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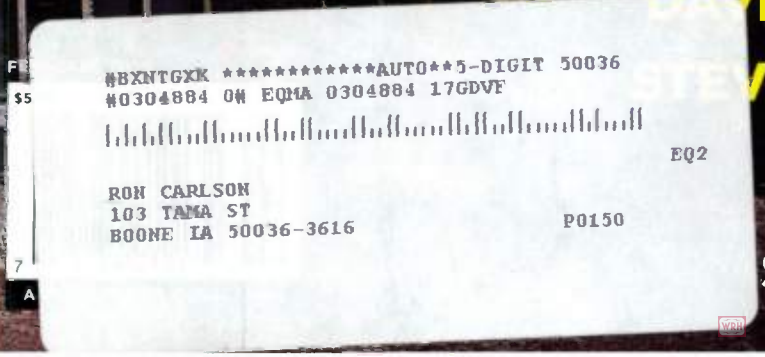

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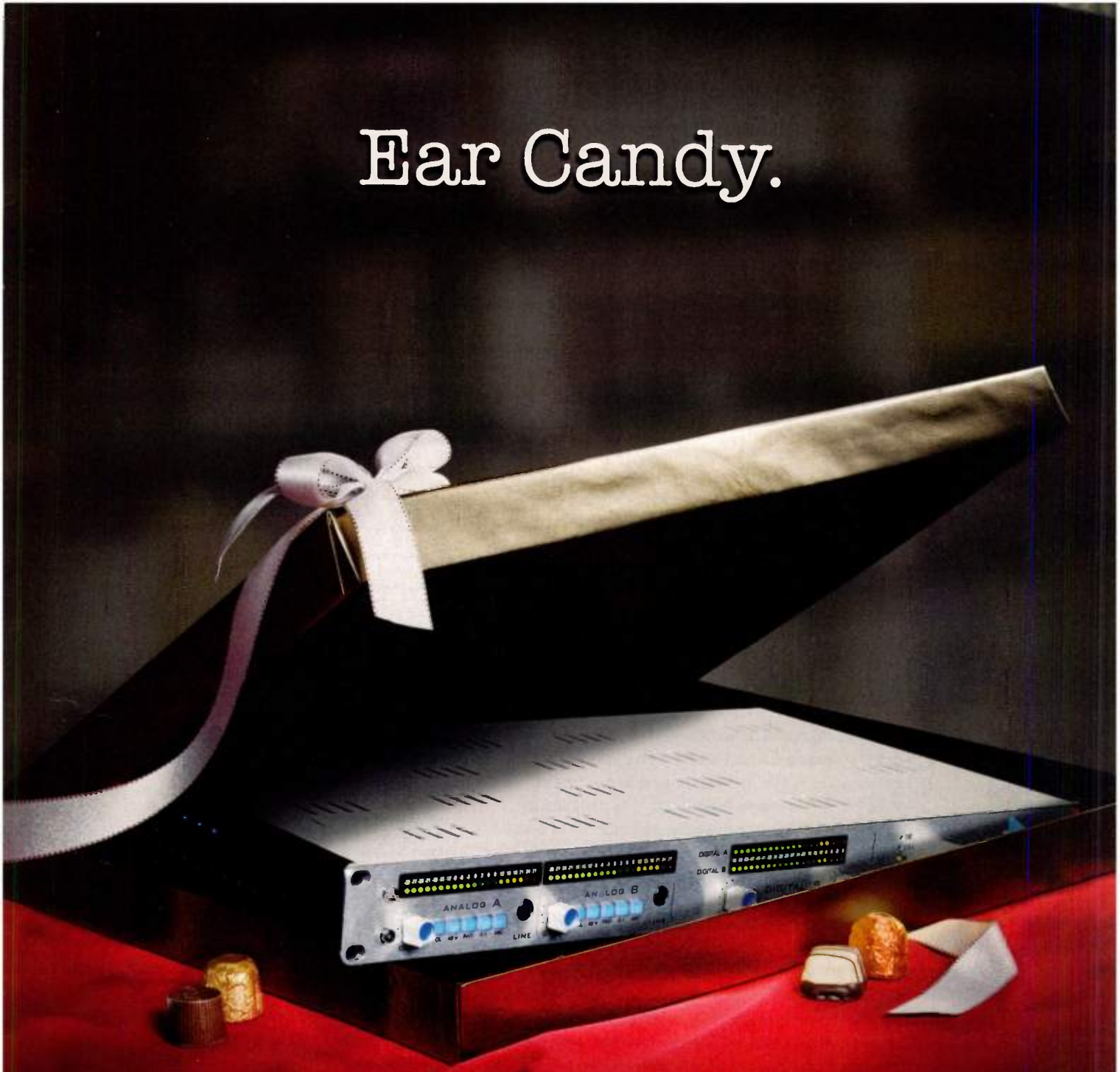

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MUSIC EVERYWHERE!

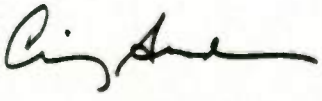
Recently, I was approached by a good friend who works for Analog Devices, makers of (among other things) the SHARC chip that's found in so many of today's high-tech music devices. He said they were running a little internal contest called "Engineered to Rock" for the musicians in the company, and would I be willing to be a guest judge? He figured there would be maybe 20 entries or so. Sure, I said, what the heck . . . I don't have any Simon Cowell fantasies, but maybe I could point some budding hobbyists in the right direction.

Turns out there were so many entries the deadline had to be extended, and the bottom line was a CD with around 80 cuts. I must admit I dreaded the idea of hearing bad karaoke recorded in bad home studios, but that wasn't the case at all: The variety of material was stunning, from serious classical pieces with serious chops to Weird Al-style songs about engineers, complete with hilarious videos. There was music that Nine Inch Nails would be proud to have inspired, an electronic/dance composition from two guys that sounded as good—or better—than anything else I've heard lately, some hot alt-rock, and yes, a couple semi-dreadful pieces too . . . yet even those had potential, if only the musicians doing them had known more about basic recording technology. And if nothing else, they were valid artistic expressions that had real feeling behind them.

Far from being a chore, listening to this diversity of music from the USA, Ireland, Singapore, Indonesia, England, France, and several other countries was not only enlightening, but a real morale-booster. Why? Well, at *EQ* we believe in home/project studios, and creative expression, and we do our best to find articles that help people in those endeavors. But to hear the broad spectrum of how people are using today's tools—from recording into a laptop mic to full-blown DAW productions—underscored just how far the democratization of music has come.

Granted, the major labels aren't what they used to be, the promise of the Internet hasn't been fulfilled completely, and piracy—with its attendant disrespect of the value of the artist—runs rampant. *But really, is that what music is all about?* Or is it really about someone in, say, the Phillippines coming home from a day job, grabbing a guitar, getting together with some friends, and recording some cool music into whatever they have sitting around? And even better—music that I, located half a world away, get to enjoy?

Music is everywhere. And I love it.



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KEYS TO LATENCY

Regarding Key Issues in the 11/08 issue: Finally! Someone explains virtual instrument latency! Do you know how long I've waited for this? Probably not. Well, let's just say . . . a long, long time. Kudos to Craig for taking this on. Now I understand better why my virtual instruments have such a delay when used as DXI or VST plug-ins as opposed to running on their own. I also loved the Gear Head column in the same issue. Nice to get a real world discussion on the various controller types out there. Thanks again, Craig!

Marcel.mib (via Email)

Executive Editor Craig Anderton responds:

Well thanks for the kudos, but Bruce Bartlett wrote the article on synth latency, so your thanks should go to him! However, I'm more than happy to accept your thanks for the article on controllers. I can't emphasize enough how important physical control is to creating more of a "performance" vibe—people who put off buying a controller and finally get one often kick themselves for not getting one sooner.

GO GO CALEXICO

Regarding the Calexico article (12/08), I too have been fortunate enough to record at the Wavelab with Craig Schumacher, I wanted to point out a couple things about the way he records. First, there is minimal isolation—if you don't like bleed and you have more than a drummer and guitarist in your band, you are either going to have to go direct or go somewhere else. Bleed is (or was when I was there a couple years back) a part of the studio reality.

Second, the studio has a lovely 1980s MCI 24-track 2-inch machine that accounts for a significant part of the sound. Craig didn't have to fuss around with EQ too much on guitars with our session because of mic placement and tape (GP-9 at 30ips).

Also, I think what hurts many home recordists when it comes to recording electric guitars at home are 1) volume (loud amps make things in the house rattle and overwhelm mics) and 2) lousy converters on cheap interfaces.

Good to see you guys talking with people like Craig Schumacher. He is helping to facilitate great regional and national music and is a fun, hard working guy!

Ian Mason

YOU'VE GOT QUESTIONS . . .

First of all, I would like to thank you guys at *EQ* for your Cheat Sheets. They have helped me a lot, and friends of mine that are not into music production understand a little bit more that the process is not as easy as it looks. But I have two questions:

1. Can you do a Power App Alley on Mackie Tracktion? It is a powerful and streamlined DAW that I think a lot of people are overlooking.

2. I'm using the E-mu 0404 PCI audio interface. How can I interface my outboard Alesis Q2 reverb with the audio in my DAW? I've been trying to figure this out and I just can't get it.

Eric Melton

Executive Editor Craig Anderton responds:

There was a Tracktion Power App Alley back in July 2004 on Tracktion's clever FX routings, but that was a while ago so I guess we're due . . . no promises, but stay tuned.

As to interfacing audio with your DAW, the usual approach is to use an interface with multiple inputs and outputs, so you can dedicate a bus in your DAW to feeding a set of stereo audio outs. You patch these from your interface to the reverb in, then patch the reverb out to two inputs on the audio interface. You then assign these as inputs inside your DAW. However, the limited I/O with the 0404 could be a problem; you'll have to tie up your analog I/O just for the reverb, so unless you can monitor from the S/PDIF output, you won't be able to hear what you're doing.

While the 0404 is still a fine interface, consider upgrading to one with more analog I/O if you want to use external effects. Or, consider using the reverb DSP that comes with the 0404 as a workaround.

And thanks for the compliments on Cheat Sheet. That's actually one of the hardest things for me to write each issue, but the response has been so good it's well worth doing.

GIMME ARTICLES!

I look forward to *EQ* every month, and appreciate your attitude about how recording should be about music, not just knob-twisting. But there are some articles I'd like to see, and I'm sure others would too. Like:

How do you do a remix? I understand mixing, I understand recording, but the whole idea of remixing baffles me. I'd really like a "here's how it works" article.

The article on creating a virtual bass rack in a DAW (12/08) was great—that paid for the cost of my subscription about 100 times over because now I use plug-ins instead of gear GASsing for more rack stuff. You also did one on guitar racks, but how about something in-depth on using the racks in Ableton Live?

Barryman (via email)

Executive Editor Craig Anderton responds:

Excellent suggestions. While you're waiting, dig out the 09/08 issue for a Power App Alley on using Ableton 7's rack feature with drums.

Got something to say? Questions, comments, concerns? Head on over to www.eqmag.com and drop us a line in our Letters to the Editor forum, send us an email at eqeditor@musicplayer.com or snail mail c/o EQ Magazine, 1111 Bayhill Dr., Suite 125, San Bruno, CA 94066 for possible inclusion in the Sounding Board.

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UNCOMMON SOUNDS

Dave Cooley Damns the Clichés

BY JOHN PAYNE

Every now and then, we experience that strange phenomenon in which one name keeps popping up in connection with much of the best music going down at any given time. Without a doubt, Dave Cooley has got to be at the top of the current list. The Milwaukee-born, Los Angeles-based producer, engineer, and keyboardist is currently making big waves for his work with an intriguingly varied number of rock and rap artists, as well as an assortment of artists in-between and way outside: J Dilla, Bloc Party, Matthew Dear, Madlib, Peanut Butter Wolf, David Axelrod, Silversun Pickups, International Noise Conspiracy, and Darker My Love.

In addition to his busy production schedule, Cooley owns and operates Elysian Masters in Echo Park with Kelly Hibbert. Currently, Cooley is ensconced at Sunset Sound Recorders in the middle of Hollywood—the Doors, the Stones, and tons of other icons worked there—working on the follow up to the Silversun Pickups' *Carnavas*.

"The history of this place is incredible," says Cooley. "We've recorded in a number of different places around town, but there's something about the warmth of the wood and the size of the room that makes drums sound amazing. There's a certain liveliness that lends itself to rock music, as well."

Although he is becoming well known as a producer of edge-pushing modern rock bands, much of Cooley's earliest work was mixing hip-hop—an experience that gave him an intimate understanding of the different sonic requirements of each genre.

"When you mix hip-hop," he says, "you can get away with a lot less vintage equipment. Hip-hop is more about creating a futuristic, otherworldly environment, and then balancing everything, making sure the vocal is intelligible. Of course, you want it to rock, but you're not as reliant on harmonic distortion, vintage compressors, and vintage consoles. Basically, it's a more digital medium, and there's a lot more space. You don't have to rely on building up subtle layers of harmonic distortion to make the whole thing sound fatter. In rock music, however, things are reliant on tape and outboard gear. It seems like the elements want to be pushed harder, so you push things into the red. If a mix is too clear, it's not as inviting, or as heavy. But in hip-hop it's acceptable if things are really clear."

Cooley's experience also inspired an appreciation for the various applications of digital and analog technology. Now, the "velvet heaviness" of his production work relies on a hybrid approach.

"I started on the digital end of things, and then moved towards more traditional recording techniques," says Cooley. "There are all these analog characteristics—such as depth, dimension, and width—that you sacrifice when you're using a computer, and you can try to find ways to make up for them. In addition, there are certain things that digital doesn't do very well—such as boosting high end and compression—so you have to learn how to blend the analog with the digital."

Of course, coming from a hip-hop background, Cooley *does* value some of the digital artifacts and aliasing that are part of that genre's sound, and he plans to make extensive use of these anomalies on the Silversun record to give a dry, cold, and "sample-y" timbre to a lot of the keyboard tracks. Avoiding clichés is of utmost importance in Cooley productions, and that goes from the song's initial conception all the way through its arrangement, performance, mixing, and editing.

"When you sing, `You've got a heart of stone,' the lyric just flies past most people," he says. "They can't connect emotionally with it, because they've heard that cliché so many times. Such clichés remove you from the music, and from the moment. The same thing happens with textures, guitar tones, and drum sounds. If you constantly play cards that are clichés, the music won't draw you in, because it's not hitting you in a new way. One option for achieving something that sounds unique is to find arrangements that are flattering to the artist's vision of what he or she wants to be, but to also incorporate some kind of creative or sonic tension. That way, there's a kind of dialogue between two disparate areas that hopefully sounds mysterious and interesting."

During his tenure as both a producer and mix engineer, Cooley has developed a favorite list of basic tools that typically create the foundations for his recording projects—unless he decides to try doing things another way.

"We use everything on vocals," he says. "We've used Electro-Voice RE20s, Neumann U67s and U47s, and even an

Cooley surrounded by his cliché-killin' tools.

STERLING ANDREWS

AKG C12A. It depends on what sounds good on a particular voice. Usually, we'll put up eight different mics at the beginning of a project, and have the vocalist sing through them all in order to see which one really flatters their voice."

Cooley is just as picky about drums, and he's fastidious about tuning.

"I spend a lot of time tuning drums," he admits. "We'll sit around a Casio keyboard, and make sure that the notes the snare and toms are sounding do something musical to the song. We might go through ten different snare drums to find the one that produces a note that's flattering to the music. I learned that many producers in the '60s and '70s were extremely concerned with how the tuning of the drums affected the overall sound. Apparently, the Rolling Stones were very big on that."

For compression, Cooley tends to rely on two polar opposites—a Shadow Hills Mastering Compressor for adding color, flavor, and distortion (especially on 100 percent digital tracks), and a Cranesong STC-8 for extremely transparent level adjustments. He also owns a couple of compressors made by John Hinson, who is apparently one of the very few people to have access to the schematics for the modifications EMI techs did to the '50s- and '60s-era Altec compressors used at Abbey Road. For monitoring, Cooley is hooked on Barefoot Sound MM27s.

"They're incredible," he says. "They have a lot of extension in the low end, but they also have the super-clear midrange of a Yamaha NS10."

Cooley's cliché-free, artfully complex productions typically serve one basic objective.

"My goal is to have the product sound like it *wasn't* made in the computer," he says. "Whatever you're doing with the music, you have to keep an ear out for things that stay true to rock and roll, and sound a little bit off the rails." EQ

Low vs Diamond (left to right): Jon Pancoast, Anthony Polcino, Lucas Field, Tad Moore, and Howie Diamond.

THE POWER OF SONG

Low vs Diamond Concentrates Its Varied Influences to Deliver a Deep and Euphoric Work

BY LILY MOAYERI

"Listen to this," says Lucas Field, vocalist, guitarist, and principal songwriter for Los Angeles-based Low vs Diamond. Sitting on the stairs leading to his front door on a balmy summer afternoon, Field is pulling up song after song on his Apple MacBook loaded with Logic Express 8. Some are demos that ended up on the quintet's self-titled debut, the destinations of others are yet to be determined. His excitement borders on attention deficit disorder, as he is so distracted by the various styles—R&B to pop to rock to Motown and beyond—that inspire him. Fortunately, Field had producers Stacy Jones and Bill Lefler to focus his energy into the diverse, well-crafted work that is *Low Vs Diamond* [Red Ink].

"Those guys really helped us out," says Field. "They made us think about songwriting more than production. They would say things like: 'Why do you have this bridge here? It doesn't really tie the song together the way that you think it does.' I also learned how important harmonies are, and how they must come in and out at the right time."

Field typically demos ideas on his own before taking them to the rest of the band (drummer Howie Diamond, keyboardist Tad Moore, guitarist Anthony Polcino, and bassist Jon Pancoast), at which point the material is expanded by recording new arrangements in a rehearsal space. The group usually makes sure that whatever it does in the studio can also be done live, and, sometimes, parts from the rehearsal sessions appear on the final album.

"I pride myself that my guitar setup is really simple," explains Polcino about Low vs Diamond's live-vibe-in-the-studio approach. "My guitars are plugged straight in an amp, and then doubled up. I have about four standard tones that I use—clean, gritty, distorted or overdriven, and effected with a tremolo pedal or a delay pedal."

As the songs became tighter during the recording process, the band also took control of the studio itself—even to the point of setting up microphones and tracking their own overdubs and touchups.

"It's essential that whatever technology we use to make our records that it doesn't get in the way of us just being ourselves," says Polcino. EQ

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REBEL HELL

Hank Williams III Overcomes Studio Adversity

BY JOEL PATTERSON

Recording *Damn Right, Rebel Proud* [Sidewalk], Hank Williams III's fifth album—and the second done at his Tennessee home—was a bitterly frustrating experience. There were times during the sessions when Williams' simmering rage at the tracking engineer he had hired just about boiled over.

"A pal of mine was talking about this engineer forever, but when the kid showed up I could tell that he thought working with me was going to be a party," remembers Williams. "Then came the grim realization that he was here to work, and this was his first acoustic project. He's like, 'I'll make it through, man. I'll make it through.' But within four days, I knew it was going to be a long two weeks. I thought, 'This kid is going to make this album a jumbled cluster f**k.' Then, he started getting pissy with some of the players I had coming in—he was totally working against us. I've never in my life had to lean over and say, 'Do we need to pull the plug and send you home right now?'"

The recording process was likely a bit less problematic for William's granddad, the truly legendary Hank Williams, Sr., who, in 1946, made his way to Nashville's Castle Studios—a state of the art facility run as a side project by seasoned engineers from the city's flagship radio station WSM. The studio management was aggressively committed to

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(Continued from page 12)

innovation, and the purchase of a Scully lathe to cut master discs—the first such unit in the South—allowed for rapid duplication and distribution of recordings. Williams, Sr., and his accompanists would cluster around a single RCA 44 or 77 ribbon mic that was fed to a simple tube console, and, ultimately, out to the lathe (which was too large to be kept onsite, so it was housed in a warehouse 12 miles away, and connected to the studio by a telephone line). Three-hour sessions were the protocol, and each session was expected to produce four songs. It should be obvious that these sessions were live to disc.

