level

Royer microphones are favored worldwide among tracking and front-of-house engineers who are ribbon enthusiasts. The company's latest release, the SF-24V, combines the best of Royer's body, mount and electronic designs, which takes this newbie up a notch. The SF-24V's ribbon elements and measured frequency response are identical to the phantom-powered SF-24 stereo ribbon mic, its closely named predecessor. The difference comes in the SF-24V's twin tube circuits, which share their DNA with Royer's R-122V mono tube mic.

The tube advantage in this application goes well beyond the "warmth" factor, instead acting to forgive the sins of phantom power. Simply put, headroom and transient response (aka, audio quality) can be affected in an active ribbon if phantom power is inadequate from the source or weakened due to cable loss or length. This is not a factor in the SF-24V, thanks to the high source voltage supplied to the ribbons and current-regulated heater supplies that automatically compensate for variations in the length of the cable between the mic and the power supply.

#### Fun, Fun, Fun

I first used the SF-24V with a handheld recorder I was also reviewing. It had built-in mics, as well as XLR inputs that I decided to test using the SF-24V. I positioned the mic 40 feet back from the stage in a 6,000-square-foot live room with a four-piece band onstage. The P.A. was an exemplary L-Acoustics' KUDO line array, making the band sound big and "live" in the room. When I took the recording back to my office and listened through a pair of Focal CMS 65s, my jaw dropped from hearing how closely my front-of-the-stage experience

resembled the playbacks. The mic captured consistent high-end detail, a lush bottom end and a solid, punchy midrange.

Placed over a studio drum kit, the SF-24V offered a clear stereo image of the toms and cymbals with a nice, smooth top end. It also sounded spectacular on acoustic guitar. At the corner of a Leslie cabinet, it exhibited plenty of nice B3 Doppler effect in the mix that could be easily widened or narrowed by adjusting the panning. The results were also good on a Fender Supersonic guitar amp: Decisive transients, no hint of breakup and a nice beefy midrange made the guitar shine in the mix.

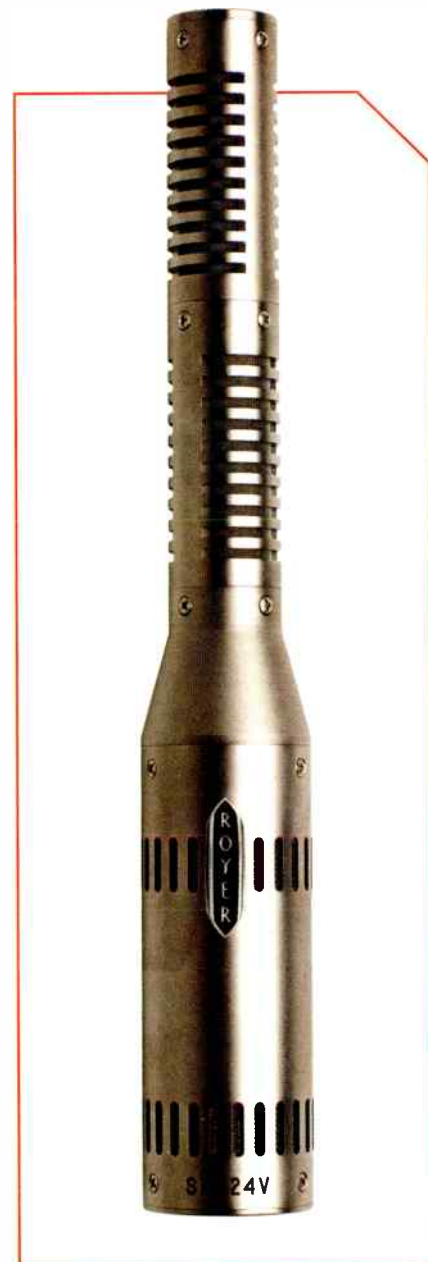
In all applications, the Royer mount deserves high praise. The same as in the SF-24, using the mic in X/Y or mid/side applications is a breeze. My only gripe is that Royer dropped the Upper/Lower (ribbon) designation on the outputs as in the past and now uses Ch.1/Ch.2. This increases the L/R "mystery" factor during chaotic session setups.

#### Qualified Buyers Queue Here

I'm a fan of the SF-24—which I use often—and this mic's ease of placement in a variety of situations is unequaled. The SF-24V shares this ability and adds that extra something you get from a well-designed tube circuit.

The fun factor is set to high on the SF-24V, urging you to try it in a wide variety of applications just to see what you get. In a live room with a band, the mic captured distance detail like a champ. The top is open, with musical response from top to bottom. Cymbals, drum transients, guitars, vocals and more come through with that gut feeling like you're in the room. Up close on amps, acoustic guitars and drums, it can stand up to high SPLs and delivers tight, crisp transients with plenty of punch. To hear audio examples, visit [mixonline.com/Online\\_Extras\\_Main\\_page](http://mixonline.com/Online_Extras_Main_page).

The SF-24V ships in a beautiful cherry box that sits inside a sturdy, partitioned aluminum case with power supply, mount



The SF-24V is the tube version of Royer's SF-24 phantom-powered stereo ribbon microphone.

and cables—but at \$6,195, this mic may discourage the faint of heart. If you want the best, then, unfortunately, you've got to be prepared for sticker shock. However, once you hear the SF-24V, the auditory experience will justify the cost. III

#### PRODUCT SUMMARY

**COMPANY:** ROYER LABS

**WEB:** [www.royerlabs.com](http://www.royerlabs.com)

**PRODUCT:** SF-24

**PRICE:** \$6,195

**PROS:** Great-sounding mic offers incredible detail and easy point-and-record stereo operation.

**CONS:** Output designation on power supply unclear in reference to L/R channels. Price may scare you.



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## Benchmark MPA1 Microphone Preamp

**No-Compromise, Innovative Design Provides Ultra-Transparent Gain**

Since 1983, Benchmark has been manufacturing leading-edge specialty audio products—notably the DAC1, which has become a standard for digital-to-analog, reference-grade converters. Sharing the same “system 1” half-rack frame design as the DAC1 is the MPA1 microphone preamplifier. The MPA1 is designed to be an ultra-pure 2-channel microphone preamplifier capable of capturing every detail of a source.

Though most of the features are pretty standard, many of them have some very innovative twists. For instance, the phantom-power section features a multistage protection circuit that absorbs the phantom-power surges caused by shorts and plugging/unplugging microphones with +48 volts engaged. The most unique feature is the stepped resistor gain control. The continuously rotating, detented knobs provide 74 dB of gain in 2dB increments. (The knob has four stages: +0, +24, +48 and +74 dB.) Being able to have recallable detent settings with that degree of precision is a great feature, particularly for a pre-amp so adept at stereo miking. Other controls include polarity inversion and a highpass filter (uniquely set at 40 Hz). A headphone out with volume control is also included on the front panel.

### One Clean Machine

The well-constructed MPA1 showcases craftsmanship and quality components: Knobs and switches all have a good feel, and the heavy casing is tightly assembled. My first use matched up the Benchmark with a pair of DPA 4011s on an acoustic guitar. A producer with whom I work regularly was doing overdubs for a radio remix, and I thought this would be a great opportunity to see what the Benchmark could do. The detail was astonishing, picking up every nuance of



The 2-channel MPA1 has all you would expect from a preamp, plus a headphone out with volume control.

the guitar but without sounding cluttered or unclear. It was smooth and balanced from top to bottom, providing an accurate but warm image. I wouldn't say that it had “character” because that would denote that the Benchmark somehow colored the sound, but the tone was incredibly full and three-dimensional. While the MPA1 didn't alter the sound, it somehow avoided having the sterile feel associated with many “clean” preamplifiers. The picking was crisp and clear, while the low end was big yet focused. Nothing was exaggerated, but the entire guitar sounded larger than life.

Inspired by these results, I tried the Benchmark on some background vocal takes. I patched a BLUE Baby Bottle into the Benchmark to see how it would fare. I was once again surprised by how full and rich the tracks were. The presence of the top end was spectacular, while the midrange and lows were big, but perfectly behaved. The precision gain settings were particularly useful on vocals, making it possible to get right up to the edge of the converter. I was amazed by how complex the vocals were for a preamp that would fall into the “clean pre” category. The Bench-

mark's balanced and detailed characteristics created one of those vocal sounds that you can put anywhere in the mix but still hear it clearly. Although that could be a good or bad thing for background vocals, it would be invaluable when trying to capture a subtle lead vocal.