While the *Damn Right, Rebel Proud* sessions embraced the benefits of digital technology, Williams III tried to stay true to the basic tenets of his grandfather's organic "capture it live" approach. After straightening out "the kid's" messy Pro Tools files with his friend Jim Lightman, Williams returned to the task of building up his songs layer-by-layer. Typically, he started with acoustic rhythm guitar and a scratch vocal, and then recorded drums, bass, fiddle, banjo, mandolin, dobro, pedal-steel, and electric guitar. Williams' living room saw most of the action, with drums, guitar, fiddle, and steel all tracked in the same room, and vocals recorded in a little hallway.

"It's not a fancy room or anything," he says. "It has hardwood floors and an eight-foot ceiling. Separation was decent, because we had enough room to get the drums away from the other instruments, but there was still some signal bleed."

A console was rented from the local SIR [*Studio Instrument Rentals*], and the mics were almost exclusively Shure—SM57s for bass and guitars, a KSM9 for vocals, and KSM44s for room mics.

"I'll tell you this," says Williams, "we didn't use any old fancy or high dollar mics—it was basically all stuff that Shure has given me. We'd just kind of mess around with the mics we had, and see what we could get going on."

For the album's musicians, Williams called up about half of his touring band, and filled in the other spots with Nashville session giants.

"[Session guitarist] Johnny Hiland is the king of the record," says Williams. "He's a virtuoso *and* an incredible guy. He walks in, and says, 'How you doing, buddy—how many are we going to do today?' I'll answer, 'Well, we're probably going to do 12 tracks today, Johnny,' and he'll just say, 'Alright, hook me up!' He'll take two passes at each song, and, within an hour and a half, he already has his stuff packed up and he's heading out the door, saying, 'Man, I can't wait to see you next time. I hope you let me play on one of your rock records one day.' He's as quick as they come. Randy Kohrs—who flatpicks the acoustic guitar and dobro on all the fast songs—and banjo player Charley Cushman are also guys that get it done fast. However, my steel player, Andy Gibson, likes taking a little bit more time, because he likes to pick a song apart and really listen to it."

Whether it's his well-documented and hard-won rebel persona, or the exhaustion talking after having to wrangle sounds out of "the kid," Williams is brutually honest about the fact that *Damn Right, Rebel Proud* didn't exactly nail his vision.

"The record is not as psychedelic as I wanted it to be," he says. "I always like adding what I call 'The Pink Floyd Effect'—strange echoes and other weird sounds that appear on every single damn song—but things were working against me on this one. Simple moves that I know should have only taken a few minutes ended up taking almost an hour—you know, just getting an echo going or something. The kid wasn't feeling it. "Stoned and Alone" has a little bit of the Floyd Effect. I just wish more of the record had it."

Another aspect of the album's production that was more-or-less out of Williams' hands was a contractual obligation to deliver "safe" songs such as "I Wish I Knew."

"Yeah, that's really in the contract," says Williams. "I have to give them two songs that are good enough for the radio. If you ever hear a real pretty song on one of my records, that's probably the reason why. Of course, every song I think is a hit never is. That's just the way it goes. But I hope people can see the difference in the songs I write for myself, and not for the radio. It would be nice if we stood out a bit, compared to the way most country records out of Music Row sound these days. I really want to keep us kind of underground." EQ

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Producer/engineer Emery Dobyns (left) and Fran Healy during mixing sessions at Electric Lady Studios in New York City.

How Travis Wrote, Tracked, and Mixed *Ode To J. Smith* in Just a Few Weeks

by Janice Brown

"There's a lot of pressure when you're on a label, because the record you're making has to work—it has to sell—and that's not always the best situation for pure creativity," says Travis vocalist and rhythm guitarist Fran Healy. "But after 12 years together, we're now an unsigned band again—totally masters of our own destiny."

Fresh out of its contract with Independiente Records, Travis drew up an ambitious plan for its first recording as newly free men, *Ode To J. Smith* [Red Telephone Box/Fontana]. Desiring to keep the songs and studio performances as fresh and energetic as possible, the members decided to write the album's songs in just a few weeks, and then test out the material at some small shows. The kicker was a self-imposed deadline of two weeks to record the entire album, and two weeks to mix it.

When *EQ* caught up with Healy at Electric Lady Studios in Manhattan, the album was nearly mixed. Emery Dobyns had signed on to record, mix, and produce *Ode To J. Smith*—a project that began with tracking sessions at RAK Studios in London—but Healy had already nailed a lot of the preproduction work.

"Before we even went into the studio, the album was written and sequenced," says Dobyns. "Fran is a fairly accomplished engineer, and his demos had a great vibe to them."

Ode To J. Smith does not mine Travis' flair for sentimental Brit-pop, as demonstrated by hits such as "Why Does It Always Rain On Me?" Nor do any of the tunes truly recall the jangly folk-rock of favorites such as "Flowers In The Window" and "Coming Around." On the new album, wailing guitars predominate, bonding with rock-steady rhythms to create a sound that's closer in attitude to Travis' first single, "All I Want To Do Is Rock."

"Get your air guitars ready, people," Travis advises fans in an online studio journal.

Inspired by recording the Beatles' "Lovely Rita" with Fab Four engineer Geoff Emerick for a BBC broadcast last year, Travis wanted to capture big rock sounds the old-fashioned way. They considered recording live to 4-track, but settled on analog 16-track when producer Mike Hedges' machine became available.

"We've always recorded as a band playing live to tape," says Healy. "Tape makes you focus, because, in this case, we had only 16 tracks, and we had to make every track count."

Prior to loading in at RAK, where at least a portion of every Travis album has been recorded, Healy and Dobyns worked on selecting the best mics for the project.

"Nigel Godrich [*producer for Paul McCartney, Travis, U2, Beck, and others*] leant us a pair of AKG C12 As, a Neumann M57, a really pristine old AKG C12, an AKG C28, and a Sony C-37A," says Dobyns. "I knew a good pair of C12As would be great on drums, and we used the C12 on most of Fran's vocals. The Sony C-37A turned out to be the most useful and amazing room mic."

Travis' production plans for *Ode To J. Smith* were straightforward: Set up the right microphones and play. These were totally live sessions, with Healy doing his lead vocals out in the tracking room—either on the C12 while enclosed in gobos, or running around with a Shure SM57 in hand.

The band set up in Studio 1 at RAK, where the large live room was divided by a glass wall to isolate three drum kits placed on one side from the bass, guitar, vocal, and piano stations on the other. Travis drummer Neil Primrose switched between the three kits—his regular touring kit; a tiny Ludwig kit consisting of a floor tom, kick, snare, and hi-hat; and a massive "marching band kit" with a 28" kick drum and drastically detuned toms.

"Because of our track limitations, I went with very minimal drum miking," notes Dobyns. "On almost every song—and no matter which drums we used—I had four mics or less on the kit. Having the three kits helped us move quickly. If one drum sound wasn't working for a particular song, Neil would just move to a different set.

"For miking rack toms, I sometimes like to put an AKG C414 in hypercardioid mode to get a nice close sound that will help them pop out a bit. You really get the tone of the drum—especially if the drummer is bashing away all around it. On the touring kit, I placed an AKG D12 about six inches outside of the front kick-drum head, and positioned a Sony C-37A about three feet back from the kick at a height of about six feet. By raising the C-37A up and down from song to song, I was able to get different blends of cymbals and low end."

Dobyns miked the Ludwig kit with a Neumann U47 FET on the kick, and a Coles 4038 placed about two-and-a-half feet above the snare. Newspaper taped to the heads gave the snare an extra dead sound. Two U47 FETs were used to mic the marching band kit—one on the kick, and the other positioned below the right-hand cymbal about six inches from the toms. A C-37A served as the overhead on that kit, as well.

"For one song, I put a Sennheiser MD421 right inside the marching

Cut to the Quick

kit's kick drum, and blended it with a U47 FET positioned outside the front head," says Dobyns. "It sounded just great. It had this incredible attack, and then this really long and sustained low end."

On the other side of the glass wall, bassist Dougie Payne's Ampeg SVT was close-miked with a Sennheiser MD421, lead guitarist Andy Dunlop's Orange amp was close-miked with U47 FETs, and Healy's Vox AC30 was miked with a Royer R-121.

"The amps weren't particularly boxed in—they were just separated from each other," says Dobyns. "We weren't going for complete isolation. In fact, the open sound of two guitar amps and a bass amp playing in the same room added a nice texture to everything."

Although he took home a Best Engineering Grammy for Suzanne Vega's *Beauty & Crime*—and has a résumé thick with sessions for artists such as Patti Smith, Antony and the Johnsons, Sia, and Battles—for *Ode*, Dobyns drew from the reserve of hip-hop techniques he picked up early on as an assistant at P. Diddy's Daddy's House.

"The demo for the song, 'Get Up' had this hypnotic groove that could have been psychedelic folk or hip-hop, and I definitely steered it toward hip-hop," says Dobyns. "We used the Ludwig kit for 'Get Up,' and I made sure the kick and snare were really slamming. The API console at RAK can really take a beating, so I ran the signal levels very hot to tape, and this was one of the few songs where I also added a bit of compression—via a dbx 160 VU—to tape. In hip-hop productions, acoustic guitars are often heavily compressed and get treated like a synth sound, so we layered a whole bunch of acoustic tracks on 'Get Up' to emulate that effect. I also overdubbed this breathy thing, which I lifted from watching Puffy do ad libs over songs. It's this breathy 'huh' sound that I dropped into a verse and a pre-chorus to add a nice accent to the rhythm section."

For "Long Way Down," Dobyns threw a bunch of plastic knives and forks on top of a piano's strings.

"It's this crazy piano solo that sounds like a horn section," he says, "but it's actually an extremely distorted piano recorded with all that plastic cutlery in there."

A more conventional approach was taken on the piano part for "Chinese Blues," played by touring keyboardist Claes Bjorklund on a nine-foot Steinway, but it paid big dividends. Dobyns set up a matched pair of Neumann U87s about three feet from the open top of the piano—which was placed in the same room as the guitar amps. The signal leakage from the blasting amps into the piano mics expanded the sound so much that a planned string session for the song was cancelled.

The moody "Broken Mirror" swells with atmospheric room tones. "I knew this was a really dark song, so I planned to use room mics that could impart darker timbres to the overall sound. I also wanted to bring out this haunting snare tone, because Neil had released the snares from the head, so the snare sounded like a tom. I put a Chandler TG1 limiter on the Coles ribbon mic that I used to capture the room sound, and that gave the cymbals this great decay and a really nice presence—which also allowed the snare to be more hypnotic. I included more room sound on Andy's guitar, as well."

A double-tracked, 40-piece choir—one of the final parts recorded at RAK—is the centerpiece of the title track, which begins with Healy's Telecaster-and-AC30-driven guitar riff.

"We had the Crouch End Choir come in and do this massive part, like something out of *The Omen*,'" says Healy. "It's totally over the top."

The song "Friends" boasts a particularly wacky recording technique, as it utilizes two complete double-tracked performances.

"The demo of 'Friends' was so good that we had a hard time getting as good a performance in the studio," says Healy. "We settled on editing a couple of the best takes together. But when we listened back, *both* takes sounded so good that it was hard to pick one as the final take. Just to be daft, I suggested that Emery put one take on the left speaker, and the other take on the right. We listened back to that, and it didn't flam. Emery put the only overdubbed part—the vocal—up the middle, and made one of Andy's guitars slightly louder to become the lead part, and we went with the two-performance, stereo mix. When you're in the studio and that kind of magic happens—well, that's what it's all about."

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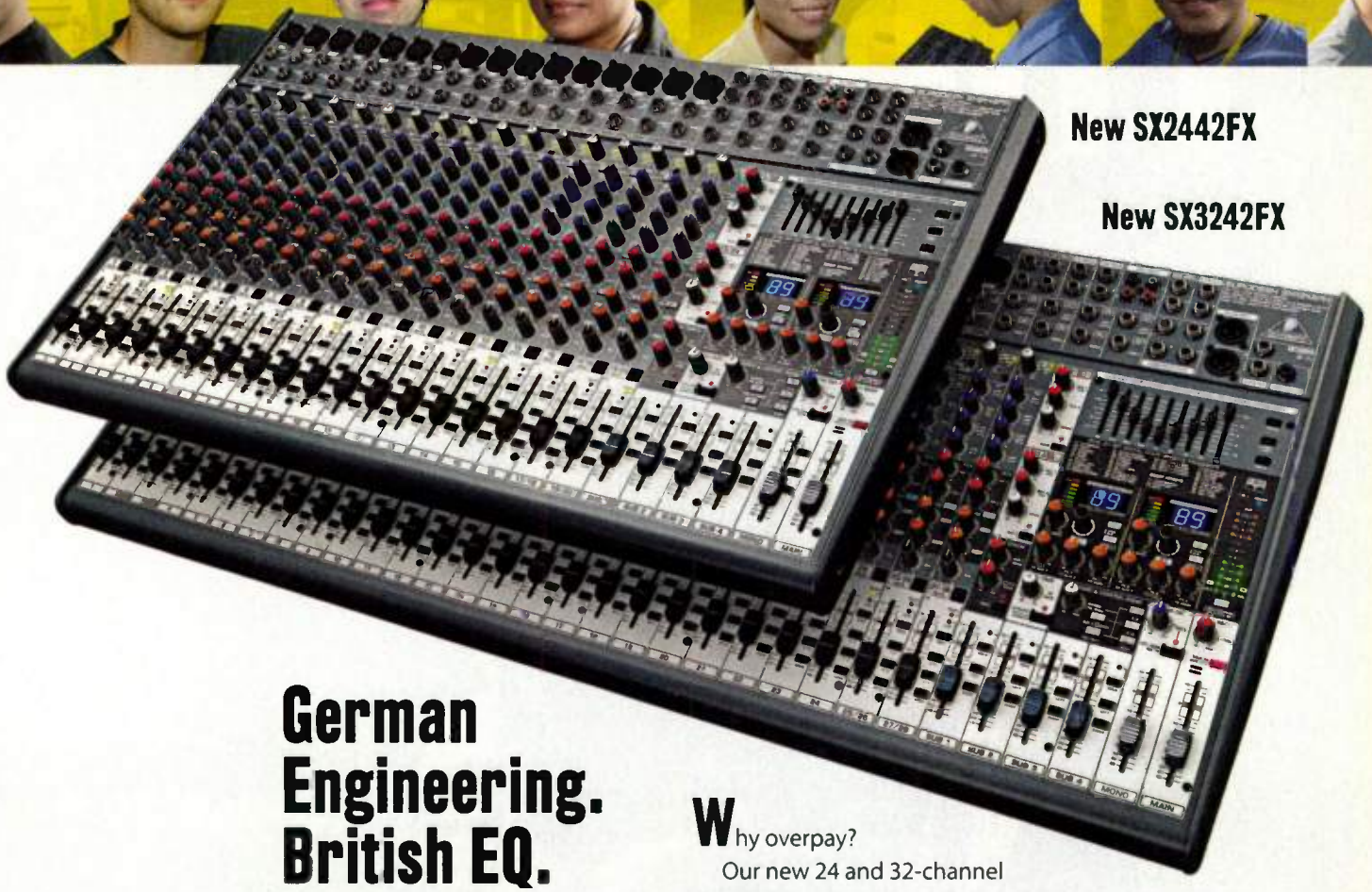

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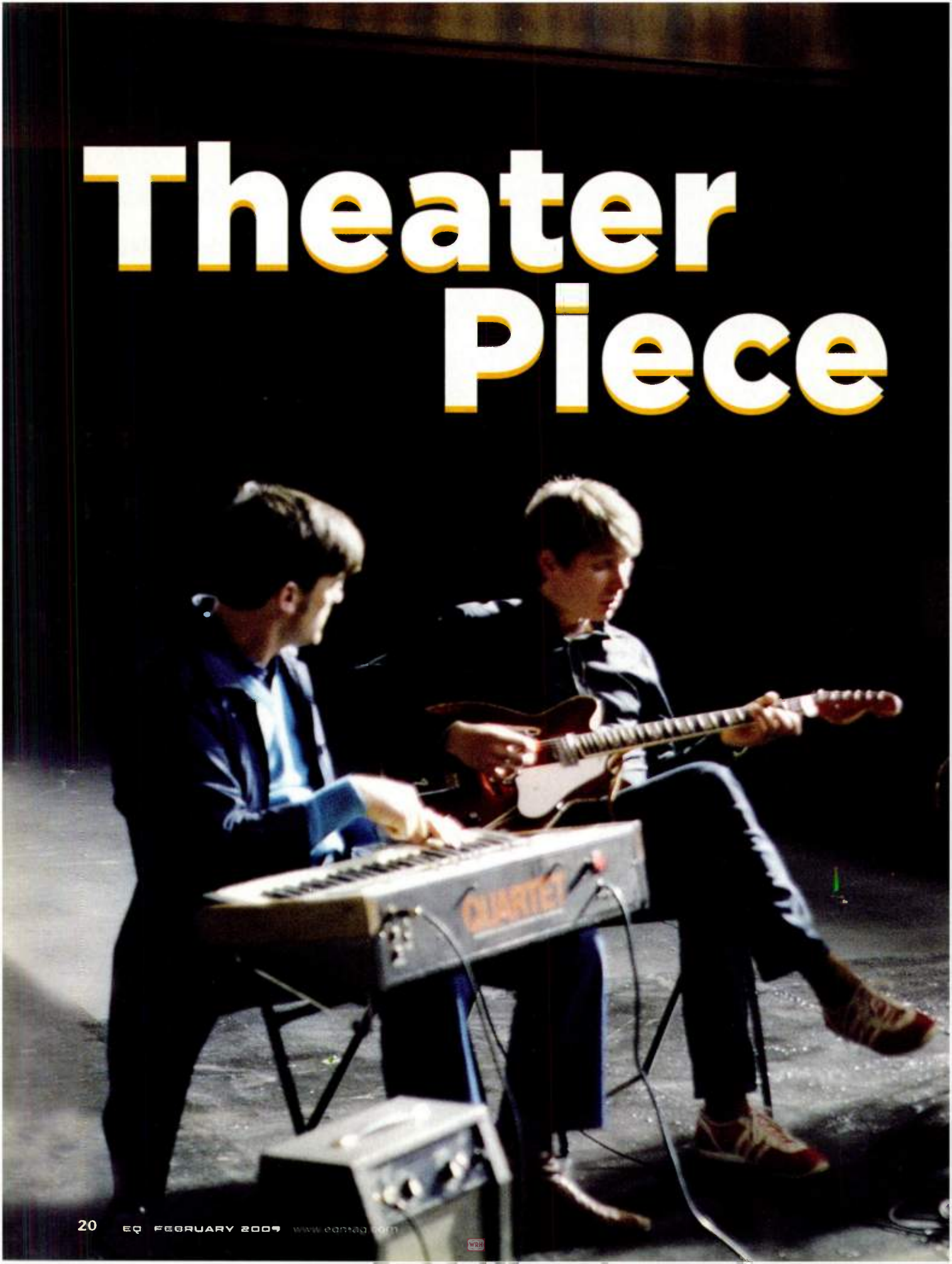
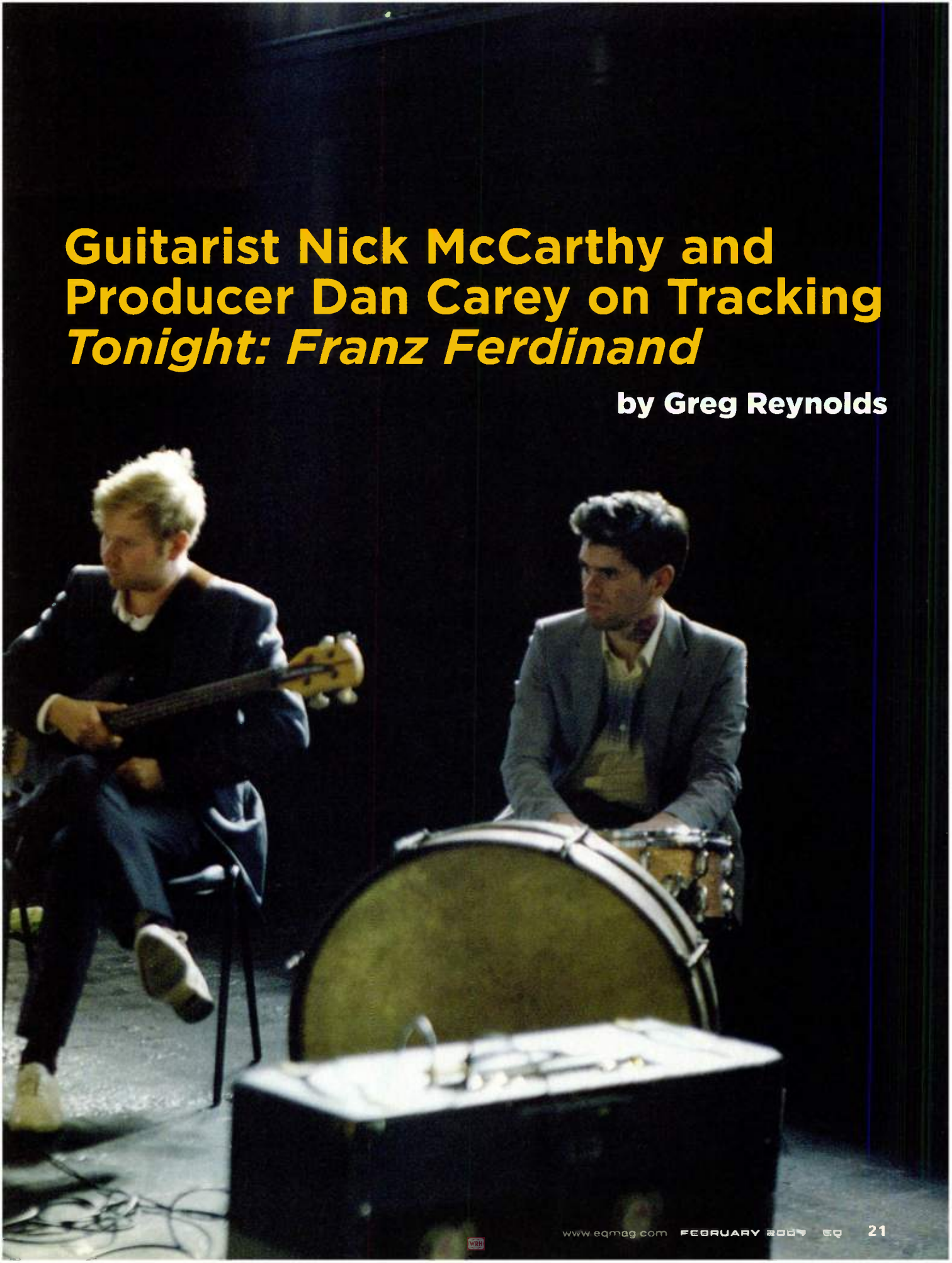


Guitarist Nick McCarthy and Producer Dan Carey on Tracking *Tonight: Franz Ferdinand*

by Greg Reynolds



THEATER PIECE

The goal was to capture organic sounds, and what better environment to surround yourself in natural ambience than in an old-school acoustic space—a theater?

For Franz Ferdinand's third album, *Tonight: Franz Ferdinand* [Domino], the band sequestered itself into its Victorian-era, rehearsal-space-turned-recording-studio in Glasgow, Scotland, with producer Dan Carey to alchemize its live-concert energy and finely tuned rehearsals with some studio wizardry. Comfortable in their own "home," and blessed with a bunch of sonically compelling spaces within the theater's architecture, the band members spent a lot of time seeking out the perfect tones, capturing the most exciting performances, and bathing everything in the sweetest ambient vibes. So, grab a drink before curtain call, find your seat, and thrill to the words of Carey and Franz Ferdinand guitarist/keyboardist Nick McCarthy as they detail the preparation and recording techniques that went into the making of *Tonight*.

Tell us a little bit about your new rehearsal/recording space.

McCarthy: We found this old town hall near the shipyards that was converted to a theater. It's kind of a rough place, but it's local, and it feels good to walk in there. It has a lot of character—like an old guitar. We started rehearsing there because it's incredibly cheap to rent, and, most of all, it has some amazing-sounding spaces: the stage, a small room underneath the stage, the hall, the corridors, and the dome. All are perfect for recording in.

Did recording in your own studio make *Tonight: Franz Ferdinand* a different experience from the previous albums?

McCarthy: Our last album was put together fairly quickly, so, this time, we spent a while writing, rehearsing, and fine-tuning everything. We knew we wanted to step away from the angular, jagged guitar riffs. We wanted to slow it down and smooth it out a bit in places, in order to allow the bass ample space to move around. It's definitely more of a rock album, but it's still danceable.

Carey: One of the main themes of the album was really committing to sounds. We spent ages and ages getting a sound, but once we got it, that was it. We wouldn't go back and record the song again. Also, we didn't want to get bogged down in recording five different takes of everything with loads of different miking techniques. We had to make sure that everything was just right the first time.

McCarthy: We spent about three months rehearsing the songs in the hall, getting to know the sound of the different spaces. Then, it came down to figuring out which songs—or which parts of songs—should be recorded in which space.

How did you end up utilizing the different spaces in the building?

McCarthy: Our favorite spot is underneath the stage, because it produces a dry, but warm R&B kind of sound to the drums. We did a lot of the basic tracks in there. Most of

Franz Ferdinand (left to right): Bob Hardy (bass), Paul Thomson (drums, percussion, and backing vocals), Alex Kapranos (lead vocals, guitar), Nick McCarthy (rhythm guitar, keyboards, backing vocals).

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THEATER PIECE

the overdubs were either amped or re-amped on the stage or in the hall—which acts as an enormous reverb chamber. The synths on "Dream Again" were re-amped in the hall. We used the massive dome for some stuff like the hand claps on "Send Him Away." We'd set up a mic in the center at ear-level, and get some really heavily concentrated reflections. The acoustics in there were phenomenal.

Carey: We didn't want to use any artificial reverb, so most of the ambience that ended up on the album was purely from the spaces we tracked in.

What console and recording system were you using?

McCarthy: We picked up an old Flickinger console a while back. It's an amazing old American desk. There were only a few of them built—one was made for Sly Stone, and one for Ike Turner. It's a really simple desk with big faders and big buttons. We like it because it has a really warm sound, and it's very easy to use.

Carey: The tracking was done on an iZ Technology Radar V Nyquist. Later, we brought the Radar system back home to my place, and we did a transfer of all the drums, bass, and guitars to a two-inch analog 16-track deck. Most of the overdubs were done on Radar and Logic, so we really moved among the three systems. Some of the tracks ended up with analog tape, Radar, and Logic all running together.

How did you lay down the basics?

McCarthy: As far as the playing goes, we'd often record the songs in sections. We'd start with the verse, and play it over and over like a loop until we got that groove. When you do rhythm-based things, it just suddenly locks after about five or six minutes, so we'd take the best takes from each section, then move on to playing the chorus, and so on.

Carey: When you stand in the room as the band rehearses, it sounds amazing. They're super-energetic players, and very cohesive, as well. I found that when we separated everything and gave everyone headphones, there wasn't as much of a connection between the four of them. So we really tried to find ways to capture that kind of "rehearsal" feeling on the recording.

Did you track with everyone in the same room, then?

Carey: We didn't want to record each song the same way, so we took several approaches. The most extreme route we took was to put the drum kit in the middle of the room, the bass amp behind the drums, Nick's amp next to the floor tom, and Alex's amp [*co-guitarist Alex Kapranos*] next to the hi-hat. Then, we'd find the best position for one mic—usually a Lomo 19A series—and place it about a yard away from the kit. As long as all the levels were right with the amps, we picked up a really great sound in mono. We used that on a few songs, or for parts of songs.

The whole band on one track?

Carey: By the time we transferred the audio to the 16-track machine, it would have the mono Lomo track, a kick drum overlay to support it, and maybe a ribbon mic on one of the guitars. So we'd bring that kind of "three track" recording into analog, and then overdub more guitars and synths using either Radar or Logic. Usually, however, we were miking things a bit more thoroughly. Some of the other songs we did with the whole band in one room had perhaps three mics on the drum kit, one mic on each of the amps, and the bass was sent to an amp in the next room. Of course, a monitor was set up so the band could hear the bass. Also, we did some tracks with the band in one room, and the amps set up down a corridor.

How did you typically mic up Paul Thomson's kit?

McCarthy: We wanted to mic the kit like you would hear it from the audience's perspective, so everything was miked from the front and underneath. Sometimes, we'd have an Electro-Voice RE20 on the kick, and we'd add a Yamaha SKRM-100 Subkick if we needed the extra punch. Then, there was either a Shure SM7 or a RE20 positioned beneath the snare, and a Neumann KM184 on the hi-hat. If we wanted a stereo sound, we'd put some Lomo mics out in front.

Carey: That method was used mostly when we recorded underneath the stage. On one or two tracks, we put the drums in the hall, and used large baffles to completely encircle the kit. We placed some baffles overhead, as well. The baffling wasn't enough to make it seem as if the drums were recorded in a small space, but it did

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THEATER PIECE

knock back the natural reverb a bit. You see, we weren't going for much of a "big" drum sound, as much as we were trying to capture a different reverb for the snare drum. A snare doesn't sound like that in a normal-sized room, and we ended up getting a much better "low-level" reverb sound that way. We also did a lot of overdubbing of the drum kit. If you listen carefully, about half the songs have double-tracked drums.

How did you incorporate the drum machines?

Carey: Some of the songs had the drum machine playing through a bass amp situated in quite a big echo-y conservatory space. We'd mic the bass amp with the same three mics we used for the drum kit, and we'd set them at different points to capture different frequencies coming out of the speaker. Then, we'd filter each of the mic signals completely differently, so what you'd get back wouldn't be a typical drum sound—more like a phantom kick, for instance—that would fill-in the entire frequency spectrum a little more. Another thing we'd do would be to connect the machine's kick drum output to one amp, the snare out to another amp, and the hi-hat to another amp. We'd position those amps like a drum kit would be positioned, and then we'd mic the amps. We basically built this kind of "guitar amp drum kit" that sounded really cool and unusual.

The bass is a prominent force throughout the album. It sounds as though it was amped, but did you use a direct box, as well?

McCarthy: We actually used a Kalamazoo Model 1 guitar amp for a lot of the bass.

Carey: We tried not to record the bass with a DI, just to reamp it later. Bob [Hardy, bassist] gets great low end with his Les Paul bass or Rickenbacker running through an Ampeg amp, so we were just looking for a thin sound with some bite to add on top of the lows. For that tone, the little Model 1 was miked with a Royer R-121, and routed to a Shadow Hills GAMA 8 mic preamp and a Universal Audio LA-2A. That combination—a small amp facing a small mic—often made a much bigger sound than the Ampeg alone, and we frequently ended up using just the Model 1 track.

What about guitars?

McCarthy: They were recorded very loudly.

Carey: The guitars were pretty consistent. Alex would usually play his custom Tele through either a Carr or a Selmer amp, and Nick's Les Paul Jr. would be going through a Carr, as well. We'd have either a Royer R-121 or a Coles 4040 positioned tight on each of the amps, and then routed through either the Shadow Hills or the Flickinger preamps if we wanted to get a more grainy type of sound.

The synths are bouncing around all over the place—how did you track those?

Carey: The band has some amazing keyboards, and they are always the start of the sound. On "Ulysses," the big synth riff that comes in at the beginning is a Russian Polivoks—a Soviet-era copy of a Minimoog that's really mad sounding. The Polivoks was used quite a bit. We started off by amping most of the synths, but they sounded too organic, and too much like a guitar. I wanted them to sound as electronic as possible—a little out of place, even. So, in general, the synths were taken direct through a Culture Vulture to get that kind of distortion. We also did some very extreme parametric EQing with the UREI 545 to give the synths an intense midrange sound. Some parts have a boost around 6kHz with a really tight Q to accentuate the electronic-ness. After that, we'd either re-amp the sound in the hall for a big reverb, or fatten up the synth parts with delays such as the Blue Coconut Echoverb Tape Echo.

McCarthy: Sometimes, we would connect the output of the synths to a filter, and someone would manually tweak the filter in real time as we were tracking. Or, we'd trigger a sample of the keyboard, and feed it back into the filters to add the desired tonal effect. These techniques turned out to be so much cooler than just using any generic synth preset. The whole idea was to get the right sound at the beginning of the signal chain.

What about the acoustic piano parts?

McCarthy: The piano recordings—like at the beginning of "Bite Hard"—were done with the piano in one room, miked from the back, and then we fed the signal to some guitar amps set up in another room. The recording would

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THEATER PIECE

only have the amps—not any original signal at all—and that gave the piano sound a dirty kind of warmth.

How did you track Alex's vocals?

Carey: Most of the vocals were done in a fairly tight space. My studio has a fairly big room with one corner that has quite a dead sound, and we'd normally track the vocals from there. Alex used two mics—a Wunder Audio CM7 and a Sennheiser MD441. We started off doing a lot with the CM7, but we ended up using the MD441 more, because it's a handheld, and it was just more fun to record that way. We put a makeshift pop screen on it, and routed it through the Shadow Hills with the output transformer set to Iron. On some stuff, I'd get quite mad with echoes and effects—like on "Can't Stop Feeling"—and have him sing off them. Overdubs and doubling would always be done on the CM7.

There are a lot of backup vocals. Were those done together or separately?

Carey: Backup vocals were a mixture of things. Paul sounded good on the Electro-Voice RE20, and Nick used a SM7 or a SM58, depending upon the part. On some of the gang vocals where everyone sang at the same time—like on "What She Came For"—we either used the 441, or maybe a Neumann M149, or perhaps the CM7 set to Omni with everyone standing around the mic.

What's your view on using outboard gear during the tracking phase?

Carey: If I knew that something was going to need a little top-end boost, I'd add that on the way in, but I'd never do anything super extreme. As far as compression, I find that compressing stuff such as drums or guitars only makes them sound softer, so I try to leave that until the mix. On drums, we'd sometimes use kind of a parallel compression, where you have your direct signal, but also a fairly compressed signal that blended in slightly with the direct tracks. Most of the stuff was compressed at tape transfer, and we'd sometimes put it back into Radar again with additional EQ or compression. I'd compress the bass a little with either a RCA or Shadow Hills Master Compressor, set to a fairly slow attack time, and never more than 3dB of gain reduction. Maybe there'd be one or two places with heavily compressed guitars for effect. I'd rather compress things lots of times very gently, than once really heavily. By the time a track is mixed, it might have gone through three or four compressors.

The album is no stranger to phasing effects. What was your technique?

Carey: Sometimes, we'd take sections of the basic tracks, and feed the signal back into a guitar amp. Then, we'd take two mics—one fixed about a yard away from the speaker, and we'd manually move the other one slowly from about six feet away, just past the mixed mic, and right up to the speaker. When you mix those two signals together in mono, you get this amazing phasing effect. When the mics come together you get nothing, but there's a really pronounced swooshing sound as the moving mic approaches the speaker.

We also did a pretty weird thing on one or two songs where we used one of those Little Labs IBP analog phase-alignment tools to process three different mics—one mic positioned to capture the bass amp and the back of the drum kit, one mic placed near the guitars, and the last one positioned as a room mic. We'd play with the phase relations in the IBP to get more bass or more midrange. It was just sort of this strange filtering effect.

What were the most memorable recording techniques you used during the sessions?

McCarthy: I think the coolest one was the time I climbed up into the rafters, and dropped a mic and cable down a few yards so that we could swing the mic around a guitar amp. It took several hours to get it right, but we got this really cool Doppler effect as the mic moved around the amp. It appears on the chorus of "What She Came For."

Carey: We used a fair amount of spring reverbs—like on "Send Him Away" to get a kind of King Tubby sound—and our main spring reverb was a toy Slinky. We took one of those, attached a drive speaker to one end, and put two "pickup" speakers on the other. Then, we fed the Slinky signal to a Fender amp, and miked the amp's speaker. That technique was pretty amazing.

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Steve Lukather.

STEVE LUKATHER'S 7 WAYS TO TONAL BLISS

by Brian D. Holland

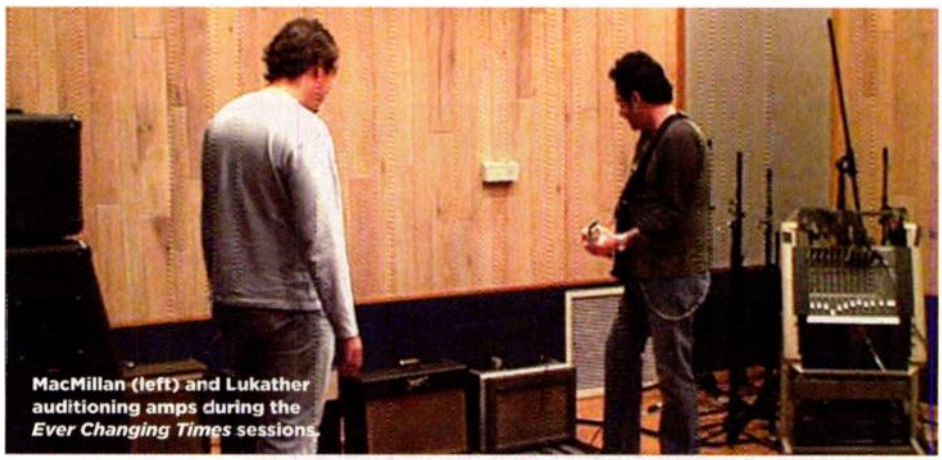
Known for its '70s and '80s classics such as "Rosanna," "Africa," "Hold The Line," and "I Won't Hold You Back," Toto was launched by a group of top session musicians whose ability to blend pop rock melodies with progressive instrumentation was quite innovative for the time. A significant member since its inception, guitarist Steve Lukather brought Toto into the 21st century, finally putting the band to rest in June 2008.

Besides his years with Toto—as well as his numerous tours with a variety of artists—Lukather's talents have adorned hundreds of recordings. With a list of credits too numerous to mention, the multitalented musician, producer, arranger, songwriter, and vocalist has worked with some of the most notable engineers and producers in the business. Because of those experiences, Luke was not about to completely trust his own engineering chops while making his most recent solo release, *Ever Changing Times* [Frontiers]. For that, Lukather entrusted much of the sound sculpting to Grammy-winning engineer/producer Steve MacMillan, who worked on Toto's *Minefields* (1999), *Through the Looking Glass* (2002), and *Falling In Between* (2006), as well as tackling projects for Lionel Richie, Supertramp, Rod Stewart, Seal, Celine Dion, and Kelly Clarkson.

Although the project brought two friends together, it wasn't a situation where the duo completely defaulted to the tried-and-true studio techniques they had used in the past. The *Ever Changing Times* sessions were more of a "collaboration" between trusted old-school methods and processes that opened up some new directions and new sounds. Here, Lukather and MacMillan discuss some of the techniques they used to track perhaps the guitarist's edgiest and most natural guitar tones to date.

DON'T REHEARSE

Lukather: The five-piece band we used for the album was all recorded live in the same room, and we didn't rehearse, because I don't believe in rehearsing for records. You can rehearse the magic right out of stuff before you go into the studio. I'm of the old school, and I believe in sitting in the room with a bunch of musicians and capturing the interplay that happens. As a result, I like to say the tracks turned out "perfectly imperfect," and that's what gives them the vibe and energy. You know, for all the crap Toto took for being soulless, we



MacMillan (left) and Lukather auditioning amps during the *Ever Changing Times* sessions.

RICK SUCH

played all together in one room until we got a take. Today, a lot of guys record one instrument at a time to make everything perfect. What's up with that?

DUMP YOUR COMFORT ZONE

MacMillan: I told Luke, "Forget about the past, just be yourself, and shut up and play." I also nagged him into exploring more organic, vintage tones.

Lukather: I *needed* somebody to pressure me into doing something different. I called Hollywood Rentals, and I said, "Send me all the weird stuff—the silly little Supros and Magnatones and whatever—and all the vintage AC30s and Marshalls." Then, during the sessions, I let the amp determine how I played, because you do play differently when you plug into a different amp. That, in turn, inspired all the interesting guitar sounds for the album. I used a Radial ToneBone for overdrive here and there, but the basic tone is my Ernie Ball/Music Man Steve Lukather Signature Model plugged direct into an amp. Well, I did plug into an ISP Technologies Vector SL subwoofer to get a mammoth sound out of the tiny amps, but any effects you hear on my guitar were added at the mixdown by Steve. I loved being able to just plug in and play, because, you know, I'm so sick of being blamed for that '80s over-processed rack sh*t. That was not my fault. It was all new back then, and the producers I worked for asked for those types of sounds. It used to kill me when I'd see some effects unit with a "Lukather" patch, and it would be the cheesiest, most f**ked-up sound in the box.