### Wrap Up

The Benchmark is a world-class microphone preamp that is surprisingly versatile. It was phenomenal on vocals and acoustics, as well as everything else I tested it on. Unique features like the precision stepped-input gains add to the unit's usefulness. The 40Hz highpass filter is useful for eliminating room and mechanical noise without cutting off the extension of sources with more low end. The half-rack design, along with unit couplers and blanks, also make this mic pre easy to handle while allowing for a variety of rackmounted configurations. The flexibility of the MPA1's form and function would make this unit a valuable addition to any studio or field recording kit. ■

*Matt Bishop is a staff engineer at Alford Media Services in Dallas, where he mixes for a variety of local and national artists and churches.*

### PRODUCT SUMMARY

**COMPANY:** BENCHMARK MEDIA  
**WEB:** www.benchmarkmedia.com  
**PRODUCT:** MPA1  
**PRICE:** \$1,795

**PROS:** Amazing sonic performance, stepped resistor gain control, flexible design.

**CONS:** True-to-life transparency may not be for those looking to buy a preamp that adds “color.”





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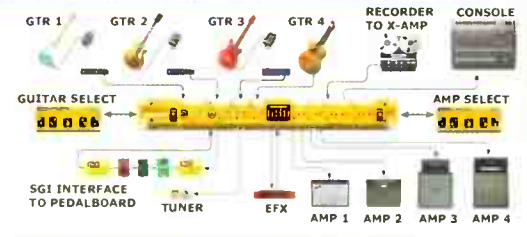
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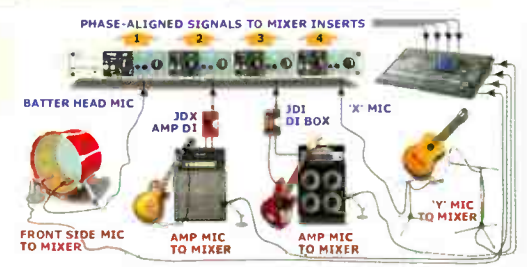
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## Chameleon Labs 7802 Opto Tube Compressor

**Affordable Stereo Unit With Gain Drive for Old-School Sound**

Chameleon Labs' 7802 stereo opto tube compressor offers a feedback design based on a Perkin Elmer VTL5C2 LED/LDR Vactrol gain-changing element. There are two elements per channel: one in the audio path and the other in the meter circuit. A 12AX7 tube gain stage is used for adding harmonic distortion. A fully regulated, linear internal power supply provides all voltages, including high voltage for the tube. Two sets of front panel controls allow dual-mono or stereo-linked operation.

The unit's attack, release and ratio controls are simplified. Attack and release time settings are folded into a single five-position switch. Attack times are 10/22/32/47/70 ms; release times are program-dependent—about 50/250/400/600/800 ms. The compression ratio is selectable at 2:1 or 4:1 via a toggle switch, while the Compression control sets the squash threshold. A switchable sidechain highpass filter has a 6dB/octave roll-off starting at 90 Hz.

Throughput gain is controlled by Drive and Output. Drive sets the level to the 12AX7; more Drive provides increased saturation and harmonic richness, while Output sets the final level. A green LED shows input signal presence; a red LED indicates input clipping. Each channel also has a small gain-reduction VU meter; there's no switching available to measure input or output level. Bypass is hard-wired through a relay.

### 7802 in the Studio

The 7802 has a "hot" feel to it—meaning that



The Chameleon Labs 7802 offers simple controls and a tube stage for adding harmonic color to a track.

ample gain is available. All controls are sensitive, with sonic changes immediately audible. I used it on both live mic sources and tracks already recorded in Pro Tools, and in all cases there was always plenty of gain to get whatever sound I wanted—no matter what input level. Even though the 7802 has a high-tech modern look to its front panel, it worked and sounded like an old-school vintage unit.

When setting up the unit, the Drive control must be turned up before the unit passes any audio. As there's no way to read input level (and no input level control), using a reference tone from Pro Tools I set the Drive control to about the 9 o'clock position, the Output control at about 2 o'clock and the Compression control fully counterclockwise. I'd like to see the Drive control configured so that the 7802 is at unity when it's fully counterclockwise with Output at 12 noon. Even with matched VU levels, the Drive at minimum and the Compression control at zero, the signal is warmer and slightly denser after going through the 7802. According to the manufacturer, the THD is dependent on the Drive setting and, assuming a +4 input signal, it will range from 0.1 to 3 percent or more. Distortion is primarily second harmonic, with the third about 20 dB below the second.