MacMillan: For heavy guitar tones, I'm a big fan of Royer R-121 ribbon mics. I also placed a Royer SF-12 ribbon out in the room, and about eight feet back from the amps. I find that mic captures a slightly rounded sound with somewhat compressed highs. It's very effective for getting rid of the nasty edges to guitar tones. I'm still a big fan of positioning a Shure SM57 close to the speaker cone, and I've also found that an Audix I5 works just as well. I miked the ISP subwoofer with either a Sennheiser e602 or a Shure Beta 52. I didn't want to have a lot of high frequency leakage into the subwoofer tones, and those mics naturally roll off the high end. I'd usually record all of the mics, and then decide which tracks—or combinations of tracks—to keep later. Quite often, it ended up being the combination of the Royer and the Audix.

GIVE UP

Lukather: I wasn't interested in doing a million takes. If a solo didn't work—either because I didn't have the right sound, or because I wasn't inspired at that moment—I'd just move on. A part either works or it doesn't. You can't batter it into submission, or force inspiration to save you. It's always better to just surrender, and then come back later to give it a go with fresh ears.

GO EASY ON THE LEVELS

MacMillan: When recording to Pro Tools—even though, as a rule of thumb, I use my ears, rather than watch meters—I generally like to keep the meters about half way up. Everything usually sounds great there, and I like having the headroom available for the final mix. By keeping everything at about 50 percent, my mix comes together a little easier, because I don't have to pull levels back all the time.

SEEK COUNSEL

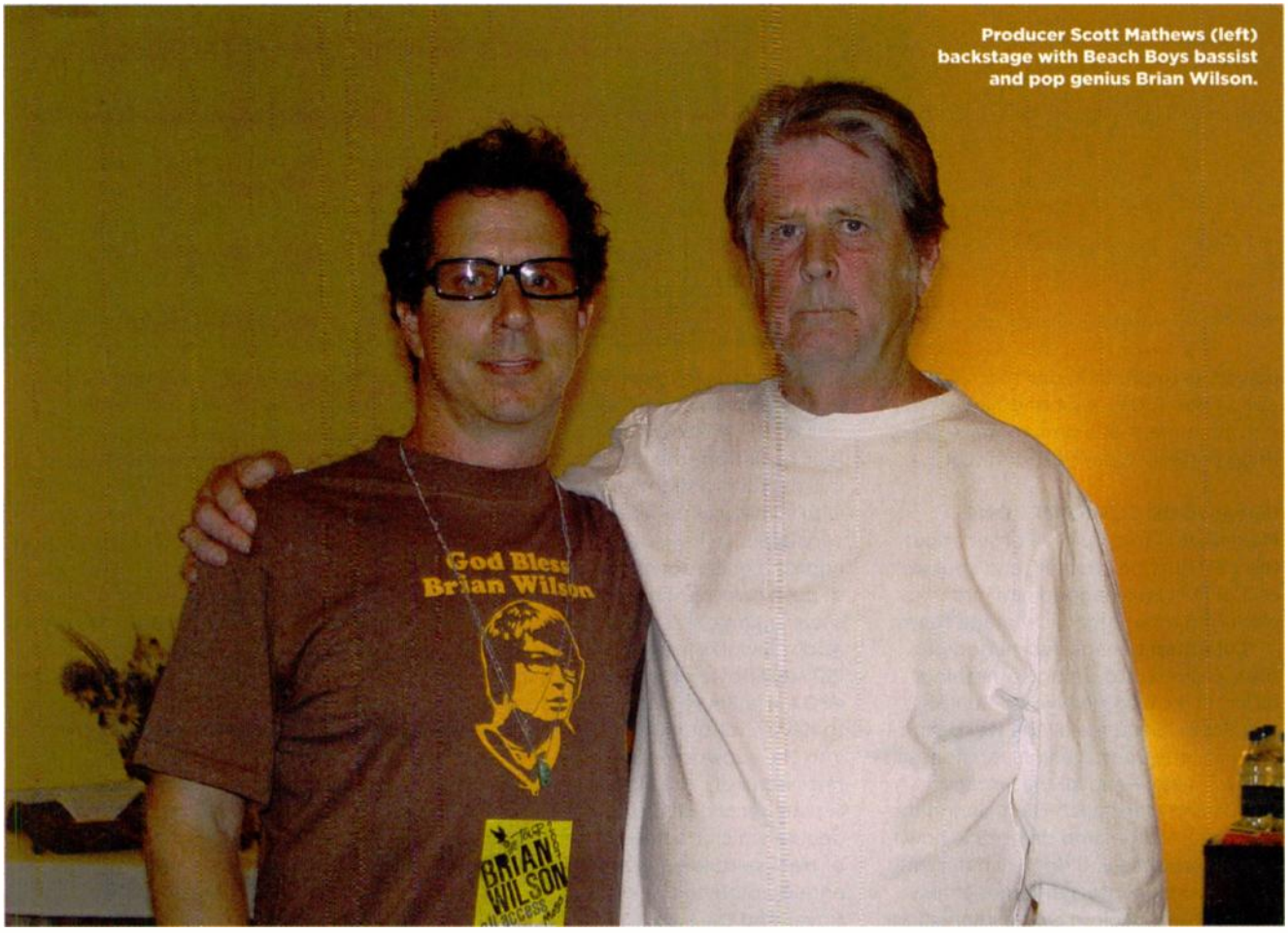
Lukather: It's great to have someone in the room with you, so it's not just you deciding what is good and what is bad. There was a lot of stuff I probably would have thrown away that ended up making it on the record. Steve would be like, "No, man. That's really good. I'm telling you—keep that part!" After I lived with it for a while, I'd realize he was right. It's always good to have at least a second set of ears in there. That's why people have producers.

WATCH, LISTEN, AND LEARN

Lukather: I've learned as a closet engineer to keep my eyes open to how different people work—whether it's miking techniques, or how they hit the EQ. For example, I've found the best engineers won't boost frequencies. Instead, they'll find the ugly ones, and pull them out. This approach creates space—which is important for a dynamic and exciting mix—rather than have every boosted frequency fighting for prominence in the mix.

BEGIN WELL

Lukather: First off, what's going into a microphone has to sound good. You can't take a crappy-sounding amp and expect it to magically sound good just because you put a sexy microphone in front of it. The quality of the source sound is critical. After that, it's about the engineer *enhancing* the source sound. EQ



Producer Scott Mathews (left) backstage with Beach Boys bassist and pop genius Brian Wilson.

6 THINGS EVERY SESSION BASSIST MUST KNOW

by Scott Mathews

In the recording studio, session players know the song is king, and they are all there to serve it with whatever is needed. Every instrument plays a part, largely or subtly in the big picture of the overall end result. When it comes to bass, however, the bass part is *always* a large part of the picture. In most cases, the bass instrument is the bonding element between the drums and all of the other musical instruments involved. The "bottom line" is a very big deal.

When approaching any recording session, there are certain basics every bassist needs to have in their gig bag of tricks. Here's a six step "must have" when it comes to those bass-ics.

COP THE STYLE (WITH A SMILE)

Some musical styles and audio-production concepts may be out of a player's comfort zone. Let's say a particular bassist's forte is fingerstyle, and the track is calling for a very percussive attack that only a pick (or perhaps a fingernail) can provide. In that case, a real pro session player will be able to switch right into the groove with a pick. Conversely, the same holds true for a player who is accustomed to working with a pick only. That won't cut it on a recording that needs a softer, subtler sound.

While I often work with some of the world's most famous bass players, I still bump into those who can only approach the instrument their way. While it's true that their way may be genius, it doesn't mean that approach will fit into any and all

recording sessions. You have to be willingly adaptable to the producer and/or artist if you want to succeed in the competitive world of session players. Never forget that producers hire the people they want to be around. If there is a cool player who has a great vibe, is fun to work with, and who genuinely wants to do what is needed, that player will always get the call for the gig before the difficult, prickly pear player who may be "better" than everyone else, but who brings the vibe of the session down. Life is too short, and sessions are even shorter!

MOVE INTO THE GROOVE

We all know different styles of music will demand different skill sets from players. One important element to any successful bass session is for the bassist to relate to the material, find the groove, and be able to complement the rest of the recording. How do you do this? It's easy—just *listen*. Find out what makes the song tick. Once the song is heard in its simplest form—and the melody and chord structures are understood—the most obvious first step to establish groove and feel is to lock into the drum pattern. The bass may not want to play on every single kick beat, but the bass player *does* need to know what that basic pattern is. To get inside the essence of the song even further, do what the world's most recorded musician—the great drummer Hal Blaine—does. He always asks to see a set of the lyrics to understand what he's playing. Deep.

INTONATION CALIBRATION

It may not be sexy, but it is of supreme importance to make sure one's bass is set up well and has perfect intonation. The neck, the bridge, the frets, the nut—everything needs to be in great shape to achieve correct intonation. Unfortunately, that can mean strings, too. I only say it's unfortunate, because old, dead bass strings can sometimes sound perfect for a certain approach, and I am a big fan of that sound (think James Jamerson from Motown, or Duck Dunn from Stax). True story: Near the end of Jamerson's career, people thought he was losing his ear, because his intonation was off. But, as it turned out, he had purposely never replaced his bass strings. So, as the years went by, his sound got even better. Sadly, his tuning didn't.

If the bass is out of tune, everything that is piled on top of it is going to be off. Not many people are aware of it, but most singers tend to find their pitch from the bass. It is the main instrument that firmly resonates the foundation of pitch.

Back in the self-indulgent early '80s, I spent a good three days (and a lot of money) trying to fix a track that had been cut by a legendary San Francisco band. The singer was positive the guitars were out of tune, and insisted that all of them be replaced (and there were tons of them). Still, the track was out. We even retuned and replaced the piano to no avail. It was only when we removed the bass track that everything fell together. Ah ha! So we had to fly the bass player back to San Francisco from the East Coast to redo his well-played, but useless bass part, and make the seemingly endless nightmare stop.

NOWHERE TO RUN

The studio is a place that will expose your bass playing and sound for better or worse. It is like a big microscope that leaves little room for error. On stage, one can get away with a lot more imperfections, because the energy and showmanship can overshadow the nuance of some of the playing, as well as unwanted noises. The studio is about control and consistency. Developing accuracy on the strings so that your bass doesn't have harmonics or other sounds ringing that cloud up the bottom end is crucial. Open strings commonly cause this problem. Pay close attention to cutting off notes that may find their way into your playing. At the same time, you don't want notes being too muted, either. Both of these unwanted scenarios make it very difficult to mix the final product. If the bass notes are not defined in an even and deliberate manner, it can throw off the whole balance of the recording.

THIS OR THAT

Knowing what is needed is usually the best way to get things done on sessions, but it's not *always* as easy as that, so options are always helpful in the recording process. Sometimes, experimentation is the only way to come up with the secret sauce. To that end, bring two or three different basses (if possible). Maybe it's a classic Fender type, an active modern type, and a fretless. These basses all sound very different, and bringing in an unexpected color can help a song take shape in a new and interesting way. As for amps, you may want to ask the engineer or producer before packing the car. Many sessions don't require bass amps, because the bass is taken direct. However, if you get your signature sound by using an amp, you'll want to have it with you. Also, always bring along a good tuner, as well as any stompboxes that provide unique effects that might enhance your role in the session.

PITCH IN OR BUTT OUT

In order to help the artist and producer achieve what they intend from a session, it is important to determine how much they are open to suggestions. Don't just start playing anything that comes to mind. True, a good producer will likely inform players of the track's vibe and creative goals, but if not, it's always good to ask if there's a certain style, sound, or approach they are looking for. This is very easy to do, and it shows a lot of respect and communication skills. In the event they want you because your personality is what's needed, don't hold back. Suggest hooks in the bass line, and any other helpful information that can be used to support a great track. Look at this as an opportunity to show your gifts. Don't worry that you may be more productive to the session than the actual producer. These things happen, and I can tell you first hand, that this is how many a great career begins. Good, ambitious players should always be open to using session work as a ladder to the producer chair for projects down the road.

Check out producer Scott Mathews at www.scottmathews.com.

Fig. 1. Live's Impulse drum instrument is playing back a drum part; a Compression MIDI Velocity effect has been added before Impulse to even out the MIDI velocity values.

WRITE SONGS *FAST* WITH MIDI AND DAWS

by Craig Anderton

I'm beginning to feel "writing in the studio" is an oxymoron. In fact, it seems that *writing* a song and *recording* it are two totally different activities, and need to be treated as such.

What got me thinking about this was how easily I could write songs when just sitting down at a piano or guitar, yet how difficult that process became when sitting in front of a sequencer. But I've learned it doesn't have to be this way.

So let's investigate what I call "fast tracking"—using a sequencer/DAW in a way that's optimized for writing, not recording or editing. With this process, I finally feel I can write on a computer as easily as on an instrument. Of course, different people approach the creative process differently, but I think I'm typical enough that many of you will find the following tips helpful.

GET UP AND RUNNING ASAP

Inspiration comes and goes *fast:* One way to prolong the state of being inspired is to exploit that inspiration as soon as it hits. Do everything you can to speed your computer's startup time (such as periodic defragmentation), and remove all of those little memory-hogging programs that load at startup but you don't really need.

Next, create templates and layouts so you're not just staring at a blank screen. Templates deserve an article of their own, but there's nothing like having an "instant environment" that's optimized for writing, with instruments, patterns, track assignments, and so on ready to go. If you can't start laying down tracks within 30 seconds after opening your DAW of choice, there's a problem.

START WITH MIDI DATA, NOT AUDIO

Sure, a MIDI piano probably won't sound as good as that 9 ft. Bosendorfer you picked up on eBay for $200 (we can dream, right?). But when writing, keep a piece of music as malleable as possible. You may need to change key or tempo as the piece takes shape, and while it's possible to make these kinds of changes with digital audio thanks to time and pitch-stretching, MIDI simplifies the process.

USE A SOFTWARE "WORKSTATION"

Quite a few plug-ins (like IK Multimedia SampleTank 2, Digidesign Xpand, and samplers such as NI Kontakt, MOTU MachFive, Steinberg HALion, etc.) are essentially multitimbral workstations with a boatload of sounds. Having a template that rewires Propellerheads' Reason into your DAW is another excellent option. But even a simple plug-in—like a basic General MIDI instrument—is usually all you need to sketch out a tune.

The advantage to using a single multitimbral plug-in is that it's really fast to create tracks: Insert a MIDI track, assign it to a channel in your plug-in, assign a sound to the channel, and press record. Although you could create a template with a variety of instruments assigned to a variety of tracks, a multitimbral instrument simplifies matters.

THINK SCRATCH TRACKS

The object is to write a song, not to play a bunch of perfect takes. A good song in the conventional sense consists of memorable elements like melodies, strong lyrics, and a flow—not nailing the perfect bass timbre. You can always clean up your parts later, but when you want to lay down a part using a particular instrument, just do it. Don't agonize over the sound quality, or your playing. Copy and paste to create "placemarkers" rather than play all the way through. Of course, most of this won't make the final cut, but so what? The

object for now is to build a *song* and *arrangement,* not a *recording.*

AVOID EDITING AS YOU GO

The single biggest inspiration-killer when writing on a DAW is editing. Editing is a left-brain activity, not a right-brain, creative type of endeavor. Laying down a part, then trying to perfect it, is a sure way to have inspiration take a hike.

For example, consider MIDI velocity levels. When I'm writing in Ableton Live and doing a drum part, because I play parts in rather than program them, there can sometimes be undesired velocity variations between hits. Rather than tweak velocities, I just add a Velocity MIDI effect set to compression (Figure 1). This evens out the note velocities, but because the original data is unchanged, if the part ends up being a "keeper" I can always remove the FX later and do more detailed velocity editing.

Remember, what makes a great song is not great tweaking; that just makes a great song *sound* better. Concentrate on what matters most—the emotional impact on the listener.

WHAT ABOUT VOCALS?

If you can get down some key lyric ideas and a melody line, that's fine. Don't have lyrics for the second verse? Hum the melody, or just say nonsense syllables. You can always fix it later. Even if you only have lyrics for a couple lines, get them down and move on.

KEEP TO THE ESSENTIALS

All those "ear candy" parts—the cool double-time shaker, the melodic bells that come in during the solo, and so on—should be added only when the core tracks are down. Ear candy can be another distraction that, unless it's an element that's vital to the song, should be left for later. And don't even think about adding reverb, EQ, etc. The only reason to add a signal processor is if it's an essential element to the song, like a tempo-synced delay that's mandatory for the particular rhythm driving your tune.

THE LAST WORD

Although I've given some specific tips here, the main point is *attitude.* Once you shift your brain so that it understands the difference between the *writing* process and the *recording* process—and I do believe these are indeed different animals—that's half the battle. The other half is having the discipline not to get sidetracked during the writing process. Since figuring this out, my DAW is now as good a songwriting device as an instrument. In fact, in many ways, it's even better. EQ

Terry Stirling.

MATT SORUM'S RECIPE FOR ROCKIN' POCKETS

by Roberto Martinelli

In addition to being one of rock's iconic drummers (Guns N' Roses, The Cult, Velvet Revolver), Matt Sorum is also an accomplished engineer and producer with his own production company (Orange Curtain) and tracks for Poe, Candlebox, Ronnie Spector, Little Milton, Sen-Dog, and others under his belt. His most recent production project was for Los Angeles "youth rock" band, Drive A—a gig that prompted Sorum to share some miking techniques, recording philosophies, and studio drummer bummers that can help *EQ* readers track bigger and better drum sounds.

LAY DOWN THE LAW

"Terry Stirling—Drive A's drummer—has a lot of chops," says Sorum, "but I told him to play only what was needed to drive each section of a song. He could have that one fantastic fill, but that was it. When I was young, I do remember being a lot flashier than I am now, and that's because I learned to play for the song, rather than for myself."

BIG ROOMS RULE

"I learned about miking drums from Mike Klink and Andy Johns, who had recorded my favorite drummer, John Bonham. I was inspired by all those stories about how Led Zeppelin recorded in castles, and how bands such as U2 and the Red Hot Chili Peppers recorded in houses, so we decided to record Drive A in a big house out in Malibu. We put the drums in a large living room with 25-foot ceilings, which was pretty cool, but the problem was that the reflections from the walls made the cymbals sound kind of harsh. I had to go around and place some foam in different areas to compensate."

STEAL MY MIKING METHOD

"For the Drive A project, I close miked all of Terry's toms with Sennheiser MD451s—which I always used back in the Guns N' Roses days. I double-miked the kick drum with a Shure 91 inside, and a Røde Classic II outside. On the hi-hat and ride, I used a Røde NT5, and for the snare, I used Shure SM57s for the top and bottom mic positions. To capture the room sound, I positioned two Neumann TM103s in a kind of stereo spread, and a Telefunken 251 to pick up a mono image. In addition, I did a trick I learned from Brendan O'Brien [producer of Bruce Springsteen, AC/DC, Pearl Jam, Velvet Revolver, and others], which was to position a Telefunken AK47 over the drummer's shoulder as a kind of 'effect' mic. For slower-tempo tracks, I also put a Telefunken AK47 in a hallway that was down a staircase. That was my 'Bonham' trick to get a delayed and distance ambience. When [mix engineer] Chris Lord-Alge mixed the Drive A record, he'd bring in that mic on the tom fills to make things explode."

GO NATURAL

"I spent a lot of time during the tracking phase getting a natural drum sound, so I didn't put any noise gates or effects on the drums. In fact, most of the reverb you hear is from the room the drums were recorded in. There's just some slight compression on the kick and snare, although I hit the mono room mic pretty hard with a Urei 1176 compressor to get the

crunchy sound I like. And because I fear the ball getting dropped in the end, I called Chris before he mixed the Drive A record to let him know that I wanted the drum sound to remain as natural as possible. Thankfully, he thought the drums were tuned well and sounded great, so he didn't over-EQ or over-process things."

LET DRUMMERS BE THEMSELVES

"I believe that to get the best performance out of a drummer, you have to make the *drummer* feel good. If that means he or she likes playing with the front head on, then that's what you should do. But I've had some run-ins with name producers who tend to like certain techniques. Bob Rock, for example, took the head off my bass drum, and we got into a bit of an argument, because I said I wanted the head left on in order to mic the front head for added resonance. Mike Klink likes to isolate the kick drum by building a tunnel of blankets around it. I like how the kick drum sounds in the room, because you tend to get more low end. Some guys have even built a kind of box around the hi-hat in order to keep it from bleeding into the snare mics. Of course, most drummers hit the cymbals so hard that no amount of baffling or boxing is going to keep the cymbals from bleeding into the other mics."

ALWAYS ENVISION THE MIX

"When I do a session, I like to track drums with the final mix already in mind. In other words, I don't like to put stuff on tape that doesn't sound right from the get-go. That's what they had to do back in the day—before multitracking and DAWs. Drummers almost had to 'premix' themselves back then, because it wasn't like you had unlimited tracks of individually miked drums to process and tweak. The drums had to sound right in the room. I heard that Ringo used to put his wallet on the snare drum to dampen it during Beatles sessions, but when I talked to him, it turned out it was a pack of cigarettes. Still, the point is that he was thinking about the final drum sound as he was playing."

FOR ROCK, MAPLE IS KING

"I've never gotten into the dynamics of different ply thicknesses for drum shells, but I can say that, for rock and roll, maple drums are the best. I also like the maple reinforcement rings that appeared on old Ludwig sets. The rings put more wood against the drum skins, and they also dampened the sound in a very natural way. I'm a Ludwig endorsee, and I talked to the company about bringing those rings back, and now they're on the Legacy Classic Series drums." EQ

COMPRESSING VOCALS

by Jonathan Stars

My first ex-wife hated it whenever I bought any musical equipment, because that meant she wouldn't be able to spend the money on herself. Never mind that I was going to be a famous recording artist some day, and share all the loot with her. (Ha! I guess I showed her!) One time I bought a limiter/compressor (L/C), recorded my vocal through it, and played her the result. When she said it was the best piece of equipment I ever bought, I knew I was really onto something. Honestly, that's how much difference it made to my recordings—and how much it can make to yours. Fortunately L/C plug-ins come with most recording software, and they're really not that hard to use.

TECHNICALLY SPEAKING

A compressor controls a signal's volume automatically by lowering the level on peaks, and raising the level during quiet parts. This produces a smaller level change at the output for a given level change at the input. For example, if increasing the input level by 4dB yields an output level change of 2dB, the compressor is said to have a 2:1 compression ratio. With vocals, compression not only brings level variations under control but brings up softer elements of the voice that add "character." (Compression is also used with instruments like guitar and bass to add sustain, or drums to tame peaks.)

Another advantage is that if the singer can maintain the same distance from the mic, an L/C can help keep the same intimacy during the entire performance because the tone doesn't change due to the proximity effect. But a compressor can also be very helpful in the opposite situation: a singer who can't perform without leaping all over the place. You can level out the performance, even though the tone may change.

Limiting is a variation on compression that's designed more to clamp peaks to a certain level, but leave signals under that level alone. Limiters typically use a fast attack time (under 10ms, but often less), a high compression ratio (around 20:1 or even 100:1), and a high threshold (the level where limiting kicks in).

Now that I've started tossing around terminology, let's look at the controls and what they do. Most of these devices come with a batch of presets to suit most common needs; Figure 1 shows the list of the Dyn3 presets that come with Digidesign's Pro Tools.

A WHISPER AND A SHOUT

The human voice has a wide dynamic range, from a whisper to a shout. Because of that variation, it can be difficult to get a vocal to sit nicely in the mix where you can hear all the lyrics. A compressor is often a big help.

Generally you want to set up dynamics control so you don't notice it's there, but plenty of engineers like to use compression as a special effect where it actually is noticeable. For example, the only way you can get that in-your-face effect used for the vocals in a lot of headbanger music is with a compressor (think AC/DC).

The graph in Figure 2 on page 40 really helps to see how the controls affect the signal. The line begins moving upward at 90 degrees from left to right in a one-to-one relationship: When the input signal increases by one decibel, the output also increases by one decibel. That's what we hear in real life. After the signal exceeds the threshold or knee (indicated by the vertical red line), the compressor attenuates (reduces)

Fig. 1. The Pro Tools Dyn3 Compressor/Limiter preset list.

the signal based on the ratio you select. When using the Vocal Levelor preset with a 3:1 setting, for every 3dB the input signal increases above the threshold, the output increases by only 1dB.

GETTIN' ALL SQUISHY

By setting a low threshold (-30dB), compression kicks in at a correspondingly low volume, reducing high levels and raising lows. But now, we're no longer taking advantage of the available headroom because of the reduced levels for the peaks. So, we boost the plug-in's output gain so that the peaks once again hit 0 at the output; the overall average level is now much higher. To give you some idea of how compression affects the audio, take a look at the waveforms in Figure 3. This is before raising the compressed signal's gain so that its peak levels match the uncompressed version.

On the downside, a low threshold setting also makes background

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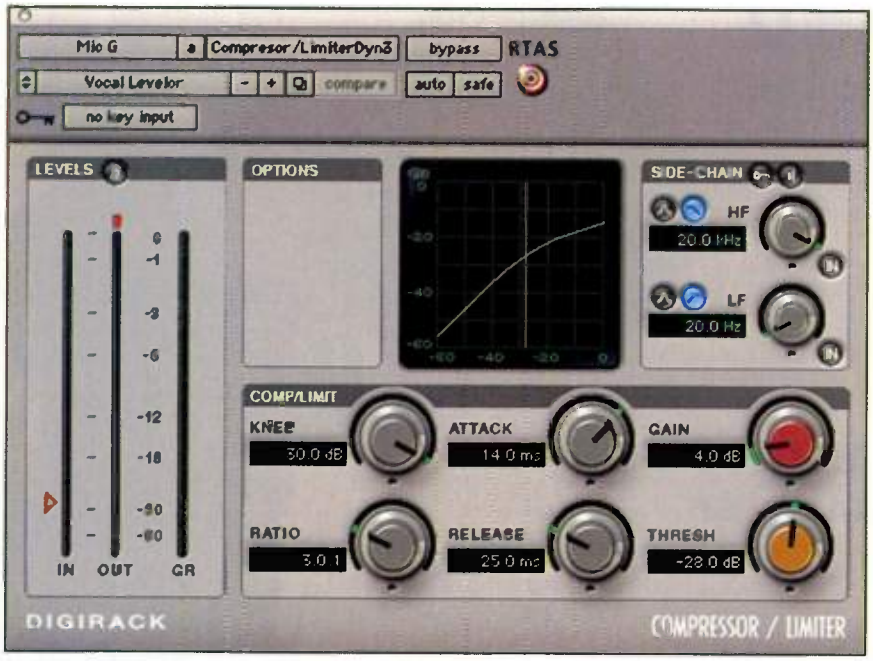

Fig. 2. The "Vocal Levelor" preset; note the graph in the window.

noises more audible because it brings up lower levels. You need to be particularly cautious about sounds like heating, air conditioning, computer fans, and buzzing amplifiers.

CONTROL FREAK

Now let's looks at the other controls. The attack is measured in milliseconds, and determines how quickly the unit responds after the input signal crosses the threshold setting. Increasing the attack will let some transients through, making the material sound more natural and a little less squashed.

The release setting determines how quickly the compressor returns to the uncompressed state after the signal drops below the threshold. Adding some release time (80–250ms) can help the material sound more natural. It's also common for compressors to have an "auto" option that changes the release

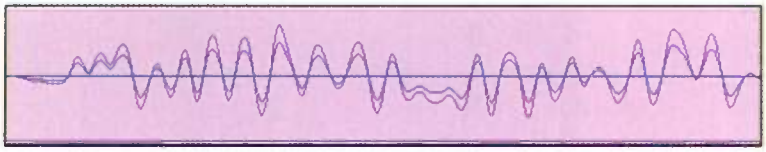

Fig. 3. The purple waveform is compressed, while the magenta waveform is the original signal. Note how the uncompressed waveform has much higher peaks.

time dynamically to best accommodate changes in the input signal.

THE SIDE-CHAIN GANG

The side-chain section (also known as "detector") in the upper right in Figure 2 allows some other signal to control the compression. For example, a sidechain can provide automatic gain control or "ducking" of background music when a narrator or DJ is talking—just send a bus out from the announcer's voice track to the sidechain input on the music track. The sidechain input also has musical uses, like making a sustained instrument "pulse" when another instrument (like a kick drum) controls the compression.

EASY DOES IT — OR DOES IT?

While you can certainly over-compress, I think it's also possible to under-compress. I have a Diana Krall CD (*Only Trust Your Heart*, GRP Records) that was recorded live to two-track with no compression. When I listen in the car, I have to keep my hand on the volume knob because her voice keeps dropping below the road noise. The same is true of classical music.

I've also found that having a compressor in my stage rack is invaluable when singing live, as it can increase intelligibility. The unfortunate side effect is that it also increases the possibility of feedback; to control that, I use a pink noise generator and calibrated mic to tune my EQ unit to the room, along with a feedback exterminator to catch any residual feedback issues.

BRING IT ON HOME

Except for special effects like those we've already discussed, be careful not to squeeze the life out of the performance. Use as little as you can get away with that still gives the performance all the attention it deserves. You can start with the presets and tweak as you learn; just don't get carried away with your new toy and create something you'll be embarrassed by a year from now. Do it right, and your spouse might even say it's the best piece of equipment you ever bought. EQ

Fig. 1. Reducing some lower midrange energy in one or more tracks (in this case, using SSL's X-EQ equalizer) can help toward creating a less muddy, more defined low end.

THE SEVEN DEADLY SINS OF MIXING

by Craig Anderton

If you listen to a lot of mixes coming out of home and project studios, after a while you notice a definite dividing line between the people who know what they're doing, and the people who commit one or more of the Seven Deadly Sins of Mixing. You don't want to be a mixing sinner, do you? Of course not! So, check out these tips.

1. The disorienting room space. This comes from using too many reverbs: a silky plate on the voice, a big room on the snare, shorter delays on guitar . . . concert hall, or concert hell? Even if the listener can't identify the problem, they'll know that something doesn't sound quite right.
Solution: Choose one reverb as your main reverb that defines the characteristics of your imaginary "room." Insert this in an aux bus. If you do use additional reverb on, say, voice, use this second reverb as a channel insert effect but don't rely on it for all your vocal reverb; make up the difference by sending the vocal to the reverb aux bus to add in a bit of the common room reverb. The end result will sound much more realistic.

2. Failure to mute. All those little pops, snorks, hisses, and hums can destroy a mix's transparency. Even a few glitches here and there add up when multiplied over several tracks.
Solution: Automate mutes for when vocalists aren't singing, during the spaces between lead guitar solos, and the like. Automating mutes independently of fader-style level automation lets you use each for what it does best.

3. "Pre-mastering" a mix. You want your mix to "pop" a little more, so you throw a limiter into your stereo bus, along with some EQ, a high-frequency exciter, a stereo widener, and maybe even more . . . thus guaranteeing your mastering engineer can't do the best possible job with a fantastic set of mastering processors.
Solution: Unless you really know what you're doing, resist the temptation to "master" your mix before it goes to the mastering engineer. If you want to listen with processors inserted to get an idea of what the mix will sound like when compressed, go ahead—but hit the bypass switch before you mix down to stereo (or surround, if that's your thing).

4. Not giving the lead instrument enough attention. This tends to be more of a problem with those who mix their own music, because they fall in love with their parts and want them all to be heard. But the listener is going to focus on the lead part, and pay attention to the rest of the tracks mostly in the context of supporting the lead.
Solution: Take a cue from your listeners.

5. Too much mud. A lot of instruments have energy in the lower midrange, which tends to build up during mixdown. As a result, the lows and high seem less prominent, and the mix sounds muddy.
Solution: Try a gentle, relatively low bandwidth cut of a dB or two around 300–500Hz on those instruments that contribute the most lower midrange energy. Or, try the famous "smile" curve that accentuates lows and highs, which by definition causes the midrange to be less prominent.

6. Dynamics control issues. We've already mentioned why you don't want to compress the entire mix, but pay attention to how individual tracks are compressed as well. Generally, a miked bass amp track needs a lot of compression to make up for variations in amp/cabinet frequency response; compression smoothes out those anomalies. You also want vocals to stand out in the mix and sound intimate, so they're good candidates for compression as well.
Solution: Be careful not to apply too much compression, but too little compression can be a problem, too. Try increasing the compression (*i.e.*, lower threshold and/or higher ratio) until you can "hear" the effect, then back off until you don't hear the compression any more. The optimum position is often within these two extremes: enough to make a difference, but not enough to be heard as an "effect."

7. Mixing in an acoustically untreated room. If you're not getting an accurate read on your sound, then you can't mix it properly. And it won't sound right on other systems, either.
Solution: Even a little treatment, like bass traps, "clouds" that sit above the mix position, and placing near-field speakers properly so you're hearing primarily their direct sound rather than any reflected sound can help. Also consider using really good headphones as a reality check. EQ

YOUR LOCATION FOR CREATION

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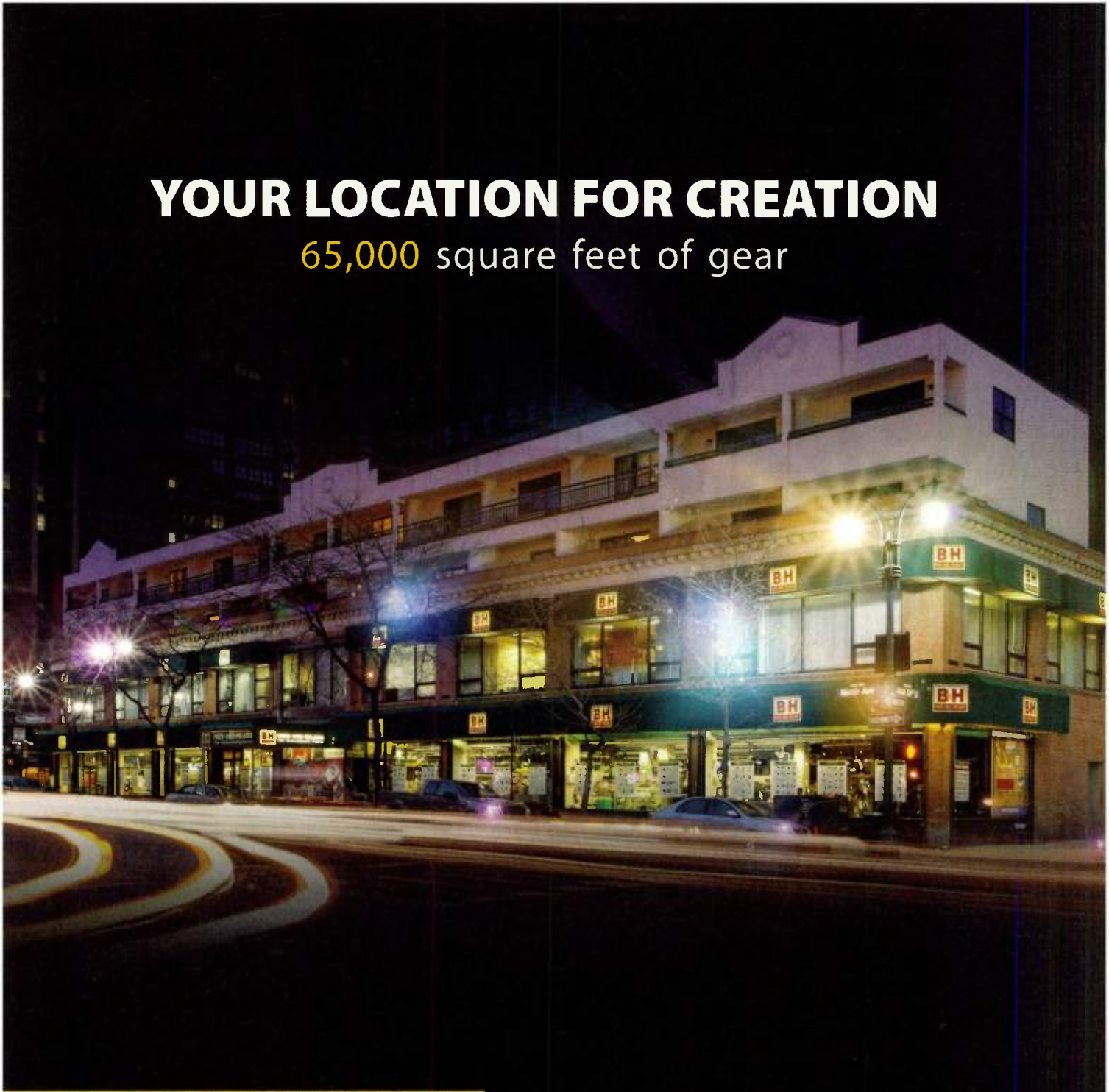

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CHEAT SHEET

SONY ACID PRO 7

by Craig Anderton

Cheat Sheet delivers concise, explicit information about specific recording/audio-related tasks or processes. This installment describes basic Acid Pro operations.

SHOW MIXING CONSOLE

Go *View > Mixing Console* or type Alt-3.

CUSTOMIZE MIXER ELEMENTS

The *Properties* (left-most button in the top mixer toolbar) drop-down menu lets you show/hide various mixer console control regions such as the *Channel List*, set channel width for all channels simultaneously, and choose meter characteristics (resolution, peak hold, reset meter clip, etc.).

SHOW/HIDE INDIVIDUAL CHANNELS

Show the Channel List (see above). Checking the box to the left of a channel name shows the channel; unchecking hides it.

SHOW/HIDE MIXER CONTROL REGIONS

Use the vertical toolbar to the left of the channel strips. Note: If *Meters* is selected and *Faders* isn't, high-resolution meters replace the faders. If *Faders* is selected and *Meters* isn't, meters sit side-by-side with the faders.

VARY INDIVIDUAL CHANNEL WIDTH

Right-click in a channel strip and choose *Narrow, Default*, or *Wide* width. Or, click on a channel strip's right splitter line and drag left or right.

VARY ALL CHANNELS BETWEEN MAX AND MIN WIDTH

Use the slider at the bottom of the vertical toolbar (to the left of the channel strips).

GROUP CHANNELS

Show the *Channel List*. Control-click on channel names to select discontiguous channels, or Shift-click to select contiguous channels. Changing the parameter on a selected channel changes the same parameter on all selected channels.

INCREASE FADER/METER HEIGHT

When the mixer console is docked, drag up or down on the top mixer splitter bar. When the mixer floats, increase its window height.

GIVE ASIO I/O FRIENDLY NAMES

Go *Options > Preferences > Audio Device* tab. Choose the ASIO Audio Device Type and click on *Apply* if it's not grayed out. Click on the *Advanced* button. In the list of I/O devices, click on a name and type in the new name. Click on *Reset Names* to restore the original names.

CHOOSE SAMPLE RATE AND RESOLUTION

Go *File > Properties > Audio* tab. Choose *Sample Rate* and *Resolution* from their respective drop-down menus.

CHOOSE DEFAULT RECORDED FILES FOLDER

Acid Pro defaults to storing recordings on the C: drive. To use a separate data drive, create a folder (*e.g.*, Acid_Recorded_Files) on the drive. Then go *File > Properties > Audio* tab, and under *Recorded Files Folder*, browse for the folder you just created.

SET LOOP LOCATORS

Click and drag in the band just above the timeline. Use the Transport's *Loop Playback* control (or type "L") to enable/disable looping.

SHOW TIME RULER

In addition to the standard Beat Ruler, you can show a Time Ruler along the track view bottom. Go View > Time Ruler >Show Time Ruler, then go View > Time Ruler and select the desired units (samples, frames, seconds, etc.).

ADD A VST VIRTUAL INSTRUMENT

Go *Insert > Soft Synth > Soft Synths* tab. Click on the desired soft synth, then click on *OK*. A mixer channel appears for the instrument output, as does the instrument's Properties page.

REWIRE A CLIENT INTO ACID

Go *Insert > Soft Synth > ReWire Devices* tab. Click on the ReWire device and channel you want to stream into Acid Pro, then click on *OK*. Acid Pro creates a corresponding Synth channel in the mixer (make sure Soft Synths is set to *Show*). If the ReWire application doesn't open, click on the *Open Rewire Device Application* button (toward the upper middle of the Soft Synth Properties page). The Soft Synth Properties page will show the available MIDI ports and compatible controllers. To stream additional channels into Acid Pro and create additional mixer channels, repeat the steps in the first two sentences.