On lead vocals, the 7802 sounded and worked much like an old leveling amp, à la Universal Audio's LA-2 or LA-3. I selected a 4:1 ratio, matched levels carefully and increased the Drive control to about the 10 o'clock position. This causes the vocal to increase in level and "bloom" in size, predominantly in the midrange. This is not an EQ sound; it's a grainy boost enriched with second-harmonic distortion for a big increase in appar-

ent loudness without too much increase in actual electrical (VU) level. There is no increase of compression when increasing the Drive level.

Strapped across the stereo mix bus, the 7802 will "glue" a mix together. I compared it to my Waves' SSL stereo-bus compressor plug-in and found I could get a much higher average loudness, albeit with more midrange thickness, depending on where the Drive control was set. If you have trouble with thin-sounding mixes, this is your box. The highpass filter works well for bass-heavy mixes when you want a lot of compression with minimal pumping.

For a synth bass, I preferred the McDSP ML4000 limiter plug-in to the 7802. The Chameleon did warm up the bass, but it didn't fit the dance pop track as well as the ML4000. In all fairness, I'm comparing apples to oranges: The ML4000 is a multiband peak limiter with look-ahead functionality—a mastering processor.

I had a lot of fun using the Chameleon on a drum loop. I have a faux "When the Levee Breaks" loop, and processing it through the 7802 pushes it into the rock zone hard. If you squash and crank up the Drive control, you can get sounds similar to the loops in Discrete Drums' *Turbulent Filth Monsters* library.

Sterile and ultra-clean direct guitars can be "roughed up" through the 7802. I had to crank Drive fully clockwise, but I got more "guts" out of these usually thin and lackluster tracks.

### Not Your Average Reptile

By its nature, the 7802 is not the cleanest compressor in my rack, yet it has the most vibe. The Chameleon 7802 sounds like no other compressor out there, and is well-suited to adventure-minded engineers and producers looking to add another color to their sonic palettes. III

### PRODUCT SUMMARY

**COMPANY:** CHAMELEON LABS

**WEB:** www.chameleonlabs.com

**PRODUCT:** 7802

**PRICE:** \$799

**PROS:** Thick tube harmonic distortion makes for a louder, fuller sound on individual tracks or entire program mixes.

**CONS:** No means of metering input or output level. No bypass on the tube-saturation section.



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### ROBERT NAVARRO, RA AUDIO

Beverly Hills

[www.raaudio.com](http://www.raaudio.com)

In January 2001, Robert Navarro became the music director for Associated Production Music (APM). During the next few years, he selected tracks for projects such as *Spider-Man*, *Smallville*, *The Sopranos*, *Six Feet Under* and *Twisted Metal Black*. Eventually, Navarro entered the production side. This led to coordinating CD projects for various APM-related libraries, as well as producing, recording and composing CDs of his own. Shortly thereafter, Navarro became an executive producer for APM. In August 2007, Navarro left APM to found RA Audio, a music production company dedicated to creating music for film, TV, game audio and commercial artists. Noteworthy projects under RA Audio include *Fast & Furious*, custom music for Apple Computer and voice-over for mtvU.





Continued from page 24

Combining editorial/design with re-recording functions also offers creative advantages. With an extensive background in sound design and sound-effects mixing, Myron Nettinga used his skills while developing predubs for director Jonathan Mostow's film *Surrogates* at Sony's editorial facility prior to the mix at Walt Disney Studios. "Because of my experience as a mixer," he says, "I'm able to use those sensibilities while making creative choices during designing that will carry through to the final mix. I know what I will want for separation, panning, delays and reverb, with a good understanding of how it will translate on the final stage." Working closely with supervising sound editor Jon Johnson, Nettinga developed predubs while designing sound for a number of action sequences and other selected scenes.

"I will still be doing more pre-dubbing at Disney before the final mix," he continues, "but it was great to have built and pre-dubbed some of the larger and busier sequences early on. I see the approach of working earlier in the process in smaller rooms becoming more the norm. [It is] similar to the music stems that currently come to the stage for the final mix and which have been pre-mixed in smaller control rooms by the scoring mixer. It's a great way to work with budgets and schedules that may not always be optimum, without sacrificing quality."