REWIRE ACID INTO A HOST

Follow the host's instructions for rewiring. The host must be opened before Acid Pro, and Acid Pro will use the host's sample rate and resolution, regardless of the native Acid Pro settings.

ENABLE INLINE MIDI EDITING

Type G to enable inline MIDI editing for all MIDI tracks. To enter data, select the pencil and click-drag in the track to create a MIDI clip. Use the pencil tool inside a clip to draw notes.

ADD A MARKER

Click in the track view at the time where you want to add a marker, then type "M." Or, type M during playback to drop a marker "on the fly." Right-click on the marker to rename or delete.

CHANGE TEMPO, TIME SIGNATURE, OR KEY CHANGE

Click in the track view where you want one of these changes to occur, then go *Insert > Tempo/Key/Time Signature change* or type Shift+T. In the dialog box that appears, enter the desired changes. Click OK, and Acid Pro deposits a marker where you clicked.

MIX DOWN TO AUDIO

To mix down a project, go *File > Render As*. Choose a file name/format. To render a portion of the project, use loop locators to define the region to be rendered, and check *Render Loop Region Only* in the Render As dialog box. If you check *Save Each Track as a Separate File*, tracks are saved as files including all processing, automation, etc. This is convenient for importing all audio into a different DAW.

DO REALTIME RENDERING

When using an external synth or signal processor as part of your project, render in real time by going *File > Real-Time Render*. Even when not using external devices, you can also use this to hear the mix in real time while rendering as a final "proofing." eq

Cut Along Dotted Line

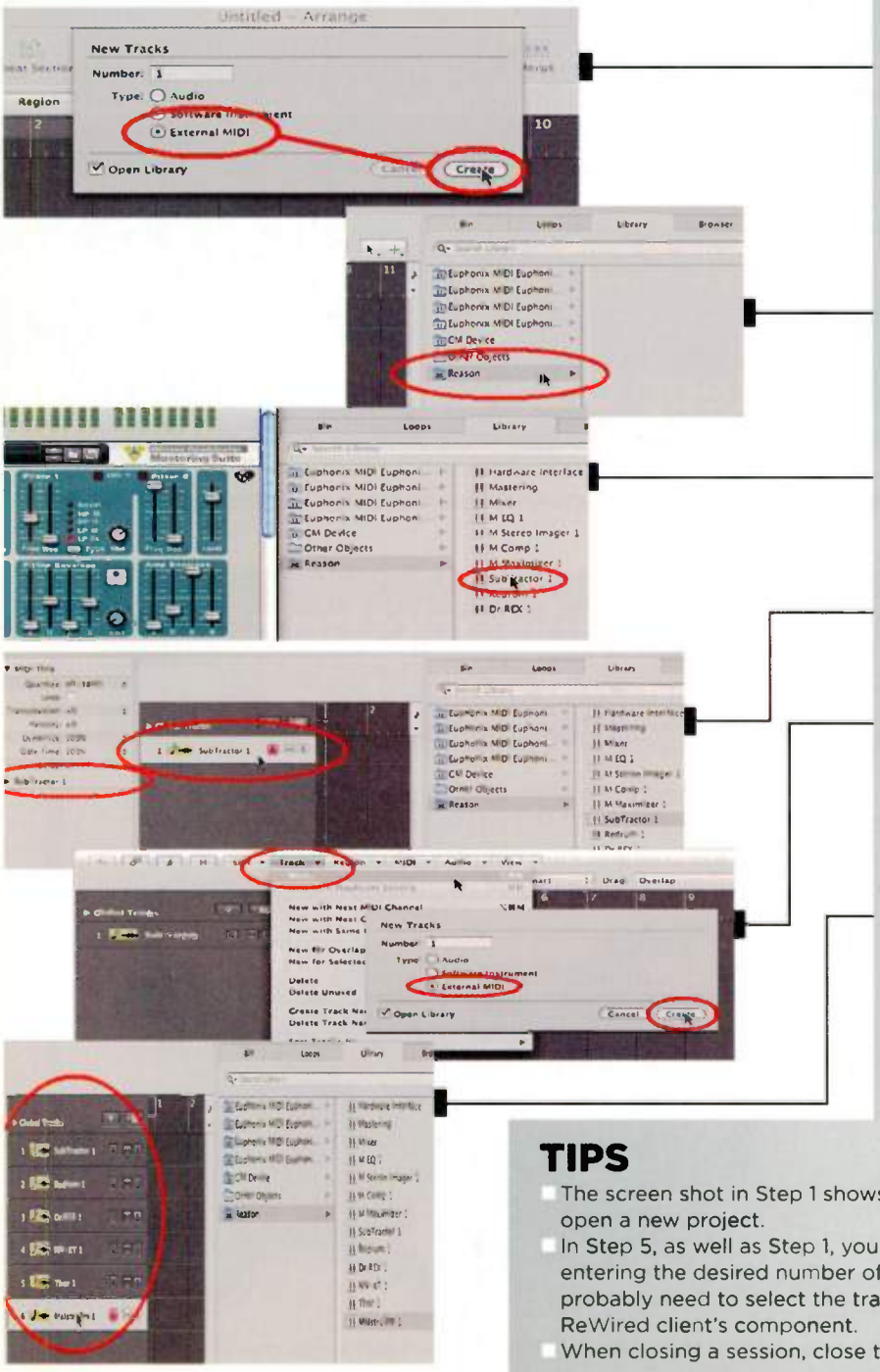
BY CRAIG ANDERTON

APPLE LOGIC PRO 8

Use Logic Pro 8 as a ReWire host

OBJECTIVE: Augment Logic Pro 8 by streaming audio from ReWired programs into Logic tracks.

BACKGROUND: Compared to previous versions, Logic Pro 8 has a much more streamlined way of integrating ReWire-compatible programs. This makes it easy to take advantage of programs like Propellerhead Reason (to add a suite of soft synths), Ableton Live (to take advantage of its novel looping and compositional capabilities), etc.



STEPS

1. Open Logic Pro 8. If you're starting with an Empty project, a dialog box opens automatically where you can create an External MIDI track. Otherwise, for an existing project, go Track tab > New and in the dialog box that appears, select External MIDI and click on Create (see Step 5).

2. Double-click on the ReWire app's entry in the Library to launch the ReWired client program (this example shows Reason being selected).

3. In the Library, click on the ReWired program's component that you want to assign to the track you created in Logic.

4. The instrument you clicked on appears in the track.

5. To stream audio from additional components of the ReWired program, create another External MIDI track by going Track tab > New, selecting External MIDI, and clicking on Create.

6. Repeat Steps 3–5 to continue adding instruments. The ReWired application and Logic Pro will now run in tandem—they start/stop at the same time, and MIDI data sent to the track in Logic can be passed along to the ReWired application.

TIPS

- The screen shot in Step 1 shows the dialog box that appears when you first open a new project.
- In Step 5, as well as Step 1, you can create several tracks simultaneously by entering the desired number of tracks in the number field. However, you will probably need to select the track (click on it) when you want to assign a ReWired client's component.
- When closing a session, close the ReWired program first, then close Logic.

POWER APP ALLEY

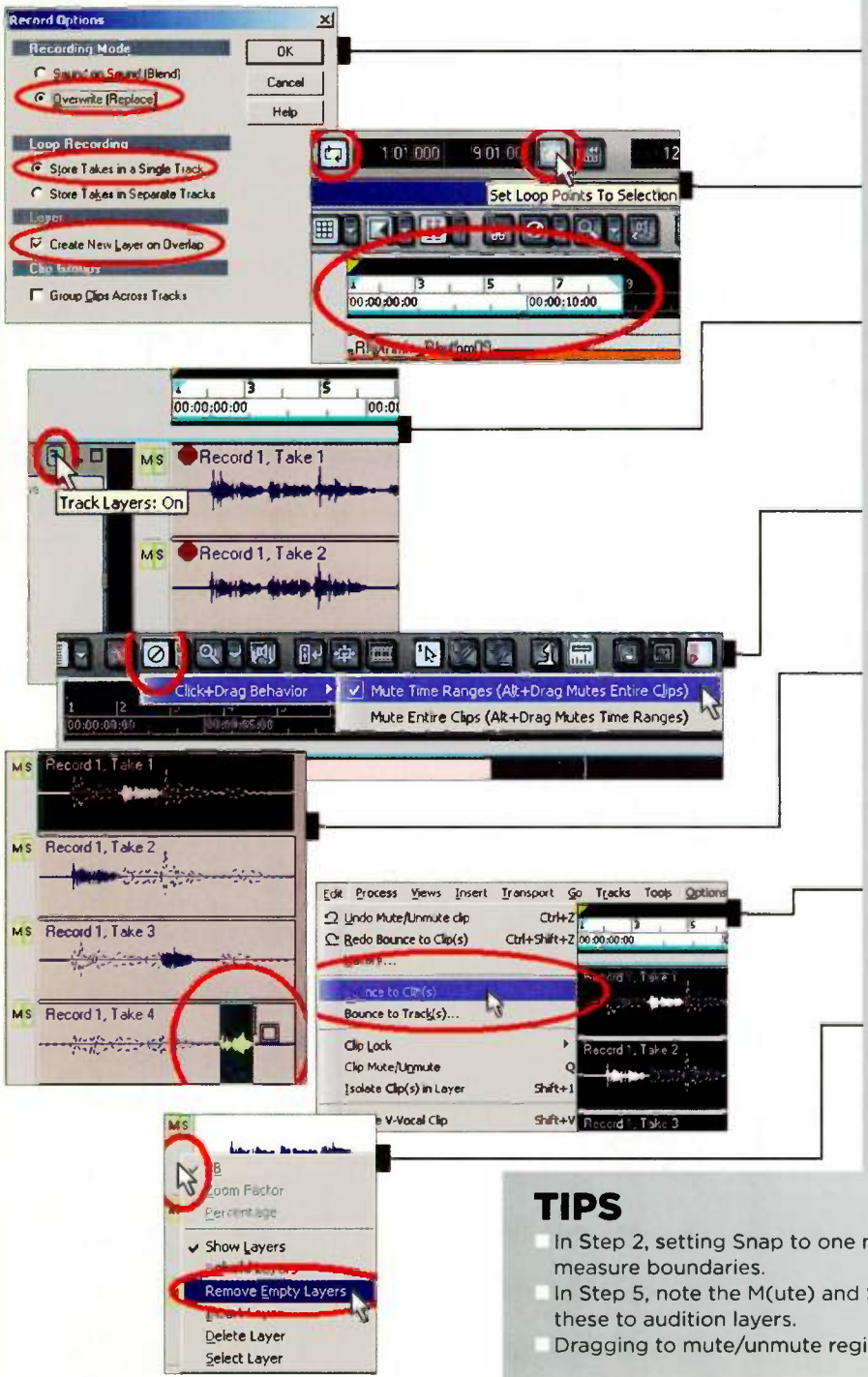
BY CRAIG ANDERTON

CAKEWALK SONAR

Do "composite" audio or MIDI recording for better performances

OBJECTIVE: Record several versions of the same part, then put all the best bits together into a single, composite track.

BACKGROUND: With Sonar's composite recording feature, you can record multiple "layers" of takes in a track. You then listen back to each layer, pick the best sections, mute the rest, and bounce the best parts to a single clip.



STEPS

1. Go *Transport > Record Options.* Make sure "Overwrite," "Store Takes in a Single Track," and "Create New Layers on Overlap" are selected.

2. In the timeline, click-drag across the region where you want to do your overdubs. Click the "Set Loop Points to Selection" button to define this region as a loop.

3. Record-enable the track for your overdubs, then click on the Record button to start recording. Each time Sonar loops, it records a new layer within the track, and mutes previous layers. When done, to see the layers, click on the track's Layer button.

4. From the Mute tool's drop-down menu, select "Click + Drag Behavior > Mute Time Ranges," then select the Mute tool. To mute/unmute an entire layer, Alt-click with the Mute tool in the layer.

5. To edit the layers, drag across the layer's lower half (the cursor turns into the international "no" symbol) where you want to mute the layer; muted audio or MIDI data shows as dashed lines. Drag across the layer's top half (the cursor becomes a square) to unmute.

6. When you're done editing, select all layers (*e.g.*, drag a marquee around them) then go "Edit > Bounce to Clip(s)." This consolidates all layers into a single layer.

7. Right-click in the strip to the left of the layers and choose "Remove Empty Layers." Now turn off the track's Layer button, and your edited part will appear as a standard clip.

TIPS

- In Step 2, setting Snap to one measure makes it easier to define precise measure boundaries.
- In Step 5, note the M(ute) and S(olo) buttons to the left of each layer. Use these to audition layers.
- Dragging to mute/unmute regions is subject to the current Snap value.

LISTEN UP: NEAR-FIELD MONITOR ROUNDUP

EQ TESTS FOUR THOROUGHLY MODERN MONITORS

by Garrett Haines

Some say it was the Alesis ADAT that revolutionized the home studio, while others point to Mackie's 1604 mixer or Digidesign's Pro Tools. But let's not forget the appearance of high-quality, near-field monitors at a reasonable price that let us *hear* the music we were making in our studios. Without those, we'd still be looking for some place to mount some honkin' big JBL speakers, or using hi-fi bookshelf speakers intended for consumers.

In any event manufacturers have certainly not forgotten about near-field monitors, because their numbers keep increasing. And increasing . . . which is what led to this article.

You see, at the *EQ* offices Editor Matt Harper was literally buried behind a wall of near-field monitor boxes, where he had been trapped or days without food or water (fortunately, an alert night-time janitorial service worker heard the faint sound of someone saying over and over again, "too . . . many . . . speakers").

After he recovered, I got a call from him and we talked about doing an *EQ*-style roundup of the best of the batch, based on the most recent speakers to arrive so we'd keep things timely. Ideally, he wanted to group monitors by design or price point, but that simply didn't happen: More and more candidates appeared at his office, and he was running out of room to walk. Nor did we want him to get buried alive again.

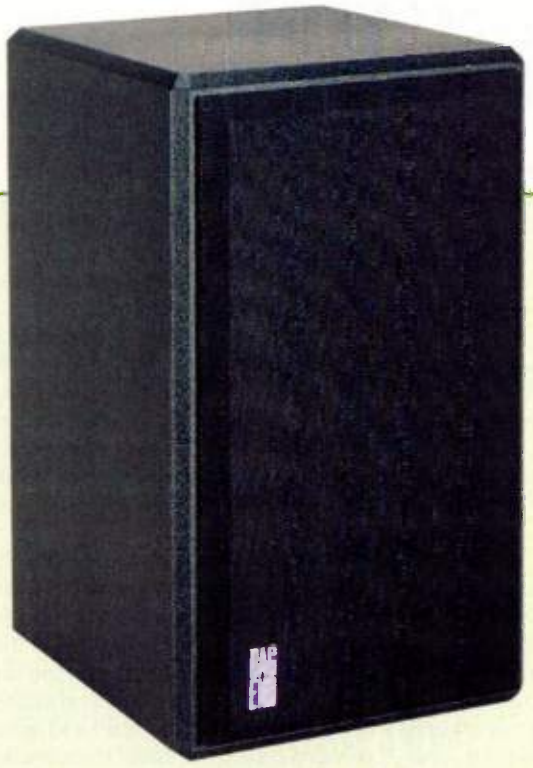
Bottom line: The bad news is the article didn't turn out quite the way he wanted, but the good news is we're able to present a collection that suits your budget or design preference. So whether you grew up on NS-10s, Genelecs, Tannoy Red Devils, or are brand new to the market, we probably have something for you. (Note: We had also completed a review of the AAD SM6, only to find out just before going to press that we had been shipped defective speakers. As there was no time for a re-do, we had to pull it.)

MORE OPTIONS THAN EVER

Gone are the days of drilling two holes in a box and dropping in some drivers: Designers have multiple options when it comes to building loudspeaker systems. Historically, most of the attention has been on driver and enclosure design. Great strides have been achieved in the areas of enclosure shape, as well as options featuring ported cases. In recent years, some companies have turned to onboard digital signal processing to alter the response of the unit, with the most advanced systems incorporating microphones for individual room adjustments. Consequently our roundup contains speakers designed for the smallest project studios, world-class facilities, and just about everywhere in between.

All prices are list price, per speaker; "street" prices are typically less. Double the prices for a pair.

BAG END PM6 TIME-ALIGN



Bag End is a household name in live sound reinforcement. *EQ*-reading bass and keyboard players have probably come across the company's instrument amps, as well. But they also make near-field monitors for audio and video suites.

The PM6 is about the same size as the ubiquitous Yamaha NS-10, and at first glance it looks like it's missing the tweeter! Actually, the design is built around a 6-inch 2-way coaxial driver. If you've never seen one of these beasts in person, they're kind of cool. Instead of the round dome you normally encounter at the center of the woofer, the tweeter is built into a pole that extends through the middle of the cone. (The outer driver can move independently from the tweeter unit.) But the physical proximity of the two units means the high and low frequencies hit the listener's ears at the same time. Bag End has licensed the Time Align trademark from E.M. Long Associates, the original inventor of Time Aligned loudspeakers dating back to 1976. Other vendors have there own various implementations.

For a while, most speakers were not time-aligned (unless is was by accident), but modern designs have done a better job addressing this issue. Companies such as Dunlavy, Lipinski, and Earthworks have made "stepped" monitors, where the tweeters are recessed further into the enclosure, while other companies have incorporated delay-adjustment features inside the monitor's internal crossover. Nonetheless, time-corrected speakers tend to have great imaging, and the Bag End PM6 is no exception.

You can mount the PM6 vertically or horizontally, and it comes with a removable speaker grill. A blue LED illuminates to indicate the speakers have power, which is provided via a Speakon-terminated power cord. There is no power switch, so unless you have the Bag Ends on a switchable power conditioner, the units remain on.

In use, the PM6 provided the tightest transients and most separated stereo image of the bunch. Mixes with extreme stereo panning, or percussive instruments like double kick or marimba, were outright fun to listen to on the Bag Ends. The high end was articulate, but not fatiguing—I could listen to these speakers for long sessions, no problem. The midrange, although defined, was not overly wooly or exaggerated. Of course, with a non-ported box of this size, a 6-inch driver cannot produce the big bass of larger units—but we knew that before we plugged them in.

If you grew up mixing with NS-10s, mid-sized Genelecs, or even Auratones, the Bag Ends would be a dream come true upgrade in terms of fidelity, image, and fatigue reduction. Other users would want to consider adding a subwoofer to augment the lowest registers. Overall, though, this is a very sweet set of speakers that you can trust for doing mixes that translate across multiple playback systems.

Price: $900
Strengths: Incredible imaging. Tight, focused midrange. "Just right" amount of high end.
Limitations: No power switch means they're always on. Power cable uses Speakon connector rather than IEC-type. Thin on the low end compared to others in the roundup.
Contact: www.bagend.com

EQUATOR AUDIO Q10

The name Equator Audio might be new, but the man behind the brand is no stranger to the monitoring world. President Ted Keffalo has two decades of experience in pro audio, including time at Alesis and as a co-founder of Event Electronics. He founded Equator Audio with the goal of developing a no-compromise monitor that would allow any recording engineer to experience the high caliber monitoring found in world-class studios. The Q10s, while at the smaller end of the Equator line (they also have 8, 12, 15, and 18-inch models), are massive in person, weighing in at 54 pounds each. Models in the Equator line can be networked via Ethernet cables, which enables computer-based control of the units, as well as integration with the company's alignment and tuning software.

Like the Bag Ends, the Q10 features a coaxial design. Each unit features a 10-inch main with dual bass ports for extended response. The highs come from a full-blown High Frequency Compression Driver, and the way they get a horn to sound not like a horn is by using the on-board computer to reduce the sloped areas on each side of the crossover point, where both the horn and woofer would normally be reproducing the same frequencies.