Most re-recording mixers are reluctant to work with predubs that have been produced by somebody else, unless they have worked closely with the mixer in the past and share similar sensibilities, or are supervising their choices. "We try not to pre-dub each other's material if possible," Jenkins confirms. "On one film where I couldn't make it for pre-dubbing, I offered to the director that probably it would be better if the same re-recording mixer took the project all the way through finals. There is just too much room for interpretation. I guess it's 40-percent ego and 60-percent reality."

"If I don't do the predubs I just don't know what the problems were and what to look out for going into finals. I have a great auditory memory and 'learn' the film during pre-mixes. For example, I might not clean up something or put on a particular reverb because I know that I could get to that later in the process. Somebody else might not do that; they may clean everything up for me. Making this sort of decision—and locking myself in—is something I'd prefer to do for myself!" ■

Mel Lambert heads up Media&Marketing ([www.mediaandmarketing.com](http://www.mediaandmarketing.com)), a full-service consulting service for pro-audio firms and facilities.



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**IAN WILSON ROSS, BOOLEAN STUDIO**  
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Ian Wilson Ross is owner/operator of Boolean Studio, a sort of catch-all project that encompasses composing, recording, production and sound-for-picture. He has provided music for feature-length films, TV and the Web. Ross' voice-over talent has been heard on numerous local radio commercials, as well as in an animated short (for which he also provided music and sound design). In addition, Ross is half of Twin Goat, a psychedelic/country/dub recording project that is quietly soothing children and adults around the globe. Starting with a degree in Sound Recording from the University of Massachusetts Lowell (cum laude, 1997), Ross has steadily gained experience and broadened his horizons in all things audio-related. He is most interested in music for picture and sound design.

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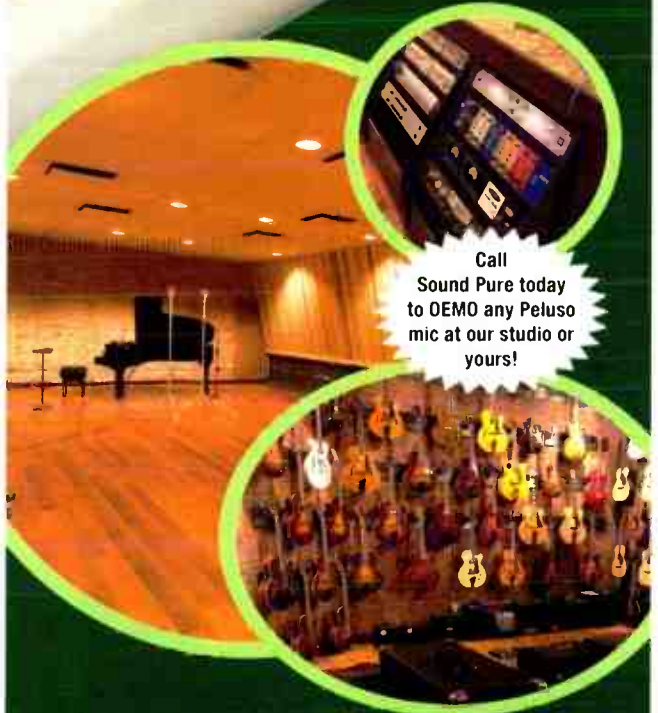


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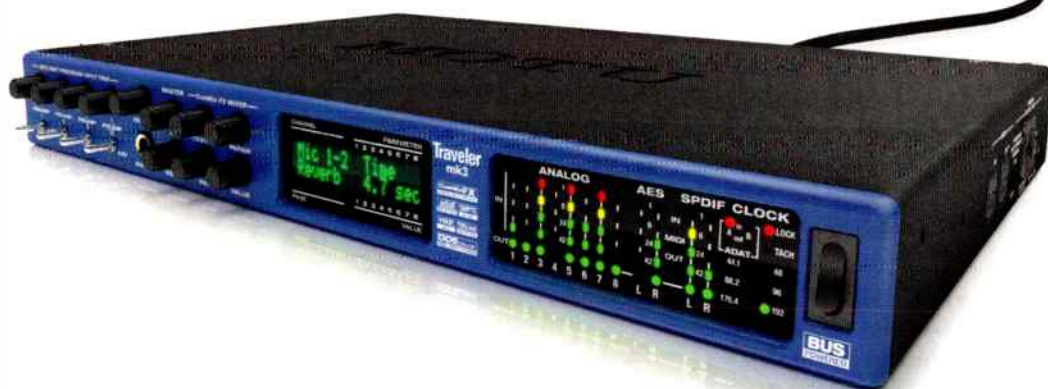
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The Traveler-mk3 offers five powerful new audio analysis features: an FFT, Spectrogram, Oscilloscope, X-Y Plot, and Phase Analysis. If you already own a "mk3" MOTU FireWire audio interface, download them now at: [sweetwater.com/mk3upgrade](http://sweetwater.com/mk3upgrade).