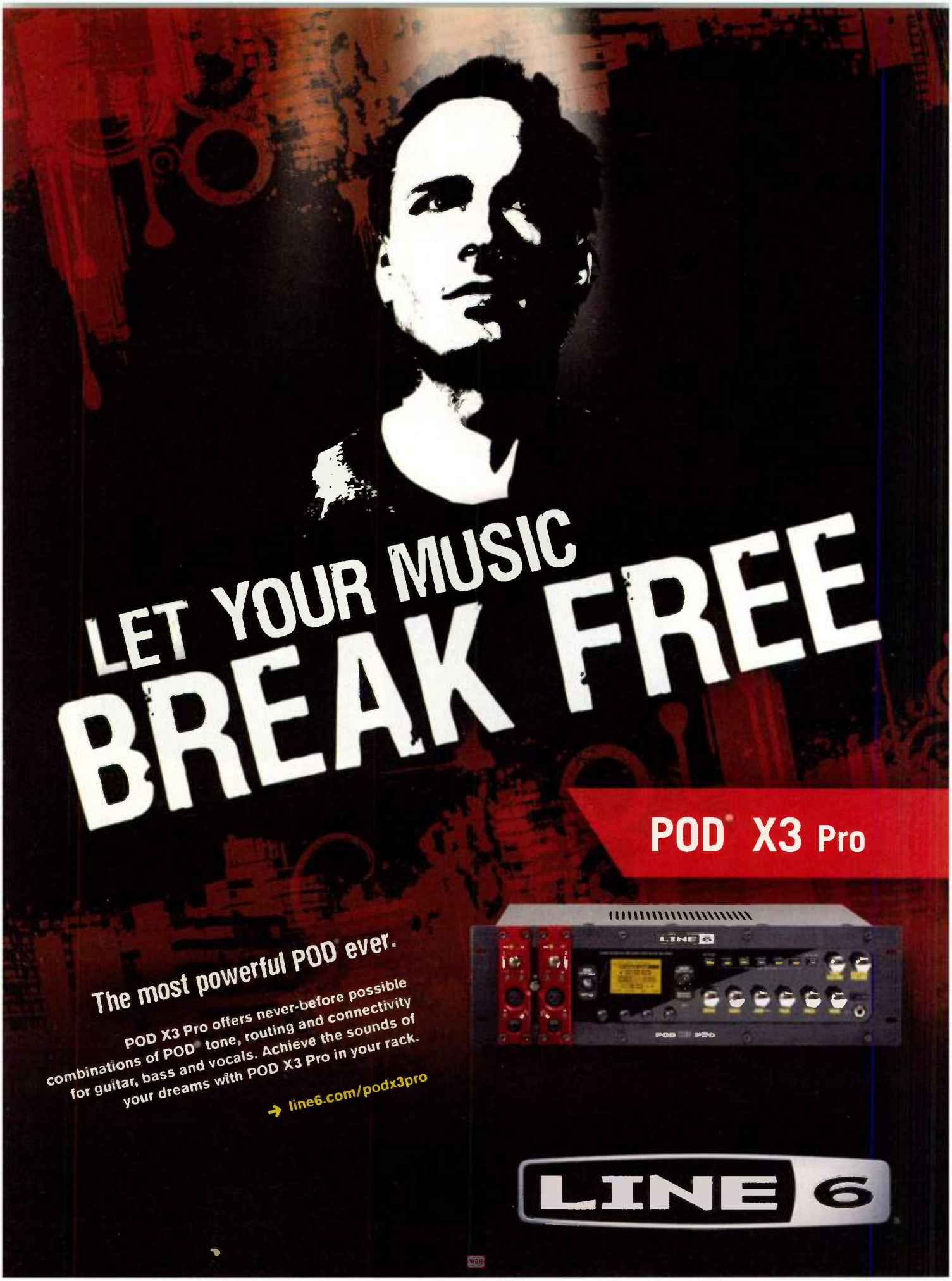
To start, we tried the Equators in our Studio A as-is, foregoing any of the alignment features. In this out-of-the-box configuration the Q10s sounded great. They produced one of the widest frequency responses of any near-field monitor I've heard, and would not distort no matter how hard we pushed them. (Our ears cried "uncle" before the Q10s gave up.) Most notable was the uncanny accuracy in the midrange, which at times bordered on clinical. Listening to AC/DC's "Back In Black" revealed finger tips sliding on strings, hi-hats ringing out during rests, and the slightest details in Brian Johnson's vocals.

One listener found this much information to be "distracting," but as a mastering engineer who spends too much time cleaning up pops, clicks, and other things that slip by some mix engineers, I contend the better we can hear what's going on, the better our final product will be. But after a few days of working with the Q10s, the same critic, now accustomed to the resolution, had a hard time going back to his previous monitors. Mixes created on the Q10s translated well to MP3 player, car, and mastering speakers, so the detail didn't prove to be a hindrance to productivity.

We moved the Q10s into our smaller mixing suite and fired up the alignment software. Setting the supplied omni mic at the mix position, the system conducted all of the tests and calibrations in a few minutes. While we didn't require significant EQ changes, the software did note some early reflection issues, and adjusted accordingly. To my knowledge, Equator is at the forefront when it comes to addressing reflections in addition to room response. Alternating between monitoring with and without the correction revealed subtle changes in imaging and localization. I'm a big believer in tuning one's room rather than one's speakers, and I've had poor experiences with room-adjusting speakers in the past, but the Equator software really works. Many of us do not have the time, resources, or space to change our control rooms. If you're in this group, consider the Equators at the top of your shopping list.

While some of the speakers in the roundup blur the distinction between pro and project studio use, the Equators blur the distinction between mixing and mastering speakers. I could envision a mastering suite built around a pair of Q12s and a pair of the Q18s—and a surround mixing suite featuring Q8s would be eargasmic. I'm convinced the Q series does achieve Keffalo's goals of bringing "Studio A" to "Studio Anywhere."

Price: $2,000
Strengths: Clarity, clarity, clarity. Wide frequency response, solid imaging, can reproduce loud material with ease. Power controls on front panel. Correction software actually works.
Limitations: Physically very heavy and require appropriate support. Larger-than-most-near-fields-size means they take up more real estate. This level of performance comes at a price.
Contact: www.equatoraudio.com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LINE 6

NEAR-FIELD MONITOR PLACEMENT

In smaller studios, near-field monitors have become the standard way to monitor. These compact speakers sit around 3 to 6 feet from the mixer's ears, with the head and speakers forming a triangle. The speakers should point toward the ears and be at ear level. If slightly above ear level, they should point downward toward the ears.

Near-field monitors reduce—but do not eliminate—the impact of room acoustics on the overall sound, as the speakers' direct sound is far greater than the reflections coming off the room surfaces. As a side benefit, because of their proximity to your ears, near-field monitors do not have to produce a lot of power. This allows including amps within the speaker to create powered monitors that need no external power amp, as well as relaxing the requirements for external power amps, if needed.

However, placement in the room is an issue. If placed too close to the walls, there will be a bass build-up. Although you can compensate for this with EQ (or possibly controls on the speakers themselves), the build-up will be different at different frequencies. High frequencies are not as affected because they are more directional. If the speakers are free-standing and placed away from the wall, back reflections from the speakers bouncing off the wall could cause cancellations and additions.

You're pretty safe if the speakers are more than 6 feet away from the wall in a fairly large listening space (this places the first frequency null point below the normally audible range), but not everyone has that much room. Nor are room reflections the only problem; if placed on top of a console, reflections from the console itself can cause inaccuracies. Always aim for as direct a path as possible from speaker to eardrum. —*Craig Anderton*

KRK SYSTEMS ROKIT POWERED RP5 G2 AND KRK10S SUBWOOFER

These aren't your dad's Rokits. I know—I owned the originals, and that experience made me vow never to buy KRKs again! But, over the past few years the company has conducted a complete overhaul of the entire product line, and won me back in the process. (In fact, the KRK VXT8s have now become our main monitors in Studio A.) With this updated model, the advances in design that debuted in the company's Expose series are being implemented in the Rokit line.

Long gone is the A-frame shape of the original Rokits; the new generation features a curved, almost egg-shaped design, making them resemble shrunken versions of the VXT line. The 1-inch neodymium soft dome tweeter is paired with a 5-inch glass aramind composite woofer, and they put out significant levels for their size. As with any compact speaker, the Rokits have almost nonexistent response at the very low end, which is why KRK sent us the KRK10S powered subwoofer to complement the mains. The sub also incorporates advances in cabinet design, as well as power amplification and crossover tweaks made by the design team.

We set the Rokit's low cut to 50Hz, and the low pass filter on the sub to the same. Once again, we loaded up our AC/DC tracks and hit play. The result? Mud. The low mids were so out of control it sounded like quarter-inch tape at 7.5 ips without the hiss. We scratched our heads and decided we would ignore the legend on the back of the sub. Out came the test tone CD, and after adjusting the crossover, we started again. (By the way, for a great resource on setting up a sub, check out an article by Bob Katz on his website at: www.digido.com/media/articles-and-demos/13-bob-katz/14-subwoofers.html.)

Within a few minutes, we found a crossover combination that fit our setup, and were immediately impressed with the system's quality. The kick and snare of the

AC/DC album hit with meaty force, and interplay between the lead and rhythm guitars was spot on. Engaging in a totally unfair comparison, we A/Bed the set up against the far more expensive Equators. And while the KRKs lacked equivalent definition and precision, the balance of mix elements was very similar. Translation: You can probably trust that mixes made with these units will travel to other systems. Nick Barnes, who was helping with the evaluation, made the observation that the Rokits had a pretty wide sweet spot for such little speakers. Comparing them to the Bag Ends confirmed this opinion.

Provided you invest the time to find the correct crossover setup, this is definitely the best value in the bunch. They would make a great starter set, and even a second opinion monitor (in place of a boom box or smaller speakers). And I can't emphasize enough how much bang you get for your equipment dollar with the Rokits.

Price: Rokit $399, Sub $599
Strengths: One of the best values on the present market. While not as accurate as more expensive models, you can trust mixes made on these. Small footprint of Rokits makes integration easy in tight spaces.
Limitations: Need the KRK10s Sub for best results. Setting up correct crossover point requires effort. Not as much resolution as high-end models. Can distort if pushed too far.
Contact: www.krksys.com

IS THERE A "BEST" MONITOR?

On Internet forums, you'll see endless discussions on which near-fields are best. In truth, the answer may rest more on which near-field works best with your listening space and imperfect hearing response. How many times have you seen a review of a speaker where the person notes with amazement that some new speaker "revealed sounds not heard before with other speakers"? This is to be expected. The frequency response of even the best speakers in reasonably well-treated rooms is sufficiently uneven that some speakers will indeed emphasize different frequencies compared to other speakers, essentially creating a different mix.

Although it's a cliché that you should audition several speakers and choose the model you like best, I believe you can't choose the perfect speaker, because such a thing doesn't exist. Instead, you choose the one that colors the sound the way you prefer, or even better, provides the least amount of coloration.

Choosing a speaker is an art. I've been fortunate enough to hear my music over some hugely expensive, very-close-to-perfect systems in mastering labs and high-end studios, so I know exactly what it should sound like. My criterion for choosing a speaker is simple: Whatever makes my "test" CD sound the most like it did over the high-end speakers wins.

If you haven't had the same kind of listening experiences, book 30 minutes or so at some really good studio and bring along one of your favorite CDs (you can probably get a price break because you're not asking to use a lot of the facilities). Listen to the CD and get to know what it should sound like, then compare any speakers you audition to that standard. For example, if the piano on your mix sounds a little understated on the expensive speakers compared to what you're hearing at home, choose speakers where the piano is equally understated.

One caution: If you're A-B comparing a set of speakers and one set is slightly louder than the other (even a fraction of a dB can make a difference), you'll likely choose the louder one as sounding better. Make sure the speaker levels are matched as closely as possible in order to make a valid comparison. —*Craig Anderton*

ACTIVE VS. PASSIVE MONITORS

There are two main monitor types, *active* and *passive*. Passive monitors consist of only the speakers and crossovers, and require outboard amplifiers. Active monitors incorporate any power amplification needed to drive the speakers from a line level signal. I generally prefer powered monitors because the engineers have (hopefully!) tweaked the power amp and speaker into a smooth, efficient team. Issues such as speaker cable resistance become moot, and protection can be built into the amp to prevent blowouts. Some speakers even have digital inputs, so you can feed the power amp directly from a digital source. Powered monitors are often *bi-amped* (*e.g.*, a separate amp for the woofer and tweeter), which minimizes intermodulation distortion and allows for tailoring the crossover points and frequency response for the speakers being used.

However, there's of course nothing wrong with hooking up passive monitors (which are usually less expensive than active equivalents) to your own amps, but make sure the amp has adequate headroom. Any clipping that occurs in the amp generates lots of high-frequency harmonics (ask any guitarist who uses distortion), and sustained clipping can burn out tweeters. —*Craig Anderton*

M-AUDIO DSM1 AND DSM2

The product of a joint venture between Digidesign and M-Audio, the DSM1 and DSM2 are more than a cosmetic rebranding of previous models: The DSMs have new cabinets, drivers, and most interestingly, an onboard DSP engine, making this an exciting new entry in the market. The cabinet is ported, and features either a 6.5-inch low-frequency driver for the DSM1 or an 8-inch version on the DSM2. Inputs can be analog or digital via AES or S/PDIF inputs, and either model supports PCM signals up to 24-bit at 192kHz. As all audio goes through the DSP, you might as

well feed the DSMs a digital source, which avoids an A/D conversion inside the speaker, and frees up I/O on your DAW (for use with outboard gear and the like). Rear panel DIP switches let you adjust any of 12 parameters, ranging from shelves to desktop resonance filters.

If I had to describe the DSMs in one word, it would be "smooth." The 1-inch ferrofluid-cooled tweeter is made of a soft Teteron dome, which is tech-marketing-speak for audio silk. Cymbals, tambourine, and horns were lush, and as far from harsh as imaginable. Having the DSP compensating for phase differences between the drivers at the crossover point is evident. Whether it was Brad Paisley's Telecaster on "5th Gear" or Andrew Manze's fiddle in Tartini's "Devi's Sonata," complex mids and highs danced alternately from the LF driver to the tweeter with transparent ease.

As for low end, the combination of ported cab and 6.5-inch driver gave the DSM1s a good deal of push. Perhaps a sub would be helpful for checking low lows, but this is not at all required for every studio. Moving up to the 8-inch driver and larger cabinet volume of the DSM2s produced even more low-end extension, with well-focused response down to the 40–50Hz range. While neither monitor exhibited the depth or clarity of the Equators, they clearly raise the bar of what can be expected at this price point.

My reservations about the DSMs are minor, but worth noting. Reference monitors are not supposed to be pretty, and I would classify the smooth, non-fatiguing response of the DSM line as on the verge of being "nice" speakers. Yes, you will be able to mix non-stop for 12 hours on them, but owners will want to exercise caution to avoid vocal sibilance or hi-hat splatter when mixing on these. Again, this is minor, and I would opt for the DSMs over more traditional, "less flattering" monitors any day of the week.

If you're considering the DSM line, I suggest you try both models in your control room. Don't just automatically assume that the 2s must be better than the 1s; it's really more a matter of determining which model is more appropriate for your environment. For example, one of our engineers, Kyle Smith, was impressed by the low-end extension of the DSM2s. Conversely, I preferred the more controlled low mids of the DSM1s. Again, the best way to decide is in your room.

Price: DSM1 $649.95, DSM2 $749.95
Strengths: Digital input frees up your DAW's analog I/O. Smooth, unfatiguing mids and highs. Ample lows on the DSM1, extended lows on the DSM2. Extensive EQ configuration options via back panel switches.
Limitations: High end is so silky you may be tempted to add more top than you should.
Contact: www.m-audio.com

CONCLUSIONS

All of this market competition is obviously keeping manufacturers on their toes. And we—the consumers—are the beneficiaries. Whether it's improving upon traditional closed cabinet designs, or developing new ways to integrate digital signal processing, things are only getting better.

After listening to this group for several weeks, I can attest that the line of demarcation between professional and project level monitoring continues to get fuzzier. Likewise, these models show there is more than one way to skin the proverbial design cat. Ported or closed, coxial or separated woofer/tweeter, correction DSP or sans computer, creative minds are constantly working to help us do our creative jobs better. Ah, if only these models had been available when I was starting out. . . . EQ

GADGETS & GOODIES

LIFE IS GOOD FOR RECORDING GUITARISTS—HERE ARE THREE REASONS WHY.

Stop bashing your strings for a minute, and check out these cool accessories designed for guitar players—but that also have uses beyond guitar (all prices are MSRP).

LINE 6 BACKTRACK + MIC

($209.99, WWW.LINE6.COM)

I love products that probably resulted from lots of swearing. I can just see someone at Line 6 saying *"@#$%^&*! That was a hit song hook, and after the phone rang, I forgot it!"* Or maybe I'm just projecting. In any case, BackTrack sits between your guitar and amp or recorder, and stores everything you play in its flash memory. Really.

You connect your guitar to the 1/4" in (or leave unplugged to use the mic; a guitar-only version with half the storage lists for $139.99), send the 1/4" to your amp or interface, tell it to record, then forget about it . . . until you play something you like. Stop, hit a Mark button, and bingo—the section you just played (*i.e.,* between silences) gets stuffed in a "Marked" folder. Unmarked audio goes into another folder, and can be overwritten if you run out of storage. Transfer material from either folder to your computer using USB 2.0 (which also charges the non-user replaceable battery) and the software that resides *in* BackTrack—yes, you can install the software on any connected Windows/Mac.

As to storage, BackTrack + Mic stores files in WAV format, with up to 24 hours at 11kHz (four hours at 48kHz/24-bit, six hours at 44.1/16). And you can stuff WAV files into the user memory (even up to 48kHz/24) and treat it like a stereo iPod but without the AAC compression. Nice.

Bottom line: Way cool, and 100% thumbs up. —*Craig Anderton*

SOURCE AUDIO MULTIWAVE DISTORTION

($149, WWW.SOURCEAUDIO.NET)

I've been into multiband distortion since the mid-'80s, so I know a good implementation when I hear one—and the Multiwave Distortion stomp box more than qualifies. It splits your guitar into 10 bands, then distorts each one individually for greater clarity than typical distortion.

However, there's more: The MD includes 21 algorithms, which range from single-band to multiband distortion, and some incorporate novel "foldover" distortion curves. Normally, hitting a distortion box harder gives more distortion, but with some algorithms distortion increases at first but then *decreases* with increasing level, thus avoiding the "everything gets turned into a square wave" sound. Other settings give an "octave above" effect, and all settings are further controlled by Sustain, Drive, and Output controls.

The only caution: The combination of control settings is critical—just a tiny twist of one control can change the sound from "Wow" to "Ugh"—but they can't be stored. When you find a sound you like, write down the knob settings.

The Multiwave Distortion works with batteries or an AC adapter, and is compatible with Source Audio's Hot Hand technology. But really, the big deal here is a distortion box that breaks new ground; check Source Audio's website for audio examples. *Warning:* It's addictive, and your power chords will never sound the same again. —*Craig Anderton*

PRS GUITAR INTERFACE

($120, WWW.WAVES.COM)

A passive guitar pickup's output is delicate, and likes to see a high-impedance, low-noise input stage with plenty of gain and an absence of hum. Although the "instrument" inputs on audio interfaces are a good start, there's something to be said for dedicated, ultra-high-quality boxes designed specifically for guitar, like those from Radial Engineering . . . and the PRS GI from Waves.

Acknowledged as one of the finest guitar makers in the universe, Paul Reed Smith needs no introduction. But what some people don't know is he has a head for tech with an amazing ear for sound, and the results are apparent in the GI: Its sound is, well, no sound at all—it's your basic straight wire with gain.

The 1/4" input exceeds 1Megohm for minimal pickup loading; three LEDs (present, nominal, and over) aid in level setting, and there are separate jacks for XLR balanced (switchable between line and mic level) and 1/4" unbalanced -10dB out. You'll also find a ground lift switch and the option to use either AC or battery power.

The PRS GI was introduced at the same time as Waves' GTR software, and this humble little hardware box was somewhat overshadowed. But it's available separately, not just as part of the GTR package—and that's good news if you want to feed a mixing console or line-level processor with a guitar, but not lose one iota of its tone in the process. —*Craig Anderton* EQ

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Barenaked Ladies
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* The above is a partial list of artists and sound companies that have used Radial products. No endorsement is offered or implied by their being listed here. Sorry if we've missed you – let us know and we'll include you next time!

SOUNDS

BIG FISH AUDIO: SYNTRON-X

Like some weird genetic imperative, humans seem driven to revive whatever music happened 20 years ago . . . so welcome to the '80s revival, complete with the trademark glistening synths, metronomic electronic drums, and bouncy bass blorps. And that's what you'll find in Syntron-X, along with 23 construction kits, arpeggiations, vocoded voices, effects beats (basically drum patterns through resonance), and four useful electronic drum kits.

Stylistically, this is more the Euro-style '80s music (Heaven 17, Berlin, etc.), not the frothy, synth/guitar-driven pop of groups like the Cars. In fact, it's *all* synths and electronics, save for a couple sampled piano sounds.

Construction kit tempos generally hover in the 115–130BPM range, with a tonic/fifth or minor vibe rather than opting for major keys. Each kit has a mixed track, along with (typically) one to two dozen tracks that make up the kit.

Is there life after the '80s? Yes—a lot of these loops are suited to today's dance music, not just for adding a bit of a retro vibe but also because some of these sounds have become standards. Wisely, there's minimal processing, thus allowing them to fit in more contexts than if they were, say, drenched in reverb.

Whether you want to remember the '80s or bring them up to date, within its self-imposed limits Syntron-X delivers the goods. —*Craig Anderton*

Contact: Big Fish Audio, www.bigfishaudio.com
Format: DVD-ROM with about 1.07GB of unique 24-bit/44.1kHz WAV files (732 loops, 184 one-shots), duplicated as Apple Loops (and REX files where possible); also has Stylus RMX installer
List price: $69.95

SONY: METAL—THE ULTIMATE CONSTRUCTION KIT

Born "Heavy Metal" in the late '60s, Metal has not only survived—it's having a resurgence due to its ability to mutate for our apocalyptic times. But c'mon, can samples really capture the speaker-rupturing, headbanging *angst* and mayhem of true metal?

Both discs have construction sets with suitably heavy bass, emphatic drums (with individual tracks often broken out separately), and tormented guitars, but the files are organized a little differently than usual: Files from the construction sets have the same basic names, but loops of various instruments go in their respective "Foundation" folders. This emphasizes that you can indeed mix and match easily among the construction kits, thanks to the excellent Acidization.

There are also folders with drum fills, guitar chords and noises, lots of loops in 6/8 time, drum one-shots, diseased-sounding vocal loops, etc. There's serious raw material here, and 29 "Sound Design" files with unearthly noises—perfect for accenting a tune, or disturbing neighbors. Extra credit: Disc 2 has a video with some highly educational info on how the drums were miked (yes, it's worth watching).

The loops are very style-specific; don't expect to use any of this in your remake of *Bridge Over Troubled Water*. But you really can put together convincing metal with this collection—and I don't mean scrap metal. —*Craig Anderton*

Contact: Sony Creative Software, www.sonycreativesoftware.com
Format: Two CD-ROMs with 1,037MB/1,115 mostly Acidized WAV loops with a some hits thrown in; 24-bit/44.1kHz
List price: $99.95

FUTURE LOOPS: FUTURE PERCUSSION

Percussion libraries can get a lot of exercise, because good percussion works with anything from hard rock to soft chill to dance. These Latin/Brazilian-based loops, played by Marcelo Salazar, have the usual suspects (conga, guiro, agogo, cowbells, etc.), but among the 63 (!) percussion instruments, there are plenty of exotic options too. Some of my favorite loops are the Derbaque—they can *really* propel a song—but all of them swing, and have a lively, human "feel."

The loops are dry with a bit of room sound, so they're dry enough for dry tracks, but reverb-friendly if you want additional ambience. What's more, there are plenty of hits—add an off beat or two where needed, or create a cool kit in MachFive, Battery, Reason, etc. Most loops are relatively short, often with variations, so it's easy to string them together into a complete part.

Unfortunately, the WAV files aren't Acidized, and the REX editing is sub-standard at best—I'd advise using DSP-based stretching. Of course you could edit the REX markers using ReCycle, or add Acidization markers, but the loops are played by a real human so the beats don't always line up with the default marker placement—tweaking is required.

Nonetheless, if you can live with the inconvenient stretching, these are fine loops that can add serious percussive spice to just about any tune. —*Craig Anderton*

Contact: Future Loops, www.futureloops.com
Format: DVD-ROM with 1,158 loops/172 one-shot hits/945MB total (743MB of unique WAV files, loops duplicated as REX files); 16-bit/44.1kHz
List price: $99.95 boxed (free shipping), $89.95 download

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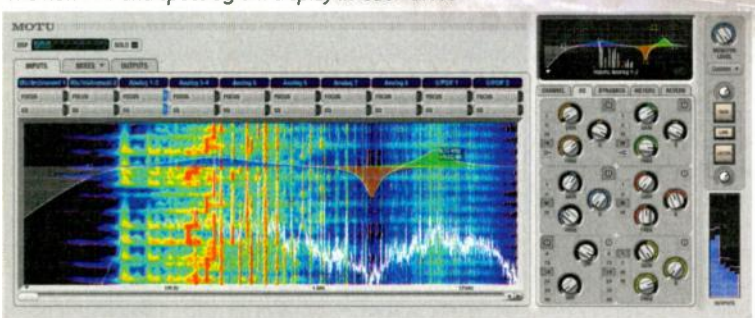

MOTU Traveler-mk3

Portable I/O with effects & mixing

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. Use bus power from your laptop, or use a battery pack for extended sessions in even the most remote locations. The ultimate professional portable interface/digital mixer.

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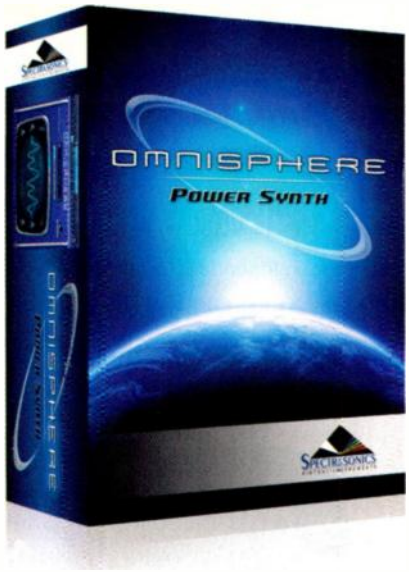
MC Mix

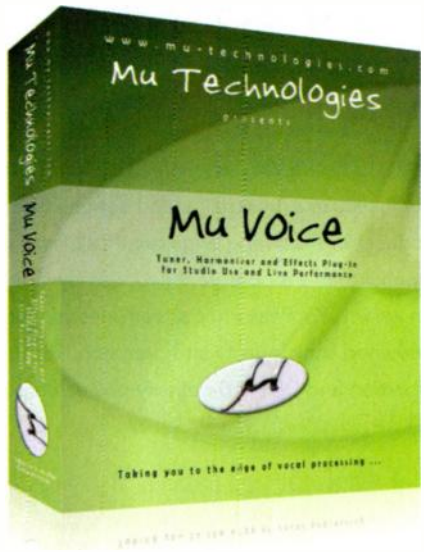
MC Control



Spectrasonics Omnisphere

Spectrasonics' new flagship power synth

Omnisphere breaks completely new sonic ground by combining a wide variety of hybrid realtime synthesis techniques, an epic library of remarkable "psychoacoustic" sounds, and many innovative features that have never been seen before in any hardware or software synthesizer. The first instrument to be based on Spectrasonics newly developed STEAM Engine, Omnisphere will inspire a lifetime of exploration.



Mu Technologies Mu Voice

Vocal tuning and intelligent harmonizer

Imagine a plug-in that allows you to tune your vocal recordings, apply special effects and add natural-sounding harmonies when mixing your track. The proprietary spectral analysis and synthesis techniques of Mu Technologies set new standards in vocal processing providing a unique tool for your Digital Performer vocal tracks. Great for musicians and engineers alike, equally adept for both live and stage use.

Shure KSM 44

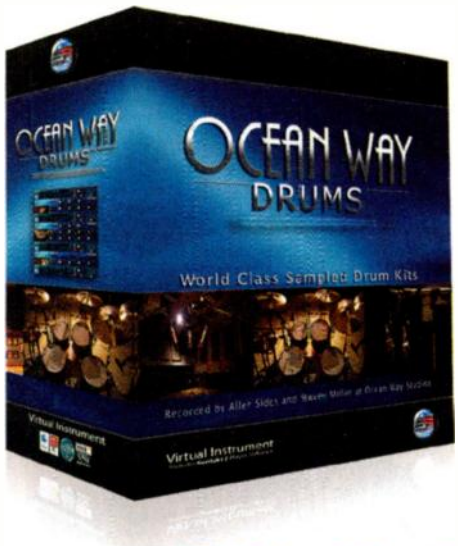
Multi-pattern condenser mic

The flagship of the KSM line — and the new must-have mic for any MOTU studio. The KSM 44 has extended frequency response specially tailored for critical studio vocal tracking. Includes flexible polar patterns: cardioid, omni and bidirectional.

Dangerous Music D-Box

Killer analog summing & monitor management

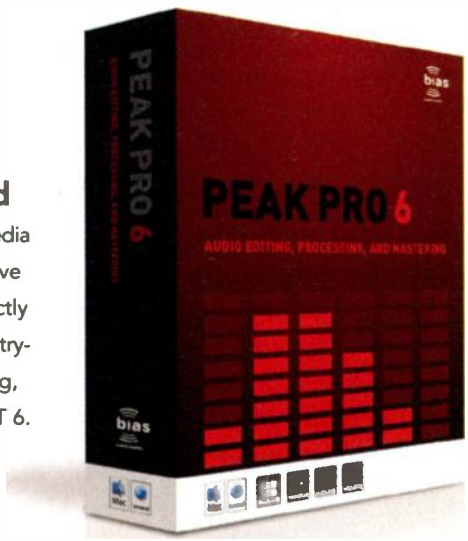
Dangerous Music's renowned analog summing adds incredible punch, depth and warmth to "in the box" mixes. Now add monitor control with two speaker outs, two digital ins with D/A, talkback, two phone outs and aux analog input and you've got a must-have final analog mixing stage for your MOTU mixes.



Ocean Way Drums from Sonic Reality

The premiere virtual drum instrument

Put the power of the world's most awarded studio complex in your MOTU desktop studio. Ocean Way Drums delivers 19 drum kits immaculately recorded in legendary Ocean Way Studio B where artists like Radiohead, Green Day and Eric Clapton create hit records. The new affordable Silver Edition is now only $499 MSRP.



BIAS Peak Pro 6

Evolution of an award-winning standard

Whether you're a musician, sound designer, audio editor, multimedia producer or mastering engineer, Peak Pro 6 offers more creative potential than ever before. Used side-by-side or launched directly from within DP6, Peak Pro 6 streamlines your workflow with industry-renowned sonic quality and precision. For additional mastering, restoration and DDP 2.0 delivery power, step up to Peak Pro XT 6.

Antelope Isochrone OCX

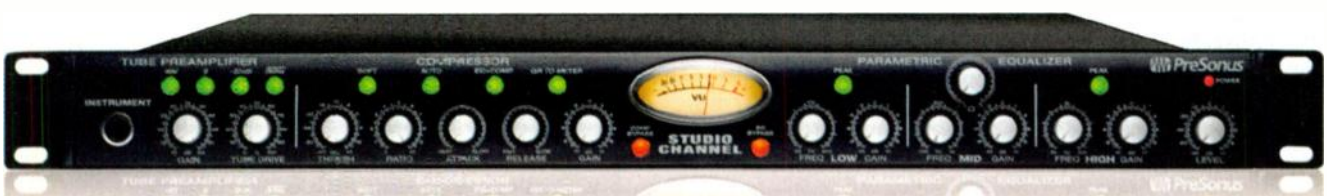
Premier reference master clock based on aerospace technology

A master clock is the heart of any MOTU digital studio, essential to maintaining stability and preserving sonic integrity. The Isochrone OCX is an ultra stable, great sounding master clock highly regarded by many top professionals. Mixes come alive with much more depth and detail when the OCX is plugged into gear that has a digital input. Hear it and believe it!

PreSonus Studio Channel

Channel strip with class A vacuum tube preamp

This fully featured channel strip delivers a class A tube mic/instrument preamplifier, a variable VCA compressor, and a 3-band parametric EQ complete with VU metering — all at a great price. Studio Channel is the perfect way to add that signature fat tube tone to any track.



Enhance your MOTU desktop studio experience

Run DP6, the Traveler-mk3 and a host of exciting new companion products on the latest Mac Pro tower for the most powerful desktop studio ever.

Mackie Control Universal Pro

The most complete control surface for Digital Performer

Nine motorized, touch-sensitive faders effortlessly control bankable channels while eight assignable V-Pots and over 50 master buttons provide unparalleled DAW control. A massive transport section with weighted jog wheel and robust build quality offers a true console feel. The 8-channel Expander Pro and C4 Pro virtual instrument controller allow seamless expansion.

Mackie HR824mk2 Active Studio Monitors

Premium performance to perfect your mix

A mainstay of professional studios worldwide, the HR824mk2 high-resolution monitors employ the new Zero Edge Baffle, which minimizes diffraction for a crystal-clear image and an evenly dispersed ultra-wide sweet spot. Acoustic Space, LF roll-off and HF controls allow custom configurations, which are sure to suit your MOTU studio space...and your taste.

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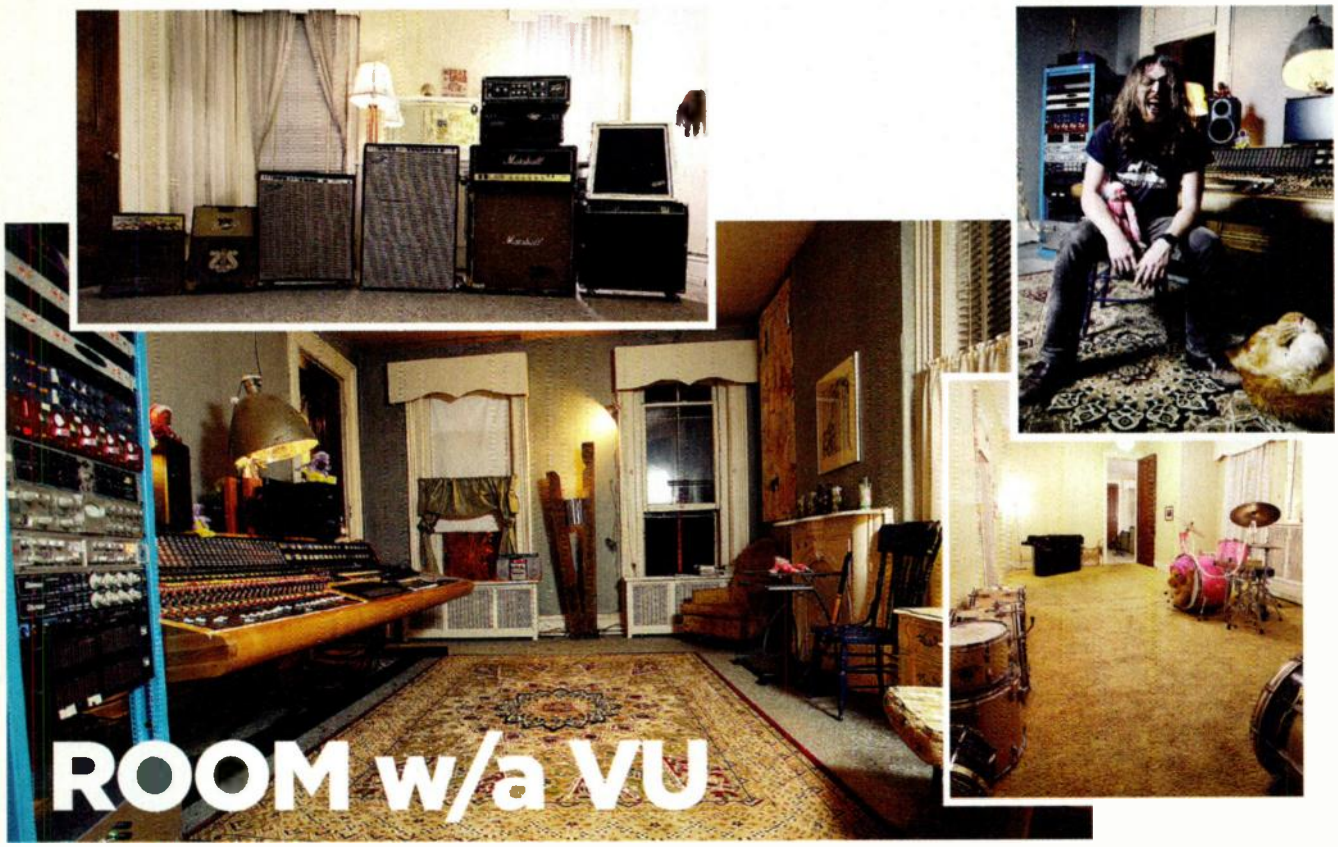

ROOM w/a VU

by Angelina Skowronski

STUDIO NAME: The Funeral Home
LOCATION: Louisville, KY
CONTACT: www.myspace.com/thefuneralhomestudio
KEY CREW: Kevin Ratterman
CONSOLE: Trident TSM 40x32x24
MULTITRACKS: Otari MTR-10 1/4" 2-track; Studer A827 2" 24-track; TASCAM MS-16 1" 16-track; PC running Nuendo 3.2 on Win XP with ABIT IP35 Motherboard, Intel Quad Q6600 2.4GHz processor, 4GB RAM
CONVERTERS: Apogee Big Ben Digital Clock; Lynx Aurora 16 (6)
MONITORS: Mackie HR 824; plethora of consumer shelf systems for reality checks
MICPRES: API 512 (4); Avalon 737; Focusrite Red (4); Neve 1073 (2); Trident TSM Series (40); Universal Audio 610
MICS: AKG 451, D112, 451, 414 (2); Coles 4038; Groove Tubes GT 6TM; Neumann U87, KM184 (2); Røde NT1; Royer 121 (3); Sennheiser 421 (2), 441, 504 (2); Shure KSM 32 (2), SM 7, SM 57 (4), Beta 52
COMPRESSORS: Avalon 737; Empirical Labs Distressors (2); Universal Audio 1176
NOTES: Comfort is a must for Wax Fang drummer Kevin Ratterman's home studio—only his comfort level sits above an operating funeral home. "My family made alcohol here but it was basically stopped during prohibition, so they turned it into a funeral home because they thought that it would be better business," explains Kevin. "My family operated the funeral home downstairs and lived upstairs."

As the first operating (and still operating) funeral home in Louisville, Kevin turned the 500 sq. ft. Victorian-style building into his own recording studio after his family vacated the living quarters. And living quarters it still is, as bands from as far away as Japan have come to live here while working on a record. "We work with a lot of little bands—it's great because they can stay for little cost, and sprawl out all over the floor."

The studio operates opposite hours of the services downstairs so as not to bother the dead. Kevin continues, "There's a metaphysical feeling with all the death and ending that goes on downstairs, and all the life and creation that's happening upstairs; it's a revolving door of energy. I love the idea of making records in unconventional environments, and recording music where people *listen* to music instead of studios that are acoustically tuned and sound dead."

To add to the unconventional atmosphere, The Funeral Home is currently working on making the facilities 100 per cent analog. "My goal is having the option of not touching the computer at all. I want a more organic way of working, and better-sounding recordings. Our next project is for the band The Kings, Daughters, and Sons, a local band from here in Louisville. They are going to track everything live to tape and I'm really excited about that . . . you don't get too many bands willing to do that these days." Other acts that have passed through the mortuary's doors include Japanese band Parms, My Morning Jacket, and Kevin's own band Wax Fang.

With analog equipment collected and borrowed (including the Otari and TASCAM tape machines from friends Jim James and John Quaid of My Morning Jacket), Kevin is close to his all-analog goal. "I will never sell anything, I've learned that. Keep everything because if not, you'll regret it for sure." EQ

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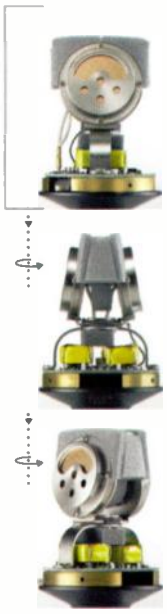

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