## MOTU Traveler-mk3

### Bus-powered portable I/O with FX

The Traveler-mk3 isn't just a 28 x 30 FireWire interface. It's a full-blown digital mixer with effects, including modeled analog EQ and compression on every channel, plus reverb — all accessed via the elegant CueMix FX on-screen mixer. Just added: powerful new X-Y Plot and Phase Analysis displays that let you clearly see and correct phase and polarity issues.

## Euphonix Artist Series

### High-end console for your MOTU studio

**MC Control, MC Mix** and the new **MC Transport** bring Euphonix' high-end console technology to your MOTU desktop studio in a compact design that fits perfectly in front of your MacBook Pro. MOTU DP6 now natively supports Euphonix' EuCon protocol for seamless, tactile control over almost all major DP features and transport-related controls.

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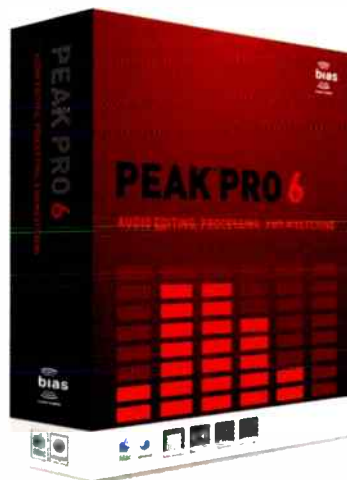
It's 24 inches of gorgeous display — and a convenient dock for your MacBook or MacBook Pro and other essential desktop devices, such as your iPod, iPhone, USB printer, and camera. The handy 3-in-1 cable connects to your MacBook's DisplayPort, USB 2.0 port, and MagSafe power connector. Just plug it in and you've instantly got more screen real estate. Includes iSight camera, microphone and speakers.



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## Jim Anderson

The New York University educator, Grammy-winning engineer/producer and current AES president talks about the changing face of the organization and offers a preview of the fall New York convention.

***It seems the AES has changed recently, with a new vitality, a new Website, a new spark.***

The AES shield has a vacuum tube on the front, and we've always sought to honor the past while moving toward the future. Part of what myself and recent AES presidents have been hoping to achieve is bringing the AES forward and keeping it vital. Lately, the AES has been very active in social networking—Facebook, Twitter and YouTube—which goes hand in hand with the new AES Website design.

***And the demographics have changed to a younger membership.***

That's only natural. We've done a terrific job at bringing students up through the universities, but you have to realize that all the members of the society—even the most experienced—at some level are all students, which is why the technical programs in the conventions are so successful.

***But besides university students, there's also been an influx of young people who are interested in audio because of low-cost recording gear.***

That's certainly happened, particularly over the past 10 years. If people who are entering at that level are shown proper ways and can get good foundations and essentials, we can elevate the level of audio throughout the chain. There is also a fair amount of community and networking in the AES. It's a way for a lot of these young

people to connect with their heroes and idols. The whole mentoring and apprenticeship model in the recording industry is not what it was, and I believe the AES serves a lot of that function today.

I sometimes feel like I'm the poster boy for AES networking. A lot of where I've gotten over the past 30 years has been through contacts at the AES. At New York University, a lot of my students graduate and leave for major areas where they don't have contacts. I recommend they get involved with the local AES chapter and attend the monthly meetings where they can meet the people who are involved in the industry.

***There's been some criticism about the AES focusing on recording and ignoring other segments of audio, such as live sound.***

Four years ago at AES, we started a live sound track to reach out to the live sound community and made a major push into the broadcasting area, even though we had been offering individual sessions on these topics for many years. We're trying to be aware and not ignore the various constituencies within audio, such as game audio.

***And game audio has its own tools, language and mindset.***

Absolutely! If we're trying to train students to enter the world of audio, we have to look at these areas because this is a big part of audio's future.

***What are some new things planned for this year's AES?***

We're planning a very specific area of gaming. Another thing we're looking at is IP and how things get into and out of the studio and in broadcasting. Other areas include mobile TV and production for mobile devices, and audio processes in the Internet stream.

Two years ago, in trying to select a keynote speaker, we had a lot of good suggestions, so we decided to have a keynote every day. It's been



very successful, a way for people to take just an hour out and listen to some great topics.

Last year, David Giovannoni [of First Sounds] unveiled his findings on deciphering some phonograph recordings made using a quill and smoke on glass plates in France about 1860—17 years before Edison. This year, he'll present these recordings—and perhaps some new ones, as well—for the first time on the East Coast in a lunchtime keynote.

Another event has the fellows who wrote the *Recording the Beatles* book, talking specifically about the *Sgt. Pepper's* project. This is also the 50th anniversary of *Kind of Blue*, and Ashley Kahn, author of *Kind of Blue: The Making of the Miles Davis Masterpiece*, will discuss the album production.

Bob Hodas is doing a master class on room tuning. And several things celebrating 50 years of Motown with historical overviews are planned.

***What makes the AES work?***

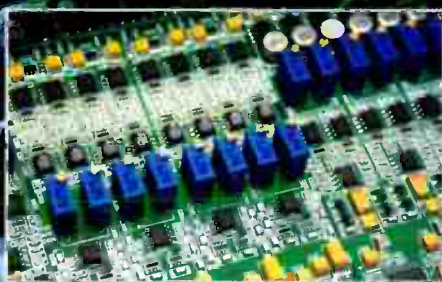
The AES is a volunteer organization. It depends on the efforts and enthusiasm of a lot of people and we really want to support that. We constantly have to work to bring in new blood. About 10 years ago, someone asked me to be on a local section committee and wondered why I'd never done that before. I said, "Because nobody ever asked me." So over the past 10 years, I've been going out and asking others to be a part of it. Those people have been very successful at giving back to the society, and we've had a good time doing it. ■



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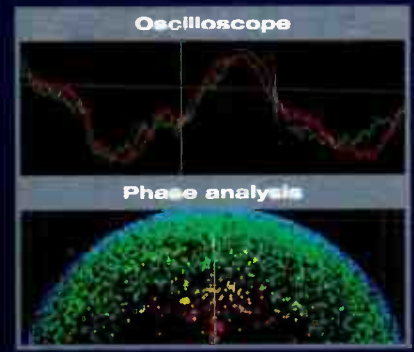
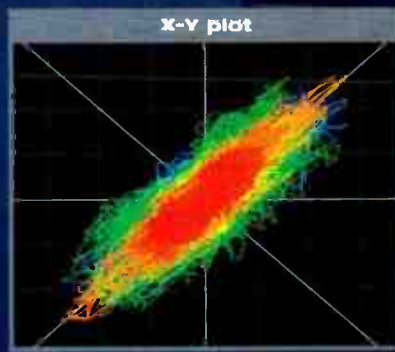
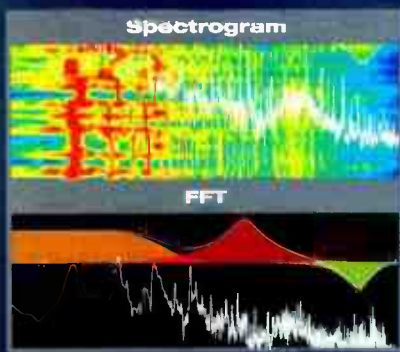
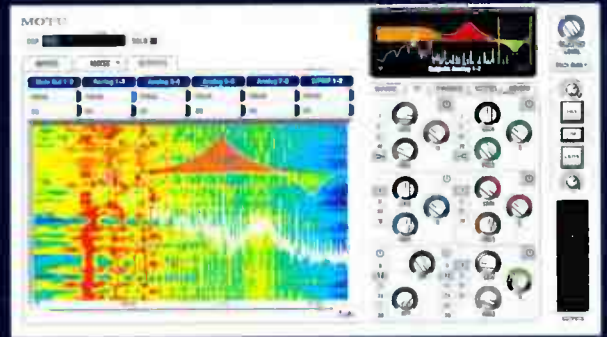
